APPENDIX D

Cultural Resources Assessment Report

1045 OLIVE PROJECT, CITY OF LOS ANGELES, CALIFORNIA

Phase I Cultural Resources Assessment Report

Prepared for
1045 Olive, LLC
2200 Biscayne Boulevard
Miami, Florida 33137

July 2019

ESA

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Phase I Cultural Resources Assessment Report

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Prepared for:
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Project Location:
Hollywood (CA) USGS 7.5-minute Topographic Quad
Township 1 South, Range 13 West, unsectioned

Acreage: Approx. 0.96 acres

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EXECUTIVE SUMMARY

Environmental Science Associates (ESA) has been retained by 1045 Olive, LLC, to conduct a cultural resources assessment for the 1045 Olive Project (Project) in support of an Environmental Impact Report (EIR) with the City of Los Angeles as the lead agency pursuant to the California Environmental Quality Act (CEQA). This Phase I Cultural Resources Assessment Report (Report) identifies the potential for the Project to impact historical resources as defined in *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5 (a) and unique archaeological resources as defined in California Public Resources Code (PRC) Section 21083.2(g). The assessment of impacts to unique paleontological resources and sites and unique geologic features as identified in *CEQA Guidelines*, Appendix G (V(c)) is contained in a separate report entitled*1045 Olive Project, Paleontological Resources Assessment Report (ESA, 2018)*. The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial (restaurant/retail) uses. A 61-story tower would sit atop a nine level podium structure (Podium) for a total of 70 floors above grade, up to 810 feet in height. The Project would also have six subterranean levels. Approximately 103,380 square feet of open space would be provided and the Project would require approximately 80,520 cubic yards (cy) of soil removal from the Project Site with maximum excavation depths of approximately 64 feet. Shallow earthwork would be required for repaving and alley improvements. To support development of the Project, five existing single-story commercial buildings located on the Project Site containing approximately 35,651 square feet, would be demolished.

A records search for the Project was conducted on December 7, 2017 at the California Historical Resources Information System South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton. The records search included a review of previous cultural resources studies and previously-recorded cultural resources including archaeological resources within the Project Site and a 0.5-mile radius, and historic architectural resources within the Project Site and a 0.25-mile radius. No archaeological resources were previously recorded within the Project Site itself or within the 0.5-mile radius. While no previously recorded historic architectural resources are located within the Project Site itself, 10 are located within the 0.25-mile radius. Of the 10 historic architectural resources all are buildings; six (P-19-166999, -167316, -173175, -173178, -173179, and -187003) of which have been recommended eligible for listing in the National Register of Historic Places (National Register), one (P-19-187866) has been demolished, and three (P-19-188478, -188904, and 189239) have been recommended or determined as ineligible for the National Register.

ESA also obtained a report from the SCCIC that indicates that a branch of the *Zanja* Conduit System (*Zanja), Zanja* No. 8, is mapped adjacent the Project Site to the west. The *Zanja* is Los Angeles' original water conveyance system constructed starting in 1781 and removed from service in 1902. The *Zanja* has not been previously evaluated for listing in the National Register, California Register of Historical Resources (CRHR), or for its potential to qualify as Historic-

Cultural Monuments (HCM) under the City of Los Angeles Cultural Heritage Ordinance. For the purposes of this Project, the City of Los Angeles, as lead CEQA agency has determined it will treat the *Zanja* as a "historical resource" under CEQA.

The Native American Heritage Commission (NAHC) was contacted on November 16, 2017 to request a search of the Sacred Lands File (SLF) for the Project. The NAHC responded to the request in a letter dated November 17, 2017. The letter states that the SLF search had negative results for Native American cultural resources within or adjacent to the Project Site.

A cultural resources survey of the Project Site was conducted on December 12, 2017. A total of five previously unevaluated buildings constructed between 1910 and 1945 (exceeding 45 years in age per the California Office of Historic Preservation Instructions for Recording Historical Resources) were identified on the Project Site. The five buildings are characterized as vernacular commercial buildings and are referred to as Buildings A through E for purposes of this Report. No surface evidence of archaeological resources was encountered on the Project Site as a result of the cultural resources survey.

The five buildings (Buildings A through E) located within the Project Site were evaluated for their potential eligibility for listing in the National Register, the California Register, and for their potential to qualify as HCMs under the City of Los Angeles Cultural Heritage Ordinance. The evaluation found Buildings A through E ineligible for listing in the National Register, California Register, or as HCMs, therefore, the buildings do not qualify as historical resources under CEQA. As a result, the Project would not result in a direct impact to historic architectural resources qualifying as historical resources under CEQA. The potential for indirect impacts to historic architectural resources identified within the Project vicinity were also evaluated. Due to their distance from the Project Site and other changes that have occurred to the historic setting of the Project area, no indirect impacts on historical architectural resources would occur.

One historical resource (*Zanja* No 8) was identified in this Report as having the potential to be located subsurface, and adjacent the Project Site where alley work is proposed.

Although no known unique archaeological resources were identified on the Project Site itself, based on the history of the area and the nature of past development on the Project Site, the Project has the potential to encounter unknown subsurface archaeological resources that could qualify as either historical resources or unique archaeological resources under CEQA. To reduce impacts to the *Zanja* No. 8 and to any unknown subsurface archaeological resources, the following recommendations are made: retention of a qualified archaeologist; archaeological monitoring during ground disturbing activities; and procedures to be followed in the event of the inadvertent discovery of *Zanja* No. 8, any portions thereof, or other subsurface archaeological resources or human remains.

INTRODUCTION AND PROJECT DESCRIPTION

Introduction

This Phase I Cultural Resources Assessment Report (Report) has been prepared for the 1045 Olive Project (Project) in support of an Environmental Impact Report (EIR). The purpose of this Report is to assess the potential for the Project to impact historical resources as defined in *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5 (a), and unique archaeological resources as defined in California Public Resources Code (PRC) Section 21083.2(g). The assessment of impacts to unique paleontological resources and sites and unique geologic features as identified in CEQA Appendix G (V(c)), is contained in a separate report entitled *1045 Olive Project, Paleontological Resources Assessment Report (ESA, 2018)*. The City of Los Angeles is the lead agency for the Project pursuant to the California Environmental Quality Act (CEQA). The scope of work for this Report included: an archival records research conducted at the South Central Coastal Information Center (SCCIC); review of previous City surveys including SurveyLA; historical map and photograph research; construction and occupancy history research for the Project Site including building permits, assessor records, city directories and historical newspapers; review of neighborhood settlement and development history including historic maps, aerial photos, historical newspapers and published local histories; a survey of the Project Site to identify any surface evidence of archaeological resources; a survey of the Project Site to document historic architectural resources; a review of Project-related materials and documents; and, a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC).

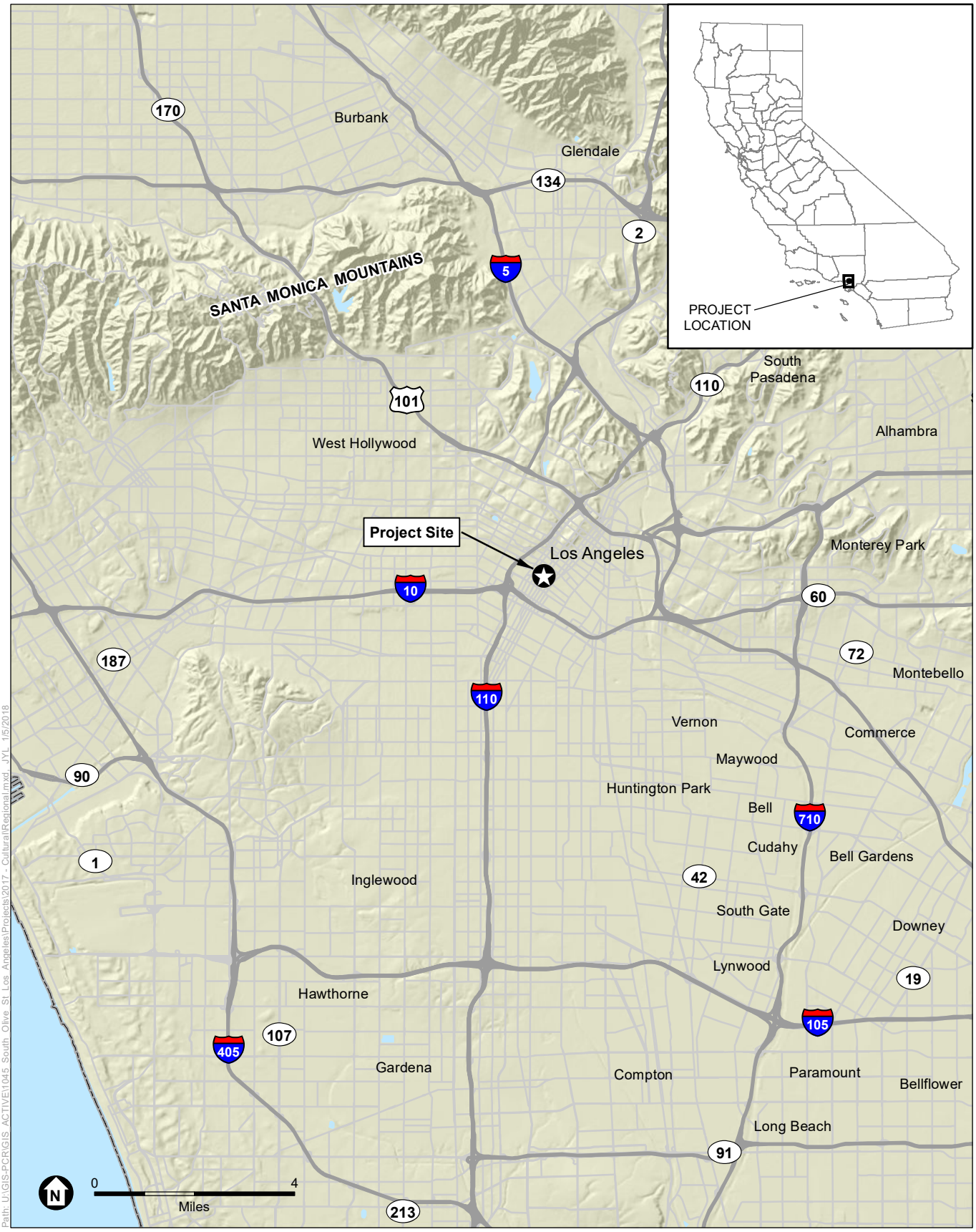
ESA personnel involved in the preparation of this Report include: Monica Strauss, M.A., R.P.A., Program Director; Margarita Jerabek, Ph.D., Director of Historic Resources; Sara Dietler, B.A., Senior Cultural Resources Specialist and Cultural Task Manager; Vanessa Ortiz, M.A., R.P.A., archaeological resources surveyor and Report author; and Chris Taylor, M.A., historical resources surveyor and Report author; and Ashley Brown, M.A. historical resources Report author. Resumes of key personnel are included in **Appendix A**.

Project Location

The 0.96-acre (41,603 sf) Project Site is located at the northwest corner of Olive Street and W. 11th Street in the Downtown area and South Park community of the City of Los Angeles (City). (**Figure 1**). The Project contains assessor parcel numbers (APNs): 5139-010-008 (1033 South Olive St.); 5139-010-002 (1041 South Olive St.); 5139-010-010 (1045 South. Olive St.); 5139-010-011 (1053 South Olive St.); 5139-010-001 (1057 South Olive St.). The block is split by a south to north alley at midblock between Olive Street and Grand Avenue. The alley serves as the western boundary of the Project Site. Uses within the block that lie adjacent to the Project include

a seven-story mixed-use development to the north, seven-story mixed-use development to the northwest, and a two-story commercial building and 25-story mixed-use high-rise building to the west (**Figure 2**).

Specifically, the Project Site is situated in an unsectioned portion of Township 1 South, Range 13 West on the Hollywood, CA USGS 7.5-minute topographic quadrangle (**Figure 3**). The Project Site is currently improved with five vernacular commercial buildings constructed between 1911 and 1947. For the purposes of this analysis the five existing buildings are identified as Buildings A through E as shown on **Figure 3**.



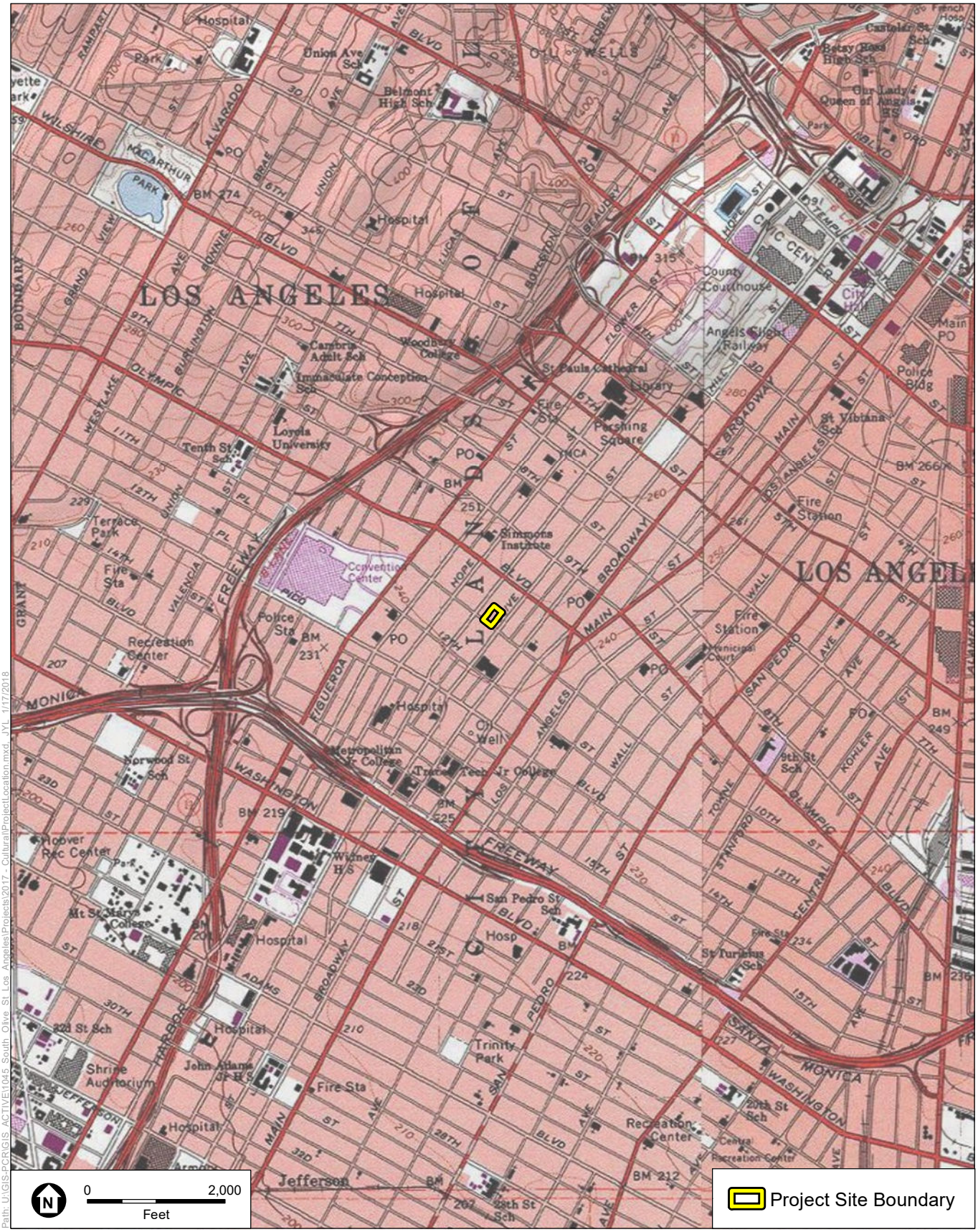
SOURCE: ESRI

1045 Olive Project Cultural Resources Assesment

Figure 1

Regional Location Map

ESA



SOURCE: USGS 7.5' Topo Quad Hollywood 1978, 1982

1045 Olive Project Cultural Resources Assessment

Figure 2

Project Location Map

ESA



SOURCE: Google

1045 Olive Project Cultural Resources Assesment

Figure 3

Aerial Photograph Showing Project Site Boundary

ESA

Project Description

The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial (restaurant/retail) uses. A 61-story tower would sit atop a nine level podium structure (Podium) for a total of 70 floors above grade, up to 810 feet in height. The Project would also have six subterranean levels. Approximately 103,380 square feet of open space would be provided, including a ground level public Plaza with landscaping and public art (Plaza). Open space and recreation facilities for residents would be located on the 8th Floor cut-out Terrace and larger 10th Floor Terrace, within mid-building cut-out areas on the upper floor levels and on a Tower Rooftop Terrace and within private balconies.

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances from the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley. Vehicle parking would be provided within six (6) subterranean parking levels and in eight (8) levels of above-grade parking within the Podium. The Project would require approximately 80,520 cubic yards (cy) of soil removal from the Project Site with maximum excavation depths of approximately 64 feet. Shallow earthwork would be required for repaving and alley improvements.

SETTING

Natural Setting

The Project is located in a relatively flat area of the western Los Angeles Basin. The basin is formed by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north, and the San Bernardino and San Jacinto Mountains to the east. The basin was formed by alluvial and fluvial deposits derived from these surrounding mountains. Prior to urban development and the channeling of the Los Angeles River, the Project Site (located 1.85 miles west of the Los Angeles River Channel) was likely covered with marshes, thickets, dense woodland, and grassland. The floodplain forest of the Los Angeles Basin formed one of the most biologically rich habitats in southern California. Willow, cottonwood and sycamore, and dense underbrush of alder, hackberry, and shrubs once lined the Los Angeles River as it passed near present-day downtown Los Angeles. Although historically most of the Los Angeles River was dry for at least part of the year, shallow bedrock in the Elysian Park area north of downtown forced much of the river's underground water to the surface. This allowed for a steady year-round flow of water adjacent to the east of the area that later became known as Los Angeles. Currently, the Project Site, like most of the downtown area, is fully developed. A geotechnical study prepared in support of the Project indicates that the Project Site is likely underlain by disturbed soil/fill to approximately 7 to 9.5 feet in depth overlying alluvium.

Prehistoric Setting

The earliest evidence of occupation in the Los Angeles area dates to at least 9,000 years before present (B.P.) and is associated with a period known as the Millingstone Cultural Horizon (Wallace 1955; Warren 1968). Departing from the subsistence strategies of their nomadic big-game hunting predecessors, Millingstone populations established more permanent settlements. These settlements were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources including seeds, fish, shellfish, small mammals, and birds were exploited. Early Millingstone occupations are typically identified by the presence of handstones (manos) and millingstones (metates), while those Millingstone occupations dating later than 5,000 years B.P. contain a mortar and pestle complex as well, signifying the exploitation of acorns in the region.

Although many aspects of Millingstone culture persisted, by 3,500 years B.P. a number of socioeconomic changes occurred (Erlandson 1994; Wallace 1955; Warren 1968). These changes are associated with the period known as the Intermediate Horizon (Wallace 1955). Increased populations in the region necessitated the intensification of existing terrestrial and marine resources (Erlandson 1994). This was accomplished in part through the use of the circular shell fishhook on the coast, and more abundant and diverse hunting equipment. Evidence for shifts in settlement patterns has been noted at a variety of locations at this time and is seen by many researchers as reflecting increasingly territorial and sedentary populations. The Intermediate

Horizon marks a period in which specialization in labor emerged, trading networks became an increasingly important means by which both utilitarian and non-utilitarian materials were acquired, and travel routes were extended. Archaeological evidence suggests that the margins of numerous rivers, marshes, and swamps within the Los Angeles River Drainage served as ideal locations for prehistoric settlement during this period. These well-watered areas contained a rich collection of resources and are likely to have been among the more heavily trafficked travel routes.

The Late Prehistoric period, spanning from approximately 1,500 years B.P. to the mission era, is the period associated with the florescence of the contemporary Native American group known as the *Gabrielino* (Wallace 1955). Coming ashore near Malibu Lagoon or Mugu Lagoon in October of 1542, *Juan Rodriguez Cabrillo* was the first European to make contact with the *Gabrielino* Indians. Occupying the southern Channel Islands and adjacent mainland areas of Los Angeles and Orange Counties, the *Gabrielino* are reported to have been second only to their Chumash neighbors in terms of population size, regional influence, and degree of sedentism (Bean and Smith 1978). The *Gabrielino* are estimated to have numbered around 5,000 in the pre-contact period (Kroeber 1925) and maps produced by early explorers indicate that at least 26 *Gabrielino* villages were within proximity to known Los Angeles River courses, while an additional 18 villages were reasonably close to the river (Gumprecht 1999). Subsistence consisted of hunting, fishing, and gathering. Small terrestrial game was hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith 1978; Reid 1939 [1852]). The primary plant resources were the acorn, gathered in the fall and processed with mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly leafed-cherry (Reid 1939 [1852]).

Ethnographic Setting

Gabrielino

The Project Site is located in a region traditionally occupied by the Takic-speaking Gabrielino Indians. The term “Gabrielino” is a general term that refers to those Native Americans who were administered by the Spanish at the Mission San Gabriel Arcángel. Prior to European colonization, the Gabrielino occupied a diverse area that included: the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber, 1925). Their neighbors included the Chumash to the north, the Juañeno to the south, and the Serrano and Cahuilla to the east. The Gabrielino are reported to have been second only to the Chumash in terms of population size and regional influence (Bean and Smith, 1978). The Gabrielino language is part of the Takic branch of the Uto-Aztecan language family.

The Gabrielino Indians were hunter-gatherers and lived in permanent communities located near the presence of a stable food supply. Subsistence consisted of hunting, fishing, and gathering. Small terrestrial game were hunted with deadfalls, rabbit drives, and by burning undergrowth,

while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith, 1978). The primary plant resources were the acorn, gathered in the fall and processed in mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly-leafed cherry.

Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. The Gabrielino are estimated to have had a population numbering around 5,000 in the pre-contact period (Kroeber, 1925). Villages are reported to have been the most abundant in the San Fernando Valley, the Glendale Narrows area north of downtown, and around the Los Angeles River's coastal outlets (Gumprecht, 2001). Gabrielino villages are reported by early explorers to have been most abundant near the Los Angeles River, in the area north of downtown, known as the Glendale Narrows, and those areas along the river's various outlets into the sea. Among those villages north of downtown are *Maawnga* in the Glendale Narrows; *Totongna* and *Kawengna,* in the San Fernando Valley; *Hahamongna*, northeast of Glendale; and the village of *Yaangna*, in the vicinity of present-day downtown Los Angeles.

The exact location of *Yaangna* within downtown Los Angeles continues to be debated, although some believe it to have been located at the present-day location of the Civic Center (McCawley 1996). Other proposed locations are near the present day Union Station (Chartkoff and Chartkoff 1972:64), to the south of the old Spanish Plaza, and near the original site of the Bella Union Hotel located on the 300 Block of North Main Street (Robinson 1963:83, as cited in Dillon 1994:30). Dillon (1994:30) hypothesizes that the Union Station location is an unlikely spot for a large village or habitation, as it lies within the annual Los Angeles River flood zone. Local sources such as the Echo Park Historical Society report that when Gaspar de Portola and Father Juan Crespi camped on the river bank opposite the North Broadway Bridge entrance to Elysian Park, they were served refreshments by *Yaangna* Indian villagers from the current location of the Los Angeles Police Academy (Echo Park Historical Society 2008).

Based on baptismal records, *Yaanga* appears to have been occupied until at least 1813. But by the early 1820s, *Yaanga's* Gabrielino residents were displaced to an area south of the village site in what is presently the block north of Los Angeles Street and 1st Street, approximately 1.3 miles northwest of the Project Site (Morris et al., 2016). By 1836, the displaced Gabrielino community was known as *Rancho de los Pablinos*, and Los Angeles residents began complaining about the Gabrielino bathing in the *Zanjas* (Morris et al., 2016). As a result of the complaints, the Gabrielino were once again displaced farther to the east near the present-day intersection of Alameda Street and Commercial Street, approximately 1.22 miles northwest of the Project Site. Between 1845 and 1847, they were moved to the east side of the river to a settlement that was known as *Pueblito*, and by 1847, the Gabrielino from *Yaanga* were displaced once again and left without a place in which to form a new community. As a result, the Gabrielino dispersed throughout Los Angeles.

A second community or village, named *Geveronga,* may have been located in the vicinity of the current downtown Los Angeles' city center, reported in the San Gabriel baptismal records as located "in the racheria adjoining the Pueblo of Los Angeles" (McCawley 1996:57).

Historic Setting

The *Gabrielino* were virtually ignored between the time of Cabrillo's visit and the Spanish Period, which began in 1769 when Gaspar de Portola and a small Spanish contingent began an exploratory journey along the California coast from San Diego to Monterey. Passing through the Los Angeles area, they reached the San Gabriel Valley on August 2, 1769 and traveled west through a pass between two hills where they encountered the Los Angeles River and camped on its east bank near the present-day North Broadway Bridge and the entrance to Elysian Park. This location has been designated California Historic Landmark Number 655, the Portola Trail Campsite. Father Crespi (a member of Portola's party) indicated in his diaries that on that day they "entered a spacious valley, well grown with cottonwoods and alders, among which ran a beautiful river. This plain where the river runs is very extensive and…is the most suitable site for a large settlement" (The River Project 2001). He goes on to describe this "green, lush valley"; its "very full flowing, wide river"; the "riot of color" in the hills; and the abundance of native grapevines, wild roses, grizzly, antelope, quail and steelhead trout. Crespi observed that the soil was rich and "capable of supporting every kind of grain and fruit which may be planted." The river was named *El Rio y Valle de Nuestra Senora la Reina de Los Angeles de la Porciuncula*.

Missions were established in the years that followed the Portola expedition, the fourth being the Mission San Gabriel Archangel founded in 1771 near the present-day City of Montebello, approximately 7.5 miles east of the Project Site. By the early 1800s, the majority of the surviving *Gabrielino* population had entered the mission system. The Gabrielino inhabiting Los Angeles County were under the jurisdiction of either Mission San Gabriel or Mission San Fernando. Mission life offered the Indians security in a time when their traditional trade and political alliances were failing and epidemics and subsistence instabilities were increasing (Jackson 1999).

On September 4, 1781, which was 12 years after Crespi's initial visit, the *Pueblo de la Reina de los Angeles* was established not far from the site where Portola and his men camped. Watered by the river's ample flow and the area's rich soils, the original pueblo occupied 28 square miles and consisted of a central square, surrounded by 12 houses, and a series of 36 agricultural fields occupying 250 acres, plotted to the east between the town and the river (Gumprecht 1999).

An irrigation system that would carry water from the river to the fields and the pueblo was the communities' first priority and was constructed almost immediately. The main irrigation ditch, or *Zanja Madre*, was completed by the end of October 1781. It was constructed in the area of present-day Elysian Park, and carried water south to the agricultural lands situated just east of the pueblo (Gumprecht 1999).

By 1786, the flourishing pueblo attained self-sufficiency and funding by the Spanish government ceased (Gumprecht 1999). Fed by a steady supply of water and an expanding irrigation system, agriculture and ranching grew, and by the early 1800s the pueblo produced 47 cultigens. Among the most popular were grapes used for the production of wine (Gumprecht 1999). Vineyards blanketed the landscape between present-day San Pedro Street and the Los Angeles River. By

1830 an estimated 100,000 vines were being cultivated at 26 Los Angeles vineyards. Over 8,300 acres of land were being irrigated by the *Zanjas* during the 1880s (Gumprecht 1999).

The authority of the California missions gradually declined, culminating with their secularization in 1834. Although the Mexican government directed that each mission's lands, livestock, and equipment be divided among its converts, the majority of these holdings quickly fell into non-Indigenous hands. Mission buildings were abandoned and quickly fell into decay. If mission life was difficult for Native Americans, secularization was typically worse. After two generations of dependence on the missions, they were suddenly disenfranchised. After secularization, "nearly all of the Gabrielinos went north while those of San Diego, San Luis, and San Juan overran this county, filling the Angeles and surrounding ranchos with more servants than were required" (Reid 1977 [1851]:104). Upon his 1852 visit to Los Angeles, John Russel Barlett wrote,

> *I saw more Indians about this place than in any part of California I had yet visited. They were chiefly mission Indians, i.e., those who had been connected with the missions and had derived their support from them until the suppression of those establishments. They are a miserable, squalid-looking set, squatting or lying about the corners of the streets with no occupation. They have no means of obtaining a living, as their lands are taken from them, and the missions for which they labored and which provided after a sort for many thousands of them, are abolished (as cited in Sugranes 1909:77).*

The first party of U.S. immigrants arrived in Los Angeles in 1841, although surreptitious commerce had previously been conducted between Mexican California and residents of the United States and its territories. Included in this first wave of immigrants were William Workman and John Rowland, who soon became influential landowners. As the possibility of a takeover of California by the United States loomed large, the Mexican government increased the number of land grants in an effort to keep the land in the hands of upper-class *Californios* like the Domínguez, Lugo, and Sepúlveda families (Wilkman and Wilkman 2006:14–17). Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 1999). Having been established as a pueblo, property within Los Angeles could not be dispersed by the governor, and this task instead fell under the city council's jurisdiction (Robinson 1979).

A constant struggle to bring water to the residents of the pueblo necessitated the construction of Echo Park Reservoir, the Silverlake Reservoir, and the further expansion of the *Zanja* irrigation ditches. When these measures proved insufficient, a more permanent solution to Los Angeles' water shortage was sought. Under the direction of City engineer William Mulholland, the Los Angeles Bureau of Water Works and Supply constructed the 238-mile-long Los Angeles Aqueduct. This 5-year project, completed in 1913, employed the labor of more than 5,000 men and brought millions of gallons of water into the San Fernando (now Van Norman) Reservoir (Gumprecht 1999). Now able to offer water and sewer service at a grand scale, many smaller cities were voluntarily incorporated by Los Angeles (Robinson 1979:244).

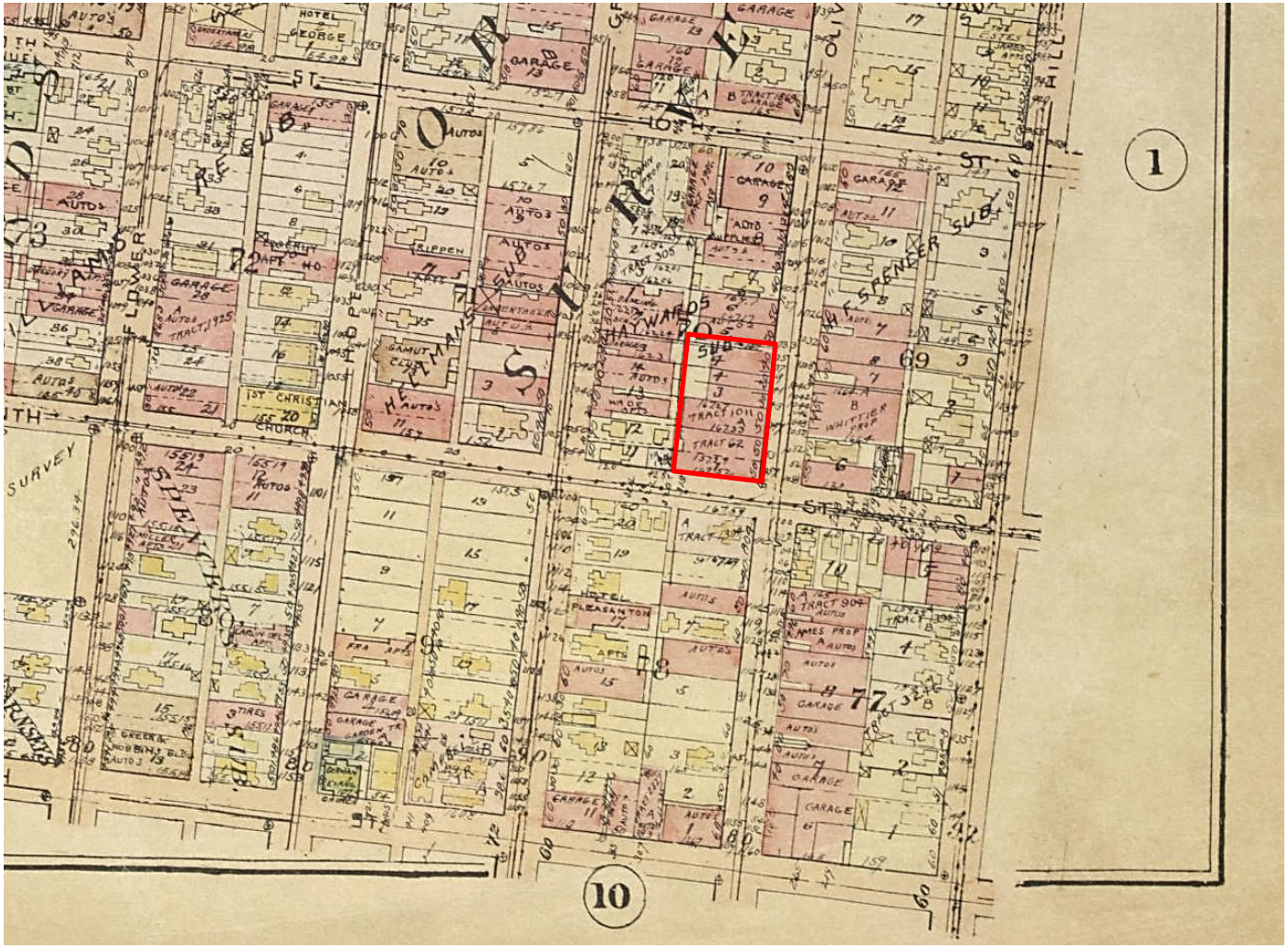
When Los Angeles was connected to the transcontinental railroad via San Francisco on September 5, 1876, it experienced a significant boost in population. The City would experience

its greatest growth in the 1880s when two more direct rail connections to the East Coast were constructed. The Southern Pacific completed its second transcontinental railway, the Sunset Route from Los Angeles to New Orleans, in 1883 (Orsi, 2005). In 1885, the Santa Fe Railroad completed a competing transcontinental railway to San Diego, with connecting service to Los Angeles (Mullaly and Petty, 2002). The resulting fare wars led to an unprecedented real estate boom, as well as affordable cross-country fares for immigrants. Despite a subsequent collapse of the real estate market, the population of Los Angeles increased 350 percent in the decade between 1880 and 1890 (Dinkelspiel, 2008).

The population boom of the 1880s drove the demand for real estate in Los Angeles. Farmland south and east of the City began to be replaced by residential and commercial development. Large tracts of agricultural land, now far more valuable for residential development, were subdivided and sold (Gumprecht, 1999).

From 1890 to 1900, the city continued to grow, and many infrastructure projects were completed during this decade (McWilliams, 1946). E.L. Doheny discovered oil in 1892, adding fuel to the flame. From 1900 to 1920, Los Angeles became a tourist mecca (McWilliams, 1946). The Los Angeles Aqueduct was constructed and a large portion of the San Fernando Valley annexed to the city during the first decade of the 20th century. From 1920 to 1930, Los Angeles experienced another population explosion, due in part to the automobile and the development of the movie industry. **Figure 4** depicts the development on the Project Site and vicinity in 1921. All told, between 1890 and 1930, the population of Los Angeles increased from 50,000 to 1.2 million people (Wild, 2005).

The population boom of the 1880s drove the demand for real estate in Los Angeles. Farmland south and east of the city began to be replaced by residential and commercial development. Large tracts of agricultural land, now far more valuable for residential development, were subdivided and sold (Gumprecht, 1999).



SOURCE: USC Digital Collection

Figure 4
Project Site on the 1921 Baist Real Estate Survey, Los Angeles

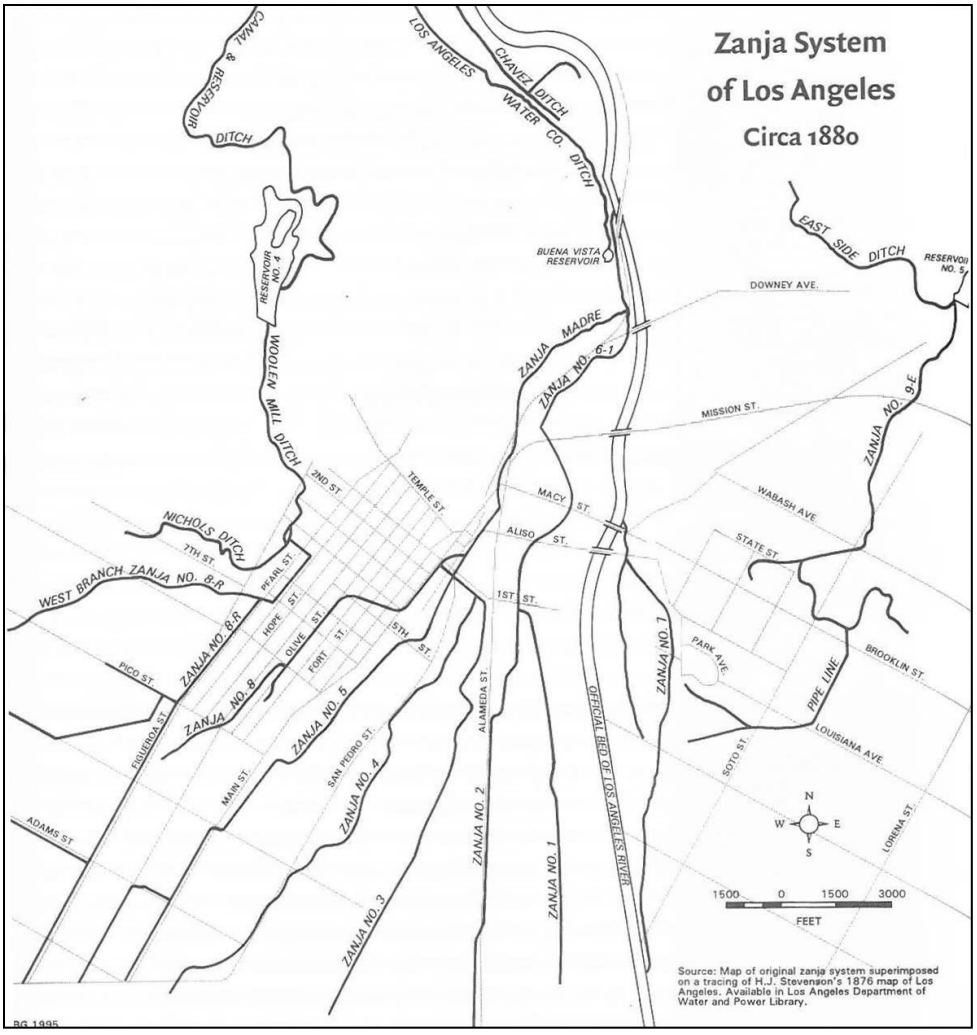
Zanja Irrigation Conduit System

For the Pueblo of Los Angeles, the *Zanjas*, or publicly owned irrigation ditches, sustained the area and enabled ranching and cultivation of the Los Angeles River's fertile floodplains. The *Zanjas* consisted of gravity-driven water conveyance systems, used for irrigation of lands at lower elevations from the water's source. The main ditch – the *Zanja Madre* (Mother Ditch) - was constructed in 1781 and carried water from the Los Angeles River south to the agricultural lands surrounding the pueblo. As the pueblo grew and more water was diverted from the river, the supply began to dwindle. Initially, however, there was little worry about the future water needs of the City, and no regulation of the water distribution itself. Typically, farmers would dig their own ditches from the main ditches or from the river. Private water carriers hauled and sold water to households for domestic use (Gumprecht, 2001).

By the mid-19th century, City officials established a system of water use fees and rules to govern the *Zanjas*. They created the official City position of *zanjero*, the highest paid of any public official in Los Angeles. The duties of the *zanjero* varied including issuance of permits for water usages, maintenance of the ditches, maintenance of the City dam, and even the early coordination of flood control work on the Los Angeles River (Gumprecht, 1999). While the *Zanjas* worked well for irrigation, the water was frequently unsuitable for domestic purposes. The City had no sewer system or other outlet for its liquid waste, and the *Zanjas* were being used for laundry and bathing, as well as trash and sewage disposal. Several efforts to pipe domestic water directly to homes were tried as early as 1864. As the pueblo development and population expanded, an effort was made to develop a residential water system in Los Angeles with projects designed to distribute water by directly piping water into homes from local springs and the river.

After several attempts by the City to develop their own water system, John Luis Sainsevain, who had been integral in development of the system, owned a lease to the domestic supply system and he erected a water wheel at the dam that he had built on the river. To keep up with demand, the City allowed several private companies to be formed in order to provide domestic supplies of water. The City continued to oversee the irrigation system, eventually enclosing several of the *Zanjas* or creating ornamental *Zanjas* in several areas (Gumprecht, 2001).

As Southern California grew, the Los Angeles River became an inadequate supply of water for the residential and industrial development that gradually displaced agricultural uses. With the arrival of the Southern Pacific Railroad, the demand became so great that the Los Angeles City Water Company began tapping the river's water supply before it even reached the surface. Water supply reservoirs began to be used and the *Zanja* system was gradually abandoned and, in some cases, dismantled (Gumprecht, 2001). By 1902, the Los Angeles municipal government took back jurisdiction of its own water needs and purchased the existing water system, which consisted of seven reservoirs and 337 miles of pipe. **Figure 5** (Gumprecht, 2001) depicts the locations of the *Zanjas* in 1880.

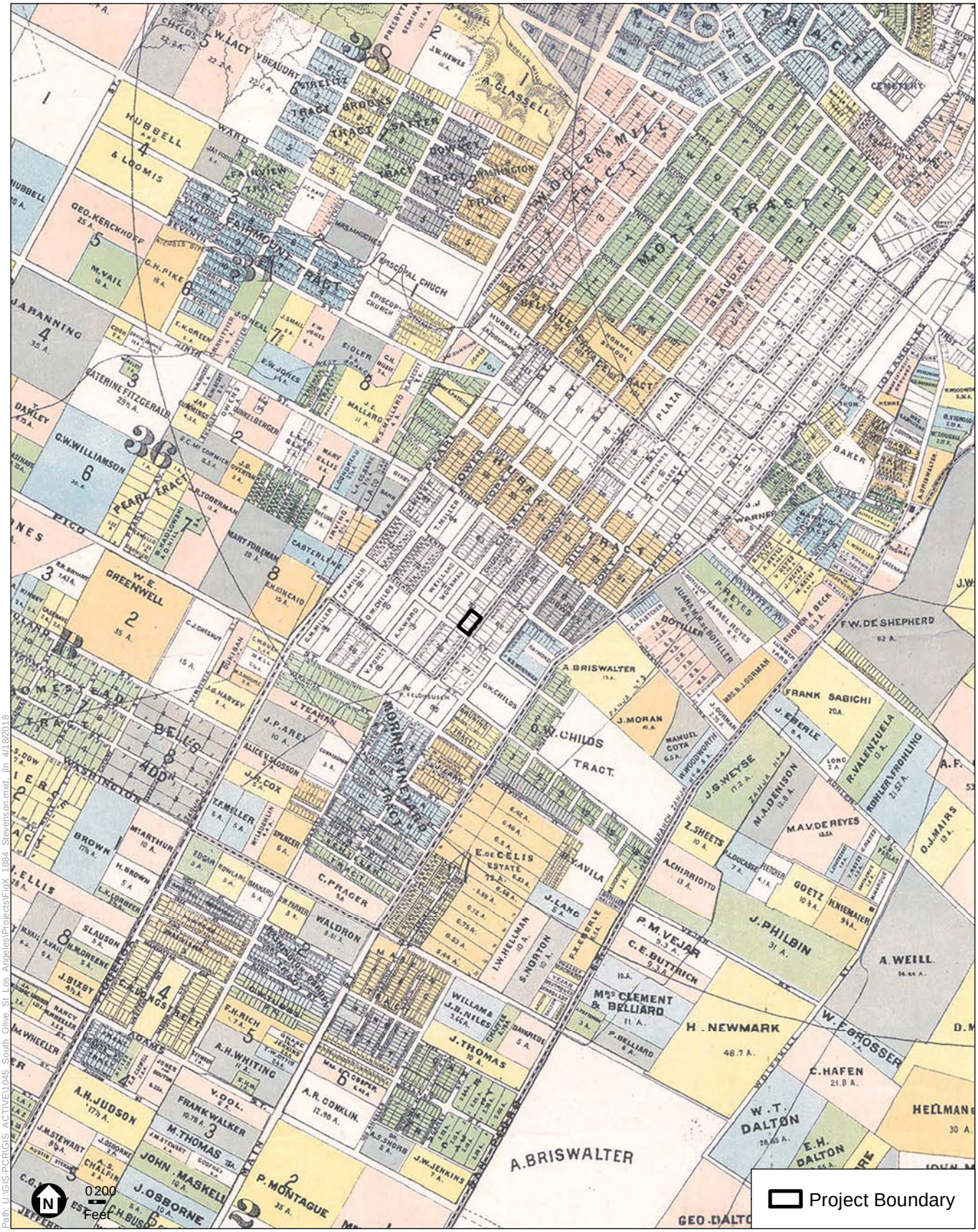


SOURCE: Gumprecht 2001

Figure 5. Los Angeles *Zanja* Conduit System in 1880

As there are no surface indications for the majority of the *Zanja* system, data is reliant on over 100-year old historic maps and records, as well as projects which have encountered it during ground disturbance. The entire *Zanja* system has been mapped and put on file with the SCCIC. However, the map used to create the file may not be the most accurate or best map available for certain areas, so additional research is generally needed to confirm or supplement this information. Site records from the SCCIC indicate that the system has been encountered up to a dozen times throughout the downtown area including several areas within Chinatown and Little Tokyo. The various lines of the *Zanja* system have been represented in the historical record as above ground decorative open trenches, cement pipes, brick conduits, and wrought iron pipes, in various locations. It has been recorded just below the surface of sidewalks and pavement and up to 15-feet in depth below grade. Stevenson (1884) depicts *Zanja* No. 8 in the alley to the west of the Project Site boundary. (**Figure 6)**, however, the level of accuracy of these maps is currently unknown.

In the 1850s, the development of orchards and vineyards located to the south of Seventh Street between Los Angeles and Figueroa Streets created a need for additional irrigation. This need was met with the construction of a new branch off the *Zanja Madre*, which was eventually referred to as *Zanja* No. 8 (Layne 1957: 21). Layne (1957:21) describes the alignment near the Project Site as the following, "It [*Zanja* No. 8] was diverted [from the *Zanja Madre*] south of Requena Street…it cut across to the southeast corner of Fifth and Olive Streets, from there it entered Pershing Square and ran along Olive Street, across Sixth, and on south to Sixteenth and Main Streets, irrigating the orchards of...O.W. Childs". By 1888, *Zanja* No. 8 was a 16-inch cement pipe extending from the end of the *Zanja Madre*, and was 8300-feet in length, and at that time joined *Zanja* No. 8-R at its southern terminus (Hall 1888). **Figures 7 and 8** depict *Zanja* No. 8 which is noted as a "ditch" on land records of the Project Site and vicinity (Hansen 1892). This information supplements the former location of *Zanja* No. 8 as shown on Stevenson (1884) as being situated west of the Property Site boundary within what appears to now be the midblock alley.]

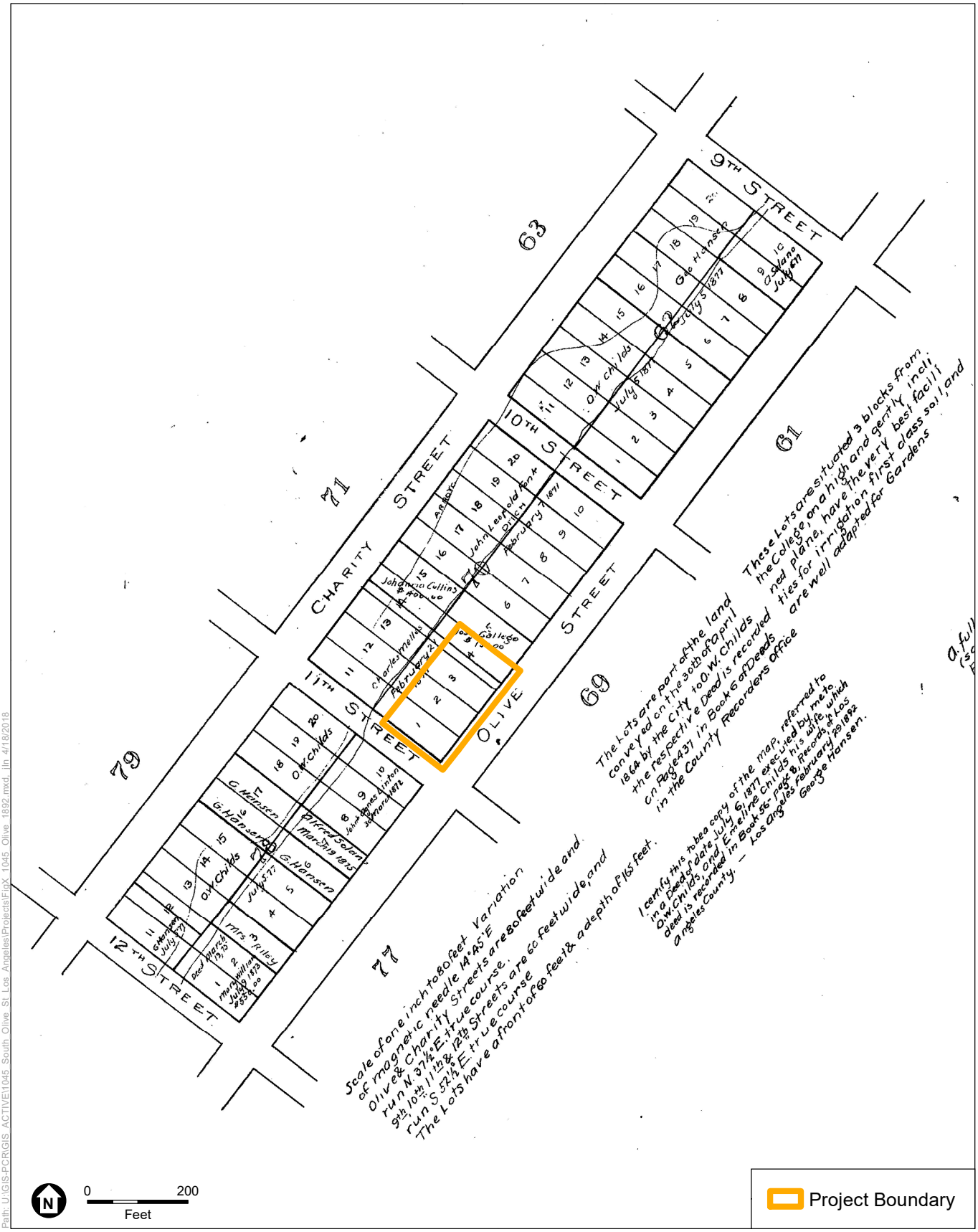


SOURCE: Hall, 1888

1045 Olive Project

Figure 6
Stevenson 1884

ESA

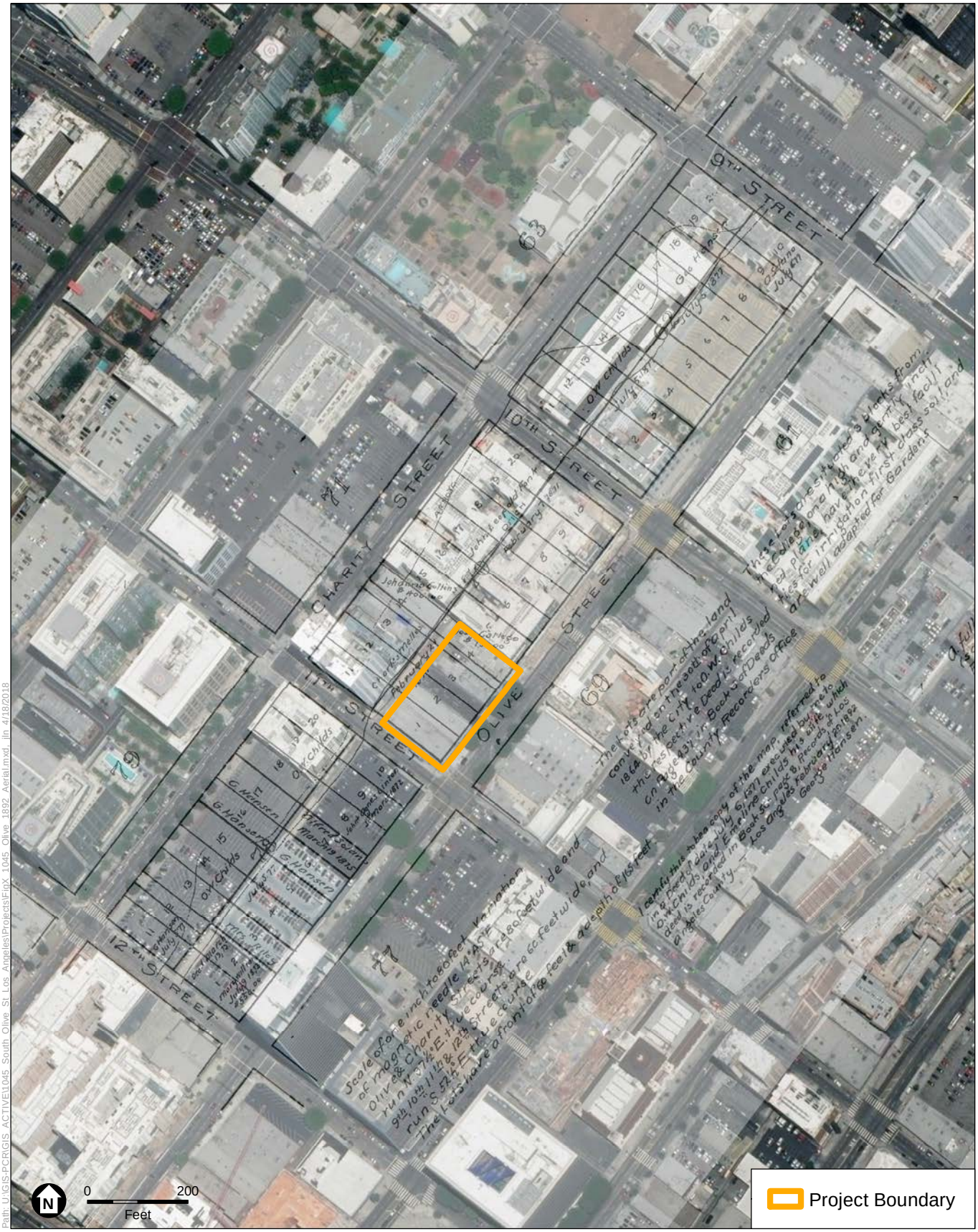


SOURCE: J.A. Kelly, 1892.

1045 Olive Project

Figure 7
1892 Land Record Depicting the *Zanja* (Ditch) and Project Site and Vicinity

ESA



Path: U:\GIS-PCR\GIS_ACTIVE\1045_South_Olive_St_Los_Angeles\Projects\Fig\X_1045_Olive_1892_Aerial.mxd_ iln 4/18/2018

SOURCE: J.A. Kelly, 1892.

1045 Olive Project

Figure 8
1892 Land Record Depicting the *Zanja* (Ditch) and Project Site and Vicinity on an Aerial

ESA

Commercial Development in Los Angeles, 1850-1980

Commercial Development and the Automobile, 1910-1970

The following themes were developed following SurveyLA Eligibility Standards to provide a context for evaluation of the existing buildings on the Project Site and their potential to qualify as historical resources: Commercial Development and the Automobile (1910-1980); subtheme: The Car and Car Services, (1910-1960), and property subtypes Car Repair and Car Showroom. The SurveyLA Eligibility Standards are introduced in the following Regulatory Framework section.

The emergence of the automobile in the 1910s shaped the layout of the City shifting development patterns from an agricultural landscape with pockets of development to a sprawling metropolis. Automobile registration in Los Angeles County was less than 20,000 in 1910. However, by 1920, car registrations exceeded 100,000 due to the development of an affordable car, specifically the Ford Model T (Prosser and Herrick, 2016: 5). With Los Angeles' new transportation infrastructure, the proliferation of automobiles in the early part of the 20th Century spawned commercial improvements to the south and west of the central business district in downtown Los Angeles. As early as the 1910s, the Project Site and surrounding vicinity were being advertised as "auto row" (Architectural Resources Group, 2016: 22). Commercial growth along Figueroa during the 1920s exemplified the development patterns associated with automobiles. Multi-story auto parks were built to serve the central business district as early as the 1920s **(Figure 9).**



SOURCE: California State Library

Figure 9. Felix Chevrolet Showroom on the corner of Grand and 12th Streets, ca. 1930.

The construction of the present buildings on the Project Site in the 1910s, catered to automobile uses. Building A (1057 South Olive Street), Building B (1053-55 South Olive Street), Building C (1047-49 South Olive Street, and Building D (1045-33 South Olive Street), were utilized as automobile dealerships, repair shops, and garages (see **Figure 3**). The first businesses located at the Project Site were in Buildings A and B, where Simplex and Mercer automobile dealers operated, followed by the Mercer and Jordon pacific Coast Agency a few years later in 1916 (Los Angeles Times, 1916). The automobile dealership and repair shop located on the Project Site was a new property type that emerged in the 1910s. By the 1921, Buildings A and B became Felix Chevrolet's used car lot and repair center. Felix Chevrolet's main new car showroom was located approximately one block away from the Project Site fronting Grand and 12th Streets.

After the completion of the North Broadway Bridge, North Broadway was one of the principal routes to downtown and was frequently congested with traffic near the bridge (Masters, 2013). The construction of the four Figueroa Street tunnels through Elysian Park between 1930 and 1936 alleviated the traffic along North Broadway and improved the connectivity between Los Angeles and Pasadena, bringing more traffic into downtown. Tunnel one, constructed between 1935 and 1936 and located to the north of the Project Site between Bishops Road and Solano Avenue, was the largest of the four tunnels constructed. With the opening of the Arroyo Seco Parkway in 1940, traffic at the tunnels again became a problem. To ease traffic congestion, a new open-cut roadway carrying four lanes of southbound traffic through Elysian Park was built, and northbound lanes were routed through the tunnels. This work was completed in 1947. The construction of the four Figueroa tunnels and later the opening of the Arroyo Seco Parkway no

doubt impacted the traffic flow to downtown, including the expansion of the automobile-related commerce in the Postwar period.

After the Postwar period, the character of the neighborhood surrounding the Project Site began shifting from primarily auto sales and repair shop uses to commercial businesses and manufacturing, including machine shops, clothing manufacturing, and a movie and film supply store. This shift is primarily attributed to the movement of people from the City into the suburbs. In 1958, Felix Chevrolet relocated their headquarters to their current location at 3330 South Figueroa Street, which is topped by a trademark Felix the Cat figure.

Car Showroom (1920-1970) Property Type

Just before the First World War, the City experienced an increase of purpose-built automobile dealerships. These early automobile dealerships were essentially storefronts located on a commercial street with a large entrance door and windows to display the product (Posser and Herrick, 2016: 35-41). As the popularity of the automobile increased in the 1920s, automobile dealerships retained their locations in the central business districts along busy commercial streets adjacent to streetcar lines in the City of Los Angeles. These dealerships often exhibited historicist styles and began combining auto servicing and repair with sales such as the original Willys-Overland Company showroom at 1050 South Hope Street (**Figure 10**). During the 1920s, there were two primary types of automobile dealerships. The first type included multi-storied buildings with façade detailing complete with ramps and auto-sized elevators for access to the upper stories. In Downtown Los Angeles, several automobile manufacturers erected large, new showrooms and repair facilities surrounding the business district, advertised in local newspapers as "auto row" to describe the cluster of showrooms and associated businesses in the area on South Hope Street and at Figueroa Street and Pico Boulevard (**Figure 11**).[1]

[1] The terms "auto row" and "automobile row" first appear in *Los Angeles Times* articles from the early 1910s.



SOURCE: SurveyLA, 2016.

Figure 10. 1050 South Hope Street was the showroom for the Willys-Overland Company in 1916.



SOURCE: LAPL

Figure 11. Auto Row at Figueroa and Pico, c. 1920s.

The second type were smaller dealerships that tended to be located in outlying business districts that would often also include repair shops. These more suburban showrooms in local business districts continued the same style of a retail storefront building located on public streets articulated in Period Revival styles. The primary elevation often consisted of an elaborate center entrance and symmetrically flanking show windows. These smaller showrooms were, in essence, single-story versions of the multi- story central business district dealerships. Two excellent Spanish Colonial Revival style examples of this type constructed during the 1920s are the showroom located at1925 North Wilcox Avenue in Hollywood (**Figure 12**), constructed in 1925, and the Chevrolet Company dealership at 1003 W Washington Boulevard (**Figure 13**), constructed in 1927.[2]



SOURCE: Google

Figure 12. Former Spanish Colonial Style Dealership at 925 Wilcox Avenue, Hollywood



SOURCE: Google

Figure 13. Former Spanish Colonial Style Dunn Chevrolet Company Dealership at 1003 W Washington Boulevard, Los Angeles

By the mid-1930s, the auto showroom adopted the Streamline Moderne style in an attempt to attract customers during the Depression. Some of the older downtown showrooms replaced their historicist

[2]Los Angeles County Assessor and HistoricPlaceLA.org. 1003 W Washington Boulevard was assigned CHR status codes of 3S, 3CS and 5S3 during SurveyLA's survey of the Palms, Mar Vista and Del Rey CPA.

facades with sleek Streamline Moderne versions. More importantly, during this period the location of dealerships changed. The majority of potential customers already owned cars, so there was no need to be close to streetcar lines. Instead, ease of automobile access and adequate parking became a necessity (Liebs, 1985: 86-88). Instead of being sited on a small lot in the central or local business district, the 1930s dealership owners sought locations on arterial roads that allowed dealerships to spread horizontally. The common arrangement was a showroom in the front, complete with large expanses of glass, service bays to the rear, and adequate parking alongside for used cars and customer circulation. The showroom itself, with its expanses of glass, maintained its position directly on the street, without a setback (**Figure 14**). The exterior exhibited the Streamline Moderne style and featured the name and emblem of the brand sold within (Liebs, 1985: 86-88).



SOURCE: SurveyLA,.2016

Figure 14. British European Auto Showroom, San Pedro built in 1938

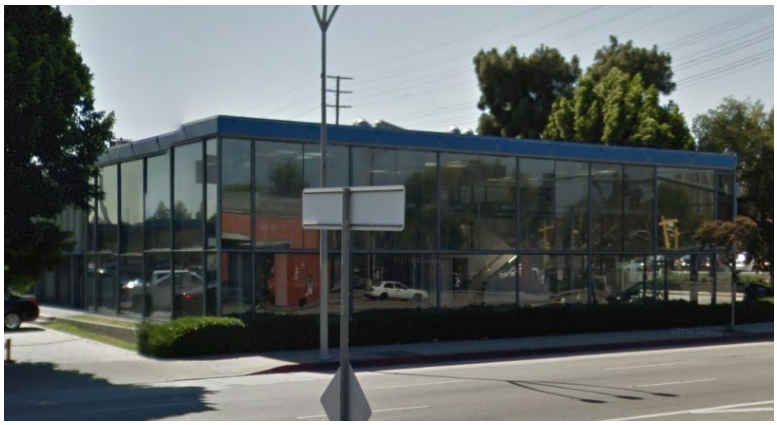
In the Postwar era there were a number of stylistic variations of the automobile dealership, including the Mid-Century, Googie and New Formalist styles. Dealerships constructed during the late1940s and early 1950s were typically subdued Mid-Century Modern designs, with flat roofs and plain surfaces with large glass windows. The Casa de Cadillac at 14401 Ventura Boulevard in Sherman Oaks (**Figure 15**), constructed in 1949, is an excellent example from the early Postwar era and the Pollard Ravenscroft Chevrolet Dealership at 6001 Van Nuys Boulevard in Van Nuys (**Figure 16**), constructed in 1964, is an example of a later Mid-Century style dealership.[3]

[3] Los Angeles County Assessor and HistoricPlaceLA.org. 14401 Ventura Boulevard was assigned CHR status codes of 3S, 3CS and 5S3 during SurveyLA's survey of the Sherman Oak, Studio City, Toluca Lake, and Cahuenga Pass CPA.



SOURCE: Google

Figure 15. The Casa de Cadillac at 14401 Ventura Boulevard in Sherman Oaks



SOURCE: Google

Figure 16. Pollard Ravenscroft Chevrolet Dealership at 6001 Van Nuys Boulevard, Van Nuys

While rare, the Googie style could occasionally be seen in an exaggerated roof line or a canopy extended over the service. Lastly, New Formalism, with its classicizing proportions and details, began to appear in the late 1950s and early 1960s. One of the most significant design and advertising innovations during this period was the separation of the sign from the structure. The dealership's primary identifying sign was detached from the building to become a free-standing, visually dominant sign.

After the mid-1960s the design and placement of auto showrooms underwent a major change in response to both growing conservatism and the changing nature of the automobile industry. The showrooms retreated from the road, behind a large parking lot where rows and rows of cars were displayed, and the showroom structure itself became less visible. This new method of selling required great amounts of space, as a result the existing dealerships were not large enough and dealerships moved to the outskirts of development where large lots were located. This was accompanied by a massive reduction in the number of dealerships as American-made brands disappeared and those few remaining consolidated facilities. The showroom and the service bay took on a utilitarian form and

only the dealer sign, free standing and standardized for the brand, attracted attention (Liebs, 1985: 90-93).

Several excellent examples of showrooms and repair facilities remain within the Central City Survey area including Willys-Knight Building (1919, 425 W. Eleventh Street); Felix Chevrolet (1931, 1201 S. Grand Ave.); W.P. Herbert Company Showroom (1920, 1100 S. Flower Street); 1360 S. Flower Street (1912, auto showroom); Davidson House and Meyer Showroom (1919, 1225 S. Grand Avenue); and Chevrolet Motor Company Showroom (1920, 1200 S. Hope Street).

Car Repair, (1910-1960s) Property Type

Prior to the outbreak of World War I, car repair shops were rare, and repairs were made in service stations and car dealerships, livery stables, bicycle vendors, and blacksmiths. During this time the few standalone repair shops were placed in industrial buildings, abandoned buildings or showrooms (Posser and Herrick, 2016: 42). After World War I, auto standalone service stations began to dot the landscape as the automobile became more popular (**Figure 17**).



SOURCE: OHR (SurveyLA, 2016)

Figure 17. Dahila Motors Building (LAHCM No. 692) in Eagle Rock, built in 1931.

During the Great Depression, service stations evolved as automobile parts manufacturers began to open their own service stations and stores, such as Firestone Tire. These buildings had service areas and main showrooms where customers could purchase products and services. However, independent automobile service stations continued to utilize older buildings, such as old car dealerships and other nondescript commercial buildings (Posser and Herrick, 2016: 42-43).

Several excellent examples of showrooms and repair facilities remain within the Central City Survey area include 1136 S Flower St. (1926, auto repair); and Motor Rim and Wheel Service of California (1927, 1136 S Flower Street).

REGULATORY FRAMEWORK

There are laws and regulations at the federal, state, and local levels that address cultural resources. These relevant regulations are described below.

Federal

National Register of Historic Places

The National Register of Historic Places (National Register) was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2) (U.S. Department of the Interior, 2002). The National Register recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the National Register is considered "historic property" under Section 106 of the NHPA.

To be eligible for listing in the National Register, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

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

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 2002). The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the National Register unless they meet one of the Criteria Considerations (A-G), in addition to meeting at least one of the four significance criteria and possessing integrity (U.S. Department of the Interior, 2002).

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at *Public Resources Code (PRC) Section 21000 et seq.* CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of PRC Section 21083, if it meets the criteria of a unique archaeological resource. As defined in PRC Section 21083.2 a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

If an archaeological site meets the criteria for a unique archaeological resource as defined in PRC Section 21083.2, then the site is to be treated in accordance with the provisions of PRC Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (PRC Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required. The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource,

the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5(a). Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines* Section 15064.5(b)(1)). According to *CEQA Guidelines* Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

C. Convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Weeks and Grimer, 1995) is considered to have mitigated its impacts to historical resources to a less-than-significant level (*CEQA Guidelines* Section 15064.5(b)(3)). In effect, CEQA has a "safe harbor" by providing either a categorical exemption or a negative declaration for such a project which meets the Standards (see State *CEQA Guidelines* Section 15331 and 15064.5(b)(3)).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended by Assembly Bill 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and

archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Local

City of Los Angeles

The City enacted a Cultural Heritage Ordinance in April 1962 which defines Historic-Cultural Monuments. According to the Cultural Heritage Ordinance, Historic-Cultural Monuments are sites, buildings, or structures of particular historic or cultural significance to the City in which the broad cultural, political, or social history of the nation, state, or City is reflected or exemplified, including sites and buildings associated with important personages or which embody certain distinguishing architectural characteristics and are associated with a notable architect. These Historic-Cultural Monuments are regulated by the City's Cultural Heritage Commission and the City Council.

Los Angeles Cultural Heritage Ordinance Eligibility Criteria

The Los Angeles City Council adopted the Cultural Heritage Ordinance in 1967 and amended it in 2007 (Los Angeles Administrative Code, Chapter 9, Division 22, Article 1, Section 22.171.7). The Cultural Heritage Ordinance establishes criteria for designating a local historical resource as an Historic Cultural Monument (HCM). An HCM is any site (including significant trees or other plant life located on the site), building or structure of particular historic or cultural significance to the City, including historic structures or sites:

- In which the broad cultural, economic or social history of the nation, State or community is reflected or exemplified; or
- Which is identified with historic personages or with important events in the main currents of national, State or local history; or
- Which embodies the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period, style or method of construction; or
- Which is a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

SurveyLA Eligibility Standards

SurveyLA is a citywide survey that identifies and documents potentially significant historic resources representing important themes in the City's history. The survey and resource evaluations were completed by consultant teams under contract to the City of Los Angeles and under the supervision of the Department of City Planning's Office of Historic Resources (OHR). The program was managed by the OHR, which maintains a website for SurveyLA. The field surveys cumulatively covered broad period of significance, from approximately 1850 to 1980 depending on the location, and included individual resources such as buildings, structures, objects, natural features and cultural landscapes as well as areas and districts (archaeological resources are planned to be included in future survey phases). The survey identified a wide variety potentially significant resources that reflect important themes in the City's growth and development in various areas including architecture, city planning, social history, ethnic heritage, politics, industry, transportation, commerce, entertainment, and others. Field surveys, conducted from 2010-2017, were completed in three phases by Community Plan Area. All tools and methods developed for SurveyLA were created to meet state and federal professional standards for survey work.

Los Angeles' citywide Historic Context Statement (HCS) was designed for use by SurveyLA field surveyors and by all agencies, organizations, and professionals completing historic resources surveys in the City of Los Angeles. The context statement was organized using the Multiple Property Documentation (MPD) format developed by the National Park Service (NPS) for use in nominating properties to the National Register. This format provided a consistent framework for evaluating historic resources. It was adapted for local use to evaluate the eligibility of properties for city, state, and federal designation programs. The HCS used Eligibility Standards to identify the character defining, associative features and integrity aspects a property must retain to be a significant example of a type within a defined theme. Eligibility Standards also indicated the general geographic location, area of significance, applicable criteria, and period of significance associated with that type. These Eligibility Standards are guidelines based on knowledge of known significant examples of property types; properties do not need to meet all of Eligibility Standards in order to be eligible. Moreover, there are many variables to consider in assessing integrity depending on why a resource is significant under the National Register, California Register or City of Los Angeles HCM eligibility criteria.

ARCHIVAL RESEARCH
Methods and Results

Methods

A records search for the Project was conducted on December 7, 2017 at the California Historical Resources Information System South Central Costal Information Center (SCCIC) located at California State University, Fullerton. The records search included a review of previous cultural resources studies and previously-recorded cultural resources including archaeological resources within the Project Site and a 0.5-mile radius, and historic architectural resources within the Project Site and a 0.25-mile radius.

Specific inventories and databases reviewed at the SCCIC include the National Register and its annual updates, the California Register, and the Statewide Historical Resources Inventory (HRI) database maintained by the State Office of Historic Preservation (OHP).

Results

Previous Cultural Resources Investigations

The records search results indicate that 34 cultural resources studies have been conducted within a 0.5-mile radius of the Project Site (**Table 1**) with approximately 44 percent of this area having been subject to previous survey. Of the 34 previous studies, one (LAN-12584) overlaps with a portion of the Project Site and is a consultation letter with the State Historic Preservation Officer (SHPO) to initiate consultation regarding the restoration of historic streetcar service (this study does not include the results of the study or recordation of any resources), and another study entitled, *Extent of Zanja Madre* (LA-13239) which includes maps depicting that a segment of the *Zanja* is located adjacent and to the west of the Project Site. The accompanying map to the record provided includes the entire *Zanja* conduit system in addition to the *Zanja Madre*. The record does not provide a source for the *Zanja* map.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS (SCCIC)

Author	SCCIC# (LA-)	Title	Year
Anonymous	10507	Technical Report - Historical/Architectural Resources - Los Angeles Rail Rapid Transit Project "Metro Rail'' Draft Environmental Impact Statement and Environmental Impact Report	1983
Bonner, Wayne	12045	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02204A (SM204 816 South Grand), 816 South Grand Avenue, #818 Los Angeles, Los Angeles County, California	2012
Bonner, Wayne and Crawford, Kathleen	12172	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA03619A (SC619 Emil Brown Building), 300 East 9th Street, Los Angeles, Los Angeles, County, California	2012
Bonner, Wayne and Crawford, Kathleen	12174	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV110021 (11002 Edward Building) 1200 South Hope Street, Los Angeles, Los Angeles County, California	2012
Bonner, Wayne and Crawford, Kathleen	12177	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV11003K (Telacu Square) 1033 South Hope Street, Los Angeles, Los Angeles County, California	2012
Bonner, Wayne H.	08753	Cultural Resources Records Search Results and Site Visit for T-Mobile Candidate La03101d (1240 Main Street), 1240 South Main Street, Los Angeles, Los Angeles County, California	2006
Bonner, Wayne H.	08760	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate Sv11002h (Cameron), 1349 South Flower Street, Los Angeles, Los Angeles County, California	2006
Bonner, Wayne H.	09539	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11003K (Telacu Plaza), 1033 South Hope Street, Los Angeles, Los Angeles County, California	2008
Bonner, Wayne, Arabesque Said, and Kathleen Crawford	10262	Cultural Resource Records Search and Site Visit Results for Clearwire Candidate CA-LOS5988A / CA5629 (Basement Clothing), 1200 S. Hope St., Los Angeles, Los Angeles County, California.	2010
Bonner, Wayne, Sarah Williams, and Kathleen A. Crawford	09544	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11002I (Edwards Building), 1200 South Hope Street (also known as 430 12th Street), Los Angeles, Los Angeles County, California	2008
Carrico, Richard L.	08026	Treatment Plan for Potential Cultural Resources Within Proposed Metro Rail Subway Station Locations in Metropolitan Los Angeles, California	1985
Chattel, Robert	10127	California Lutheran Hospital (California Hospital Medical Center) Los Angeles, California Historic and Contemporary Photographs	1996
**Cogstone	13239	Extent of Zanja Madre	2017
Duke, Curt	04559	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 625-07, in the County of Los Angeles, California	1999
Duke, Curt	04576	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 574-01, County of Los Angeles, California	1999
Duke, Curt	04577	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 575-01, County of Los Angeles, California	1999
Duke, Curt	04901	Cultural Resource Assessment for AT&T Wireless Services Facility Number, R281.1, County of Los Angeles, California	2000
Duke, Curt	05077	Cultural Resource Assessment for Sprint Pcs Facility La35xc768c (Desmond Building), Located in the County of Los Angeles, Ca	2000
Duke, Curt	06438	Cultural Resource Assessment for AT&T Wireless Services Facility Number, R280.2, County of Los Angeles, California	2000
Duke, Curt and Judith Marvin	06460	Cultural Resource Assessment Cingular Wireless Facility No. Sm204-02, Los Angeles County, California	2002
Greenwood, Roberta S.	00483	Archaeological Resources Survey the Proposed Downtown People Mover Project Corridor Area	1978

Author	SCCIC# (LA-)	Title	Year
Grimes, Teresa	10542	Historical Architectural Survey and Evaluation Report and Finding of no Adverse Effect	1998
Hatoff, Brian	10981	Verizon Cellular Communications Tower Site - AEG Petroleum Building, 714 West Olympic Boulevard, Los Angeles, CA 90015 - Results of Architectural History Survey for Verizon Cellular Communications Tower Site	2010
Hatoff, Brian	10982	Verizon Cellular Communications Tower Site - ABM Industries IBR, 1150 South Olive Street, Los Angeles, CA 90015	2010
Kaplan, David and O'Connor, Pam	11649	Evaluation of Proposed Demolition of Stationers Building, 525 South Spring Street, Stationers Annex, 523 South Spring Street on the Spring Street Financial Historic District	2004
Lapin, Philippe	05080	Cultural Resource Assessment for Modifications to Pacific Bell Wireless Facility La 574-01, County of Los Angeles, Ca	2000
Leaver, Ryan C.	09154	Direct APE Historic Architectural Assessment for T-Mobile Candidate SV11002F (Pico/Flower), 1315 South Flower Street, Los Angeles, Los Angeles County, California	2007
McKenna, Jeanette A.	08013	Cultural Resources Investigations for the Proposed City House Los Angeles (LLC), and the Olympic on Grand (LLC) Properties in the City of Los Angeles, Los Angeles County, California	2006
Milosfsky, Michali	06394	California Theater, Historic Structures Report	1990
Robinson, Mark	10860	Exposition Corridor Light Rail Transit Project Construction Phase Cultural Resources Monitoring and Treatment Plan	2007
Robinson, Mark C.	10816	Archaeological Survey Report for the YWCA Job Corps Urban Campus Project 1016-1038 Olive Avenue, Los Angeles, California	2006
*Rogers, Leslie	12584	Restoration of Historic Streetcar Service in Downtown Los Angeles	2013
Stickel, Gary E.	04830	Cultural Resources Investigation Report of One Locus (sc-12) in the Sunshine Canyon Landfill Extension Project Area JMA Project # Bfi-94-164	1997
Unknown	09331	Photo Documentation 1016 and 1026 Eighth Place Los Angeles, California	1999

* Study within the Project Site.
** Study Adjacent the Project Site

Previously Recorded Cultural Resources

The SCCIC records search results indicate no archaeological resources have been previously recorded within the Project Site or within the 0.5-mile records search radius. Although no historic architectural resources have been previously recorded within the Project Site itself, a total of 10 historic architectural resources have been previously recorded within the 0.25-mile records search buffer (**Table 2).** Of the 10 historic architectural resources all are buildings; six (P-19-166999, -167316, -173175, -173178, -173179, and -187003) of which are have been recommended eligible for listing in the National Register of Historic Places (National Register), one (P-19-187866) has been demolished, and three (P-19-188478, -188904, and 189239) have been recommended or determined as ineligible for the National Register.

TABLE 2
PREVIOUSLY RECORDED HISTORIC ARCHITECTURAL RESOURCES (SCCIC)
WITHIN 0.25- MILE RADIUS OF THE PROJECT SITE

P-Number (P-19-)	Other Designation	Description	Date Recorded	Eligibility
166999	Herald Examiner Building	Herald Examiner Newspaper Bldg.	1991	Eligible- OHP Property Number – 020932/ NR and LAHCM (1S; 5S1)
167316	Federal Reserve Bank of San Francisco, Los Angeles Branch	Federal Reserve Bank of San Francisco, Los Angeles Branch	1984	Eligible- OHP Property Number - 021282/ NR listed (1S; 5S1)
173175	Blackstone's Department Store, Famous Department Store, US Post Office Metropolitan Station	Blackstone Bldg.	1983, 1998	Eligible- OHP Property Number – 027243/ LAHCM (5S1)
173178	Los Angeles Railway Corp. Building,	Los Angeles Transit Bldg.	1983	Eligible- OHP Property Number 027246/ NR eligible (3S)
173179	Commercial Club; Hotel Case	Job Corps Center YWCA	1983	Eligible- OHP Property Number - 027247/ NR eligible (3S)
187003	South Park Lofts	816 S Grand Ave Bldg.	1998, 2004	Eligible- OHP Property Number - 119052/ NR and LAHCM (1S; 5S1)
187866	Grand Avenue Club	Dance Hall	2006	NR eligible (3S) (demolished)
188478	Commercial and residential Bldg.	Edwards Bldg	2008	6Y (may be eligible for the CR or at the Local level)
188904	YWCA Job Corps Urban Campus (1016-1038 S Olive Street)	YWCA Job Corps Urban Campus	2006	6Y (may be eligible for the CR or at the Local level)
189239	Occidental Life Insurance Tower;	ABM Industries Bldg.	2010	6Y (may be eligible for the CR or at the Local level)

LAHCM and SurveyLA

Methods

Additional archival research included the review of LAHCM designations and SurveyLA within a 0.25-mile of the Project Site. For the purpose of analyzing potential indirect impacts, previously identified historical resources within 0.25-miles of the Project Site were located to determine if any of them are in the immediate vicinity of the Project Site, and are in close enough proximity that the Project would have the potential to result in indirect impacts that could affect the eligibility of such resources for listing.

Results

As a result of the LAHCM and SurveyLA review, a total of twenty-five individual resources were identified, along with one National Register-listed historic district (Broadway Theatre and Commercial District), and one potential local historic district (California Mart District). The identified resources are compiled in **Table 3**. The districts are described briefly below.

Broadway Theater and Commercial District

The Broadway Theater and Commercial District is a National Register listed district that includes five contributors located within the 0.25- quarter-mile of the Project Site, three of which are also individually eligible (these are included in the 25 resources), and two of which have been determined to be contributors to the National Register district. These five district contributors are included under the subsection "Historic Districts."

California Mart District

SuveyLA identifies the California Mart District as a potential historic district potentially eligible for listing in the National Register, California Register, and LAHCM criteria for associations with Mid-Century Modern design and the Los Angeles garment industry. The potential district is a wholesale commercial complex bounded by Main Street, 9th Street, Los Angeles Street, and Olympic Boulevard in the Fashion District area of downtown Los Angeles. The California Mart District, now known as the California Market Center, was designed by noted architects Victor Gruen and Associates and is associated with the garment and textile industry. The complex is composed of four Corporate International-style commercial buildings constructed between 1963 and 1979 and a small modestly landscaped plaza that features a freestanding sculpture "The Hammering Man" (1988, Jonathan Barofsky).

Due to the density of the intervening development in this urban area, the Project would have no potential indirect impact on any of the other identified historical resources in the 0.25-mile buffer beyond the immediate vicinity of the Project Site bounded by Grand to the northwest, West Olympic Boulevard to the northeast, South Hill Street to the southeast, and West 12th Street to the southwest. Six of the historical resources identified in the archival records search and listed below are located within the immediate vicinity of the Project Site, these include: Federal Reserve Bank of San Francisco, Los Angeles Branch (P-19-167316); AT & T Tower (P-19-189239); Mayan Theatre; Belasco Theater; Joseph Basch Company Building; and the White Log Coffee Shop.

TABLE 3
PREVIOUSLY IDENTIFIED HISTORICAL RESOURCES (LAHCM, SURVEYLA, CITY OF LA HRI)
WITHIN 0.25- MILE RADIUS OF THE PROJECT SITE

Individual Historical Resources

Name and Address	Description	CHR Status Code	Date Recorded	Distance from Project Site
*Federal Reserve Bank of San Francisco, Los Angeles Branch (P-19-167316). 409 W. Olympic Boulevard	Federal Reserve Bank of San Francisco; 1929; Classical Moderne style; Parkinson & Parkinson, architects; 5 stories	Eligible- OHP Property Number – 021282 NRHP: 84000843 1S	1984	0.11 mi
Los Angeles Railway Corp. Building, (P-19-173178). 1060 South Broadway	Los Angeles Railway headquarter; 1922; Beaux Art style; 10 stories	Eligible- OHP Property Number 027246 3S;3CS;5S3 Central City (SurveyLA) C/3/3	1983/2016	0.16 mi
Commercial Club (P-19-173179). 1100-1106 South Broadway	Commercial Club of Los Angeles; 1925-1926; Italian Romanesque Revival style; Curlett and Beelman, architects; 13 stories.	Eligible- OHP Property Number – 027247 3S;3CS;5S3	1983	0.16
*AT & T Tower (P-19-189239) 1150 S Olive Street	Occidental Life Insurance Tower; 1965; International Modern style; William Pereira & Associates; 32 stories (453 ft)	6Z (NRHP) (Not evaluated at the local or state level)	2010	0.12 mi
Petroleum Building 714 W. Olympic Boulevard	Petroleum Building; 1925; Renaissance Revival style; Myer & Holler, architects; 11 stories	LAHCM No. 596 5S1; 2S2	1994/2014	0.23 mi
*Mayan Theatre 1038 S. Hill St	Mayan Theatre; 1927 Mayan Revival style; Octavius Weller Morgan, architect; Period of Significance 1927-1942 (WPA Project)	LAHCM No. 460 5S1	2014	0.12 mi
*Belasco Theatre 1046 S. Hill Street	Belasco Theater; 1926; Mediterranean; Revival style; Morgan, Walls, and Clements, architects; (WPA Projects)	LAHCM No. 476 5S1	2014	0.14 mmi
May Company Garage 900 S. Hill St.	May Company Garage; 1927; Beaux Arts style; Curlett & Beelman, architects, 4 stories	LAHCM No. 1001 5S1	2014	0.22 mi.
Coast Federal Savings Buildings 855 South Hill St	Pacific National Bank; 1929; Art Deco style; Claud Beelman, architect; 12 stories	LAHCM No. 346 5S1	1988	0.21 miles

W.P. Herbert Company Showroom 1100 South Flower St	W.P. Herbert Company (Auto) Showroom; 1920; Beaux Arts Classicism; 1 story	3CS; 5S3 Central City (SurveyLA) A/1/1; C/3/3;	2016	0.19 mi
Chevrolet Motor Company Showroom 1200 S Hope St	Chevrolet Motor Company Showroom; 1920; Vernacular Beaux Arts; Dodd and Richards, architects; 4 stories	3CS; 5S3 Central City (SurveyLA) A/1/1; C/3/3;	2016	0.20 mi
1225 S. Hope	Commercial building; 1938; PWA Moderne style; 2 stories	3S;3CS; 5S3 Central City (SurveyLA) C/3/3	2016	0.24 mi
Felix Chevrolet 1201 S Grand Ave	Felix Chevrolet auto showroom; 1931; International and Art Deco styles; William Richards, architect	3CS; 5S3 Central City (SurveyLA) A/1/1; C/3/3	2016	0.20 mi
Insurance Exchange Building 318 W 9th St	Insurance Exchange Building; 1925; Beaux Arts Classicism and Renaissance Revival styles; Curlett and Beelman	3S;3CS; 5S3; Central City (SurveyLA) A/1/1; C/3/3	2016	0.20 mi
Iris Apartments 1220 S Olive St.	Iris Apartments; 1907; Vernacular and Neoclassical styles; Rare example of an early 20th century apartment house in Downtown	3CS;5S3 Central City (SurveyLA) A/1/1	2016	0.22 mi
*Joseph Basch Company Building 1031 S Hill St.	Joseph Basch Company Building; 1920; Gothic Revival; Commercial property associate with Los Angeles' entertainment industry	3CS;5S3 Central City (SurveyLA) A/1/1	2016	0.08 mi (448 ft.)
*White Log Coffee Shop 1061 S Hill St.	White Log Coffee Shop; 1933; Programmatic/Mimetic style; Norstrom and Anderson, architects; rare example of Mimetic commercial architecture in downtown.	3CS;5S3 Central City (SurveyLA) A/1/1; C/3/3	2016	0.09 mi (500 ft.)
Western Pacific Building 1031 S Broadway	Western Pacific Building; 1925; Renaissance Revival style; Walker and Eisen, architects	3S;3CS;5S3 Central City (SurveyLA) A/1/1; C/3/3	2016	0.15 mi
Harris Building 110 W. 11th St	Harris Building Garment Factory; 1923; Beaux Arts Classicism style; Henry Harwood Hewitt, architect; Constructed for the Union Manufacturing Company	3S;3CS;5S3 Central City (SurveyLA) A/1/1; C/3/3	2016	0.18 mi
Willys Knight Building 425 W 11th St	Willys-Overland Company Automobile Showroom; 1916; Commercial, Vernacular and Beaux Arts Classicism style; Morgan, Walls and Morgan, architects; 1910s showroom	3S;3CS;5S3 Central City (SurveyLA) A/1/1; C/3/3	2016	0.11 mi
Air Raid Siren No. 11 Broadway and Olympic Blvd, southwest corner	Air Raid Siren; 1940; wire spool type, freestanding pole associated with military infrastructure	3S;3CS;5S3 Central City Historic Non-parcel resources (SurveyLA) A/1/1; C/3/3	2016	0.19 mi

Historic Districts				
Name and Address	**Description**	**CHR Status Code**	**Date Recorded**	**Distance from Project Site**
California Mart Center Potential District Bounded by Main St, 9th St, Los Angeles St, and Olympic Blvd	California Mart Center Potential District; 1963; Mid-Century Modern commercial architecture; Victor Gruen and Associates, architects; Associated with the garment and textile industry	3S;3CS;5S3 Central City Historic Districts (SurveyLA) A/1/1; C/3/3	2016	0.24 mi
Broadway Theatre and Commercial District Boundary Increase		NRHP: 02000330	2002	0.17 mi
Eastern Columbia Lofts (Contributor) 849 S. Broadway	Eastern Columbia Building; 1930; Art Deco style; Claud Beelman, architect; highrise office and residential building	*Contributor to the Broadway Theater and Commercial District* LAHCM No. 294 5S1; 1D	1985/2014	0.25 mi
Blackstone Building (Contributor) 901 S Broadway	Blackstone's Department Store, Famous Department Store, US Post Office Metropolitan Station; 1917; Beaux Arts style; John P. Parkinson, architect; 6 stories	*Contributor to the Broadway Theater and Commercial District* LAHCM No. 765 5S1; 1D	2002/2003	0.25 mi
908-910 S. Broadway (Contributor)	LL Burns Western Costume Building; Seven-story commercial building; 1914; Gothic Revival style	*Contributor to the Broadway Theater and Commercial District* 1D	2002	0.24 mi
Western Costume Building (Contributor) 939-947 S. Broadway	Western Costume Building; 1924-1925; Art Deco and Gothic Revival style; Kenneth Mac Donald Jr., architect.	*Contributor to the Broadway Theater and Commercial District* 1D	2002	0.18
Ace Hotel (Contributor) 939 S. Broadway	United Artist Theatre/Texaco Building; 1927; Late Gothic Revival style;	*Contributor to the Broadway Theater and Commercial District* LAHCM No. 523 5S1; 1D	1991/2002	0.20

*Immediate vicinity of the Project Site

Additional Research

Site-specific research was conducted utilizing building permits, Sanborn Fire Insurance maps, City directories, historical photographs, California Index, Avery Index, Online Archive of California, Calisphere, California State Archives, California State Library, USCB Frame Finder (aerial imagery), historic newspapers, and other published sources. Research was conducted at the Los Angeles Public Library, City of Los Angeles Department of Building and Safety, and Los Angeles County Assessor.

Historic Map and Aerial Photo Research

Historic maps and aerial photographs were reviewed to understand the previous uses of the Project Site and changes to the current improvements over time. Sanborn map coverage spans 1888 to 1970, and historic aerial coverage begins in 1928. In sum, historic map and aerial review indicates that the Project Site was developed and used for residential purposes in the late 19th Century and early part of the 20th Century. Beginning in the early-20th Century the residential dwellings located within the Project Site were demolished. The first aerial photograph from 1928 shows four commercial buildings on the Project Site including A, B, C, and a portion of the current footprint of Building D. The 1938 photograph reveals that one additional building had been added to the Project Site, for a total of four buildings present (A, B, C, and the full footprint of the current building D). The 1947 aerial image indicates that Building E had been built by that point. No additional buildings were added to Project Site by the time the 1967 aerial image had been captured. Historically, development of a similar type and scale as that at the Project Site has shown in nearby similar projects, that the building process did not typically involve mass excavation and involved minimal ground disturbance or fill which could cap subsurface archaeological resources. The commercial buildings that are currently present within the Project Site do not contain basements based on the survey and historic Sanborn maps, and building permits. It is possible that the construction of these buildings would not have destroyed any subsurface remnants such as building foundations, privies, and refuse deposits associated with the residential dwellings that were constructed on the Project Site in the late 19th century, prior to the current development on-site.

Kirkman-Harriman Pictorial and Historical Map

The *Kirkman-Harriman Pictorial and Historical Map of Los Angeles County* (1938), was reviewed as part of the background research for this Report (**Figure 18**). The map depicts that the Project Site appears to be located near the crossroads of an unmarked road that heads south west from downtown Los Angeles toward Playa Del Rey, curving to the north to intersect with Colorado Street in Santa Monica and a second road which is labeled as the "La Brea Road". La Brea Road is depicted as heading to the west from downtown Los Angeles, and passing the La Brea Tar Pits before heading west and eventually turning the north in Santa Monica up toward Topanga and Malibu.

ESA georeferenced the map (Kirkman, 1938) to the 2018 LA County boundary based off of three control points located at southwest corner near Malibu, California, northwest corner near Gorman, California, and northeast corner near Kramer Junction, California. It was taken into

account that the Los Angeles County boundary has changed somewhat from the 1938 boundary. At this referenced scale**,** the map shows the Project Site at the intersection of an unnamed road heading west and then south to the coast and the map's depiction of the "La Brea Road." However, according to the scale, the 1938 map the unnamed road, would have had a width of approximately 600 feet. The scale of the road does not appear to represent the road's width accurately as it was likely much narrower. Due to the issues with the scale of the roads as depicted, it is difficult to determine whether 1045 Olive Project would actually fall within or in the general vicinity of either the unnamed road, or La Brea Road. La Brea Road appears to be in the location of present-day Wilshire Boulevard which leads from downtown Los Angeles and passes adjacent the La Brea Tar Pits. Wilshire Boulevard is on average approximately 100-feet wide in both downtown Los Angeles and at the La Brea Tar Pits. The estimated accuracy of the map placement is ±500-2500-feet.

Figure 18 ***Kirkman-Harriman Pictorial and Historical Map of Los Angeles County*** **(1938)**

Sanborn Fire Insurance Maps

1888

Review of the 1888 Sanborn map (**Figure 19**) revealed that three of the five parcels that comprise the Project Site were developed by 1888 as residential dwellings. A water pipeline runs through the northwest portion of the site from West Eleventh Street and terminates at West Tenth Street. Along the northwest boundary of the Project Site there was a stable and building that laid adjacent to the Project Site boundaries.

1894

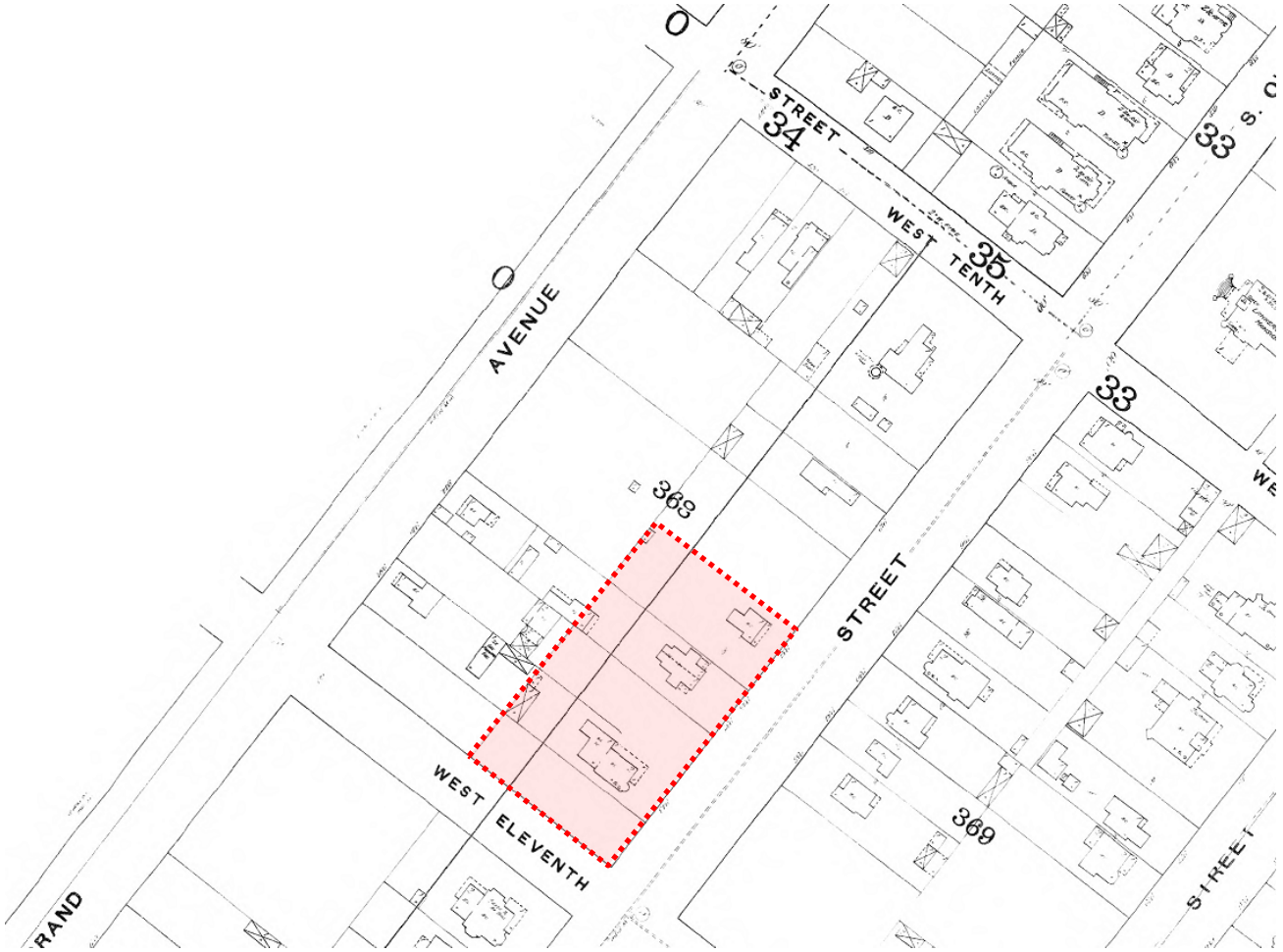
Review of the 1894 Sanborn map revealed that all five parcels have developments directly inside the Project boundaries. All five of these buildings were being used as dwellings. The three pre-existing buildings had some expansion and building division changes. Along the northwest boundary of the Project Site there are two buildings that partially overlap into the Project Site and one new building that is directly adjacent to the northwest boundary. Along the northeast boundary wall is the continuation of a building that lies partially within the Project Site boundaries.

1906

Review of the 1906 Sanborn map (**Figure 20**) revealed that all five parcels have residential developments within the Project boundaries. The building along the northeast boundary wall, in the 1033-1038 Olive Street parcel, is gone and a larger building with two flats now lies within the Project boundaries. The 1043 Olive Street residential buildings have been modified. An additional residential building has been added to the north half of the 1048 Olive Street building. A new residential building is now present on the 1057 Olive Street parcel. Along the northwest boundary one of the residential buildings has two additions that lie just outside of the Project Site.

1950

Review of the 1950 Sanborn map (**Figure 21**) revealed all five parcels to be heavily developed and filled with mixed use commercial buildings. The 1053-1057 Olive Street parcel housed a building that was used for movie and photo supplies. The building itself had a wood truss roof and six wire glass sky lights. Parcel 1047-1049 Olive Street encompassed a messenger service building with three wire glass sky lights. The building had a wood truss roof and concrete floors. Parcel 1040-1043 Olive Street was a photo engraving building that did not have sprinklers. The back area of the building was partitioned off into two separate building areas used for storage. The larger storage area had automatic sprinklers. The 1039 Olive Street parcel had a building used as a small machine shop with an explosion vent outback that contained automatic sprinklers.



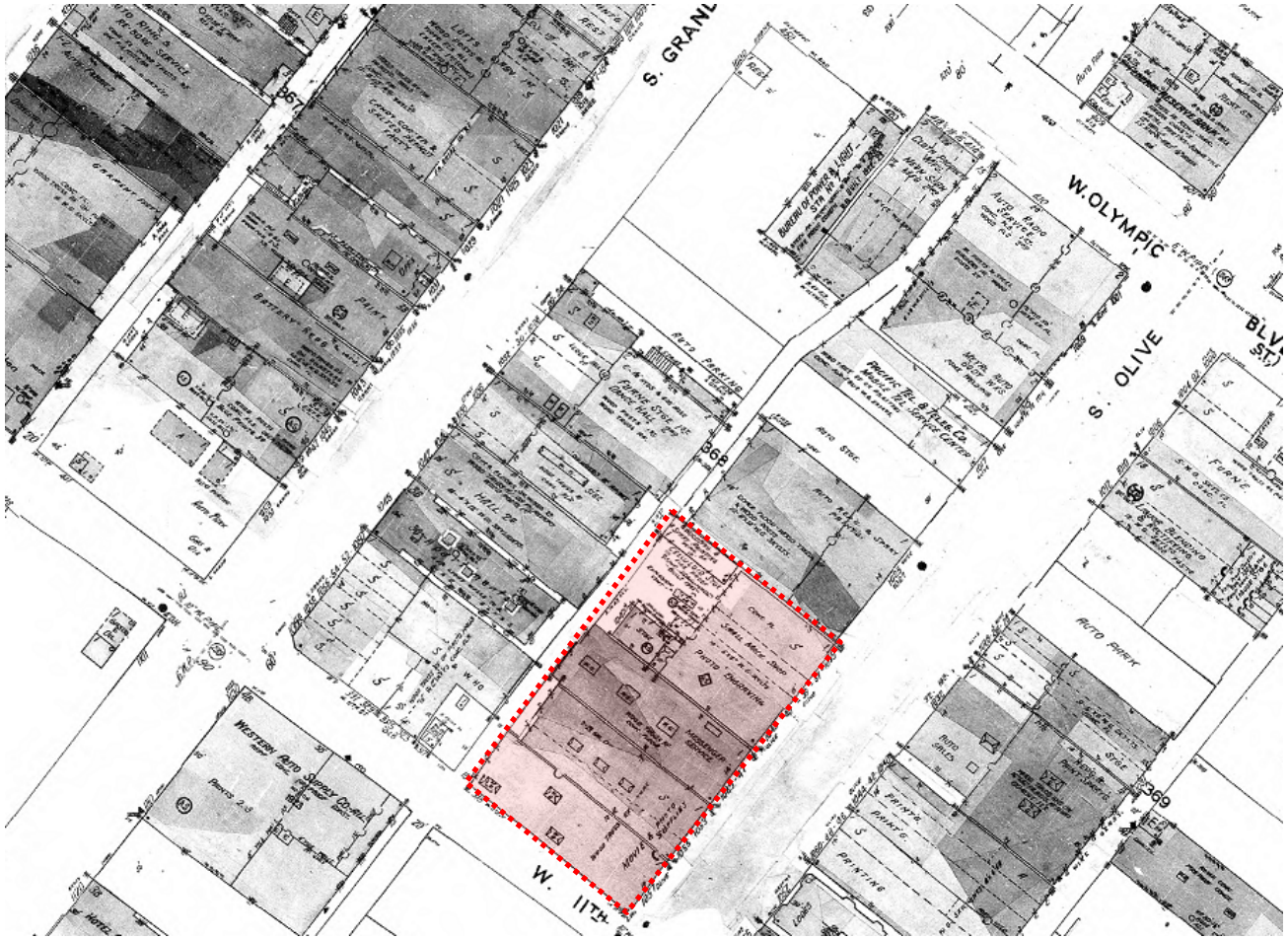
SOURCE: EDR 2017

Figure 19. 1888 Sanborn Map



SOURCE: EDR 2017

Figure 20. 1906 Sanborn Map



SOURCE: EDR 2017

Figure 21. 1950 Sanborn Map

The 1035-1037 Olive Street parcel was a store with concrete floors. The northeast corner of the project area is labeled, "Wooding & spray painting fence. Brick." An additional label in the open space behind the store read, "Celluloid storage. Fire proof. Built in 1945." Along the northwest Project boundary, the buildings that were adjacent had been removed and an alley that had been added to the block to the south of 11th Street was extended across 11th Street running north/south and adjacent to the western edge of the Project Site.

1953

Review of the 1953 Sanborn map revealed that all five parcels have the same mixed use commercial buildings that were seen in the 1950 Sanborn map. Parcel 1053-1057 Olive Street has a concrete floor and remains unchanged. Parcel 1047-1049 Olive Street remained unchanged. The back of parcel 1035-1037 Olive Street had an additional storage structure that was labeled as a concrete brick or cement block construction. The alley along the northwest Project boundary remains unchanged.

1955

Review of the 1955 Sanborn map revealed that all of the parcels within the Project boundary and their mixed use commercial buildings remained unchanged from the prior 1953 edition of the Sanborn map.

1958

Review of the 1958 Sanborn map revealed that the 1053-1057 Olive Street buildings commercial usage had changed. The western half of the building was being used for furniture, while the 1053-1055 Olive Street half of the parcel was being used as a store. The rest of the mixed use commercial buildings remained as depicted in the 1953 and 1955 Sanborn maps.

1962

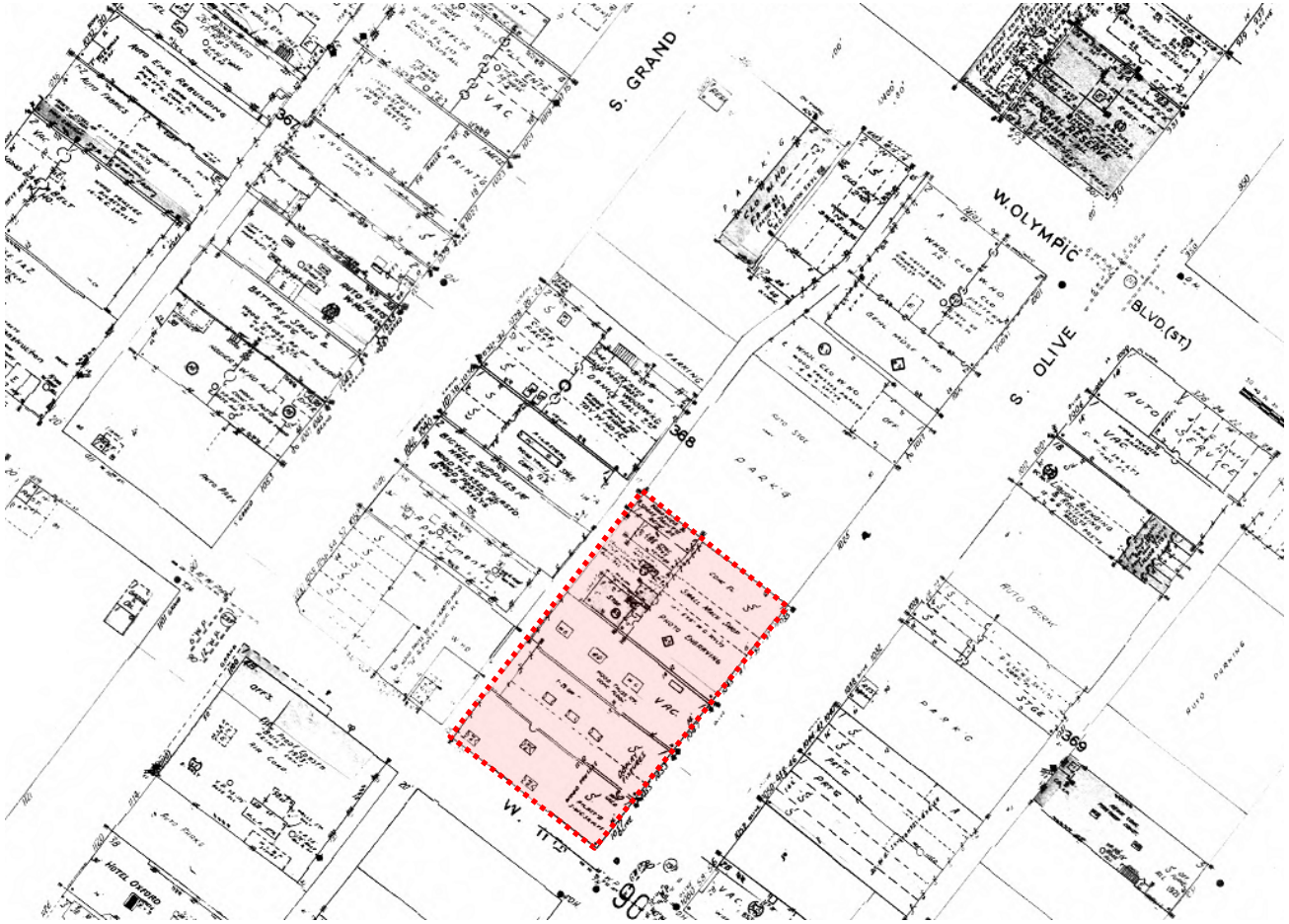
Review of the 1962 Sanborn map revealed that parcel 1047 Olive Street buildings usage had changed from a messenger service to an auto repair shop. The rest of the mixed use commercial buildings within the Project Site remain unchanged from the prior 1960 Sanborn map.

1963

Review of the 1963 Sanborn map revealed that all of the parcels within the Project boundary and their mixed use commercial buildings remained unchanged from the prior 1962 Sanborn map.

1967

Review of the 1967 Sanborn map (**Figure 22**) revealed that the 1057 parcel changed from a furniture building to a store with additional information that reads, "PILCAST'D 3-WGSRK15." The 1053-1055 Olive Street location includes additional information that read, "Display Fixtures." The 1047 Olive Street building remains unchanged but was vacant. The rest of the mixed use commercial buildings within the Project Site boundaries remain unchanged from the 1962 and 1963 Sanborn maps.



SOURCE: EDR 2017

Figure 22. 1967 Sanborn Map

1968

Review of the 1968 Sanborn map revealed that the 1047 Olive Street building was no longer vacant. During this time, it was being used as a warehouse. The rest of the mixed use commercial buildings within the Project boundaries remained unchanged from the 1967 Sanborn map.

1970

Review of the 1970 Sanborn map revealed that the 1047 Olive Street building that was being used as a warehouse was marked as a commercial space. The rest of the mixed use commercial buildings within the Project boundaries remained unchanged from the 1968 Sanborn map.

Aerial Images

1928

Review of the 1928 aerial image (**Figure 23**) revealed three buildings and one smaller structure within the Project area. The west side parcels contain one large building and one parallel building that is half the size of the large building. The east side parcels contain one large building and one smaller adjacent building attached with open space in between the central portion of the property. There is an alley present along the northwest Project boundary that starts from West Eleventh Street and terminates midblock just past the Project boundary.

1938

Review of the 1938 aerial image (**Figure 24**) revealed a complete structural change for the buildings within the Project area. It indicated five buildings where the three buildings structures were in 1928. The open space seen in the 1928 aerial image was replaced with three or four additional small structures. There was a small area of open space along the northwest boundary at the back of these small structures but all shrubbery has since been removed.

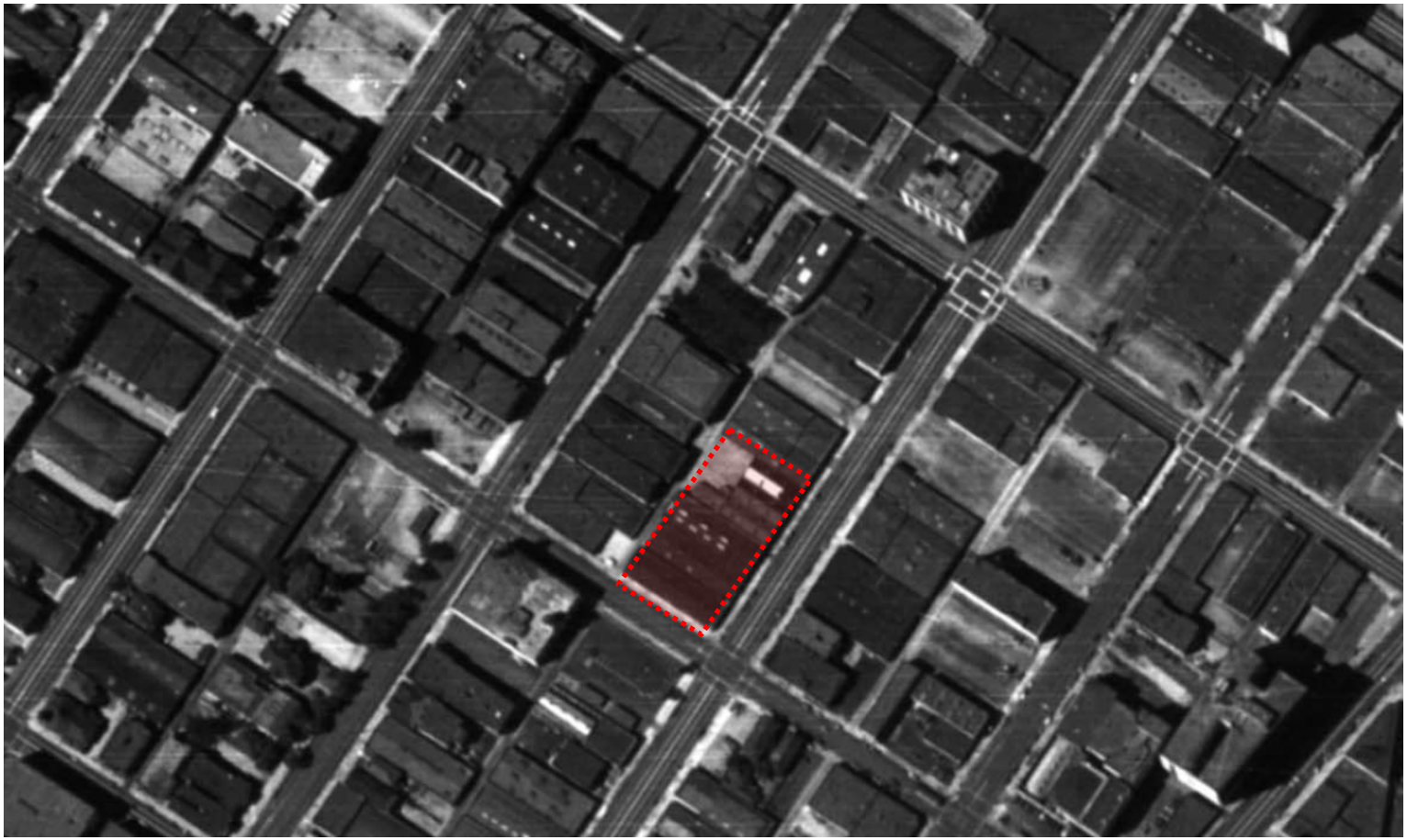
1967

Review of the 1967 aerial image (**Figure 25**) revealed that all of the parcels within the Project area have buildings. The back half of the store in parcel 1035-1037 does not appear to have as much open space as represented on the Sanborn maps. There is a bit of open space represented by the tree shadows, but the parcel itself appears to be fully encompassed by the building structure. Four building structures or roof lines in total can be seen in the aerial image. The ally present along the NW Project boundary that starts from West Eleventh Street now terminates at Olympic Boulevard.



SOURCE: EDR 2017

Figure 23. 1928 Aerial Image



SOURCE: EDR 2017

Figure 24. 1938 Aerial Image



SOURCE: EDR 2017

Figure 25. 1967 Aerial Map

Construction and Occupancy History of the Project Site (Buildings A through E)

Methods

The construction and occupancy history for Building A (1057 South Olive Street), Building B (1053-55 South Olive Street), Building C (1047-49 South Olive Street), Building D (1045-33 South Olive Street), and Building E (Directly behind Building D along rear alley) (see **Figure 3)** is provided in the following sections. The building permit table (Appendix C, Table 1), occupancy history table (Appendix C, Table 2) and original records are included in **Appendix C**. A construction history of the Project Site was developed utilizing permits on file with the City's Department of Building and Safety, Sanborn Maps, and aerial imagery. City directories, building permits, newspapers, and other information were reviewed to determine if the subject property has any significant associations with the productive lives of historic personages. The known occupants of Buildings A through E were generally manufacturing or retail businesses. The occupancy and ownership history of the Project Site is summarized below.

Results

Building construction research is summarized in the following section and documented in Appendix C**,** however it should be noted that not all of the original building permits for the existing buildings on the Project Site are available. Buildings A, B, C, and D were built around 1910s. Building E was built the 1940s as an ancillary building and was used as celluloid storage in 1945 Furthermore, unpermitted alterations observed during the site investigation are summarized below.

Building A (1057 South Olive Street)

Construction

The original building permit for the initial construction of Building A was not available, however it may have been constructed at the same time as Building B. The first available building permit for Building A was issued on December 7, 1928 to owner Winslow Felix, who hired contractor G.F. Swanson to cut an 8' x 8' foot opening into a wall between 1053 and 1054 S. Olive Street, which allowed space for cars on each side of the opening. This permit also applied to adjacent Building B (LADBS 33866). Issued on February 14, 1929, the next permit was also applicable to both Buildings A and B. It called for contractor M. D. Durbin to cut an opening through 17" brick wall, with I beams and "underwriter's fire doors" installed on each side of the new opening (LADBS 4097). On May 7, 1929, new owner Ida May Garland hired architectural firm Morgan, Walls & Clements to move the front wall back 5' due to Olive Street being widened. (LADBS 12329). In 1938, Garland hired architect Stiles O. Clements and contractor Edwin Rudolph to install a new transom sash and trim, with new bulkhead facing. and to paint the exterior street front walls (LADBS 8765).

The record jumps to 1966, when owner Grover T. Garland contracted Hanko Corp. and architect Chambers & Hibbard to repair automobile damage on the east wall. (LADBS 17924). The next permit is from 1981 and records owners Lewis Berenzweig and Pauline Heidman hiring contractor Christian V. Vilciu to add interior non-bearing partitions and close two doors (LADBS

25633). In 1987, RGA Construction installed seismic anchors (LADBS 69565) and in 1989, the lots on which 1055 and 1057 S. Olive Street sit were tied in association with further seismic work carried out by contractor Steve Notaro (LADBS 02340). In 1990, owner Berenzweig hired Decoma Industries, Inc., to make minor changes to the veneer and braces of previous retrofits (LADBS, 1990, 67131) and to make interior alterations (LADBS 074447). In 1991, owners Paulin Heideman and Lewis Berenzweig hired architect Ruben S. Ojeda and contractor Steve Notaro to add "new plaster and metal façade and storefront" to the building (LADBS, 1991, 76498). In 1992, Berenzweig hired Decoma Industries to repair damaged trusses (LADBS 15851).

The next permit was in 1995 and records owner Rick Berenzweig hiring architect Dee Carawan and Decoma Industries for interior improvements. (LADBS 35822). In 2001, the Richard Berenzweig Trust and Richard Berenzweig hired contractor Decoma Industries to do further interior alterations. This permit also applied to Buildings B and C (LADBS 01016-10000-06553). The final available permit is from 2015, and records owner 1045 Olive LLC hiring PR Construction, Inc., to do interior, non-structural alterations.

Occupancy

Building A and B were first owned by the Simplex and Mercer Pacific Coast Agency, which operated an automobile showroom and garage on the property from 1913 to 1916. After 1916, the name of the ownership changed to Mercer Jordon Pacific Coast Agency. Mercer Motor Cars, headquartered in New Britain, Connecticut, began in 1909 and operated until approximately 1925. Mercer was known for their high quality passenger and competition cars, including America's first "sports car" the Raceabout (The Trenton City Museum at Ellarsile 2017).

In 1921, Winslow Felix (1890-1936) purchased the portion of the property that included Building A and B to be used as his used car showroom and garage. A year later, Felix opened Felix Chevrolet on 12th and Grand, and kept Building A and B on the Project Site for the dealership's used car showroom and garage. Felix became well known for his clever marketing tactics including the "trial purchase plan," and making service "house calls" (Los Angeles Times 2005). However, his greatest marketing ploy was utilizing cartoonist Pat Sullivan's Felix the Cat cartoon as his mascot for the dealership (Los Angeles Times 2005). Felix was a founder of the Greater Los Angeles Motorcar Dealer Association and the Los Angeles Auto Show. Felix unveiled his feline mascot at the 1923 auto show and his business began to quickly grow. Felix used the cat's image anywhere he could to advertise his business, including driving around town with a replica of the cat's large head in his back seat (Los Angeles Times 2005). Due to his antics, Felix became a prominent member within the Los Angeles society. Winslow Felix owned the dealership until his death during a polo match in 1936. After his death the main dealership and used car dealership transferred ownership to his wife Ruth. However, Ruth was not allowed to operate the dealership due to General Motors' policy prohibiting female dealers. The dealership was operated by the company controller, Claude Craig, until his death in 1955. After his death, Ruth sold the business to Nikolas N. Shammas. Ruth owned Building A and B until approximately 1951 (Los Angeles Times 2005).

In 1951, Craig Movie Supply operated a movie and photo supply business at the property until approximately 1955. Ownership of Building A and B changed hands several times and included a furniture, heating supply, and music publication store.

Building B (1053-55 South Olive Street)

Construction

The permit record for Building B begins in 1912 when owner Theo A. Simpson commissioned architect-builder H.C. Brown to demolish an existing residential building (LADBS 13767) in order to design and construct a one-story brick garage building in its place (LADBS 13765). The subsequent permit dates from 1917, and records owner Merchants Hart Bank hiring contractor J. F. Hall-Marlin co. to repair fire damage. The next permit also applies to adjacent Building A and records owner Winslow Felix hiring G. F. Swanson to cut an 8' x 8' foot opening into a wall between 1053 and 1054 S. Olive Street in order to create space for more cars on each side. (LADBS 33866). Also applicable to Building A, the second permit issued called for an opening to be cut through 17" brick wall, with I beams and "underwriter's fire doors" on each side of the new opening (LADBS 4097). The next permit records owners Geos Hammel and H.M. Miles making tenant improvements in 1932 (LADBS 17663). In 1934, owner F.W. Braun Co. applied to make interior subdivisions and tenant improvements and add skylights and "new store fronts and slider" to the building (LADBS 16567).

The record resumes in 1966, when owner Louis Berenzweig (also the owner of Building A as "Lewis Berenzweig") pulled a permit for interior improvements (LADBS 19912). Berenzweig (spelled "Berenzweis" here) installed seismic anchors in 1987 (LADBS, 1987, 69566) and hired N/S RGA Construction to do further retrofits in 1989 (LADBS 2339). In 1990, Berenzweig hired Decoma Industries to make more interior improvements (LADBS 05929). In 2001, the Richard Berenzweig Trust and Richard Berenzweig again hired Decoma Industries to do more interior improvements (LADBS 01016-10000-06553). This permit was also applicable to Buildings A and C.

Occupancy

Occupancy History for Building B is included in Building A's history, above.

Building C (1047-49 South Olive Street)

Construction

Building C's permit record begins with the relocation of a residence and associated structure by owner John Hayes in August of 1910 (LADBS 06868 and 06869). Building C was constructed that same year, shortly after the residence was relocated (LADBS, 1910, 07965). Owners Steve Turner and Ralph Sprowls designed the building, and hired contractor H.C. Brown to construct it. Like its neighbors, the new building was for the storage and display of automobiles. Following its construction, permits record multiple minor alterations to the building's interior and exterior, including the addition of a double-faced sign on the roof in 1923 by contractor Electrical Products (LADBS 25972) and alteration of interior partitions in 1932 (LADBS 01465). The most extensive alterations occurred in 1929 when owners Turner and Sprowls added skylights to the roof and moved the building's front façade back 5' from the street front (LADBS00522 and 14726).

In 1941, owner United Parcel Service hired S. N. Benjamin to do interior improvements (LADBS 06261). In 1952, owner Turner altered the building's parapet walls along Olive Street and the rear alley (LADBS 43829). The building's front elevation was once again altered in 1968, when Occidental Life hired architect Joseph J. Takahashi and contractor Lukens, Inc., to alter the façade with aluminum facing and make tenant improvements (LADBS 65501). Also in 1968 and in the following decade, minor, mostly interior improvements and repairs were made (LADBS 65749, 66084, 66910, 50657, 78225). The most extensive alterations occurred in the 1980s, when property owner Steve Zimmerman hired architect S. B. Beyzaee and Vahdani Construction Co. to make earthquake safety alterations (LADBS 99414, 28198, 29827). Finally, in 2001 the Richard Berensweig Trust and Richard Berenz made tenant improvements to partially include new openings in walls (LADBS 01016-10000-06553). This also applied to Buildings A and B.

Occupancy

During the area's automobile heyday, Grand Avenue and Figueroa Street were known as Auto Row, and buildings located in the area were utilized by a variety of automobile dealers, repair shops, and auto supply shops. Building C was occupied by several automobile dealers, part suppliers, and repair shop including Big Four Automobile car dealership (1913); C.S. Anthony Southern California distributor of automobile and farm equipment (1914-1917); Bridge Bullock Inc. used car department (1923); Harvey Goodwin, car dealer (1928), and the Federal Garage, automobile dealer (1940). In 1950 Red Arrow Messaging Service utilized the building for one year, when Mitchell and Herb Engraving Company leased the property for their photographic developing and plate etching business. The last known occupant of the building was the National Auto Glass Company who was present in Building C in 1969.

Building D (1045-33 South Olive Street)

Construction

Building D was built in 1912 when owner Alfred C. Alfrey hired architects Nooriger & Slyson, and contractor Theo N.S. Gillwig, to design and build a showroom and garage building. (LADBS 3380). In 1929, owner J. Banning hired contractor A.J. Nalgreen to set back the building 5' further from Olive Street to accommodate that thoroughfare's widening (LADBS 421). In 1936 owner Carl Shultz hired contractor S. H. Sheers to put in temporary interior walls (LADBS 258). In 1939, Title Insurance Trust Company hired contractor Werner Swanson to alter three store fronts, which involved no structural changes (LADBS 28043). At this time Building D was divided into three stores, with one used for Photo Engraving services (1043 S. Olive), the other used as a small machine shop (1039 S. Olive), and 1035-1037 S. Olive used as a store. Approximately around this time, a small addition or shed was added to the rear northwest corner for the Photo Engraving business, which used the building for Storage (Sanborn 78). T.R. King & Co., owner of the Photo Engraving business, hired contractor Harry M. Lukens to build a partition in the building and place a film vault (LADBS6824, 6825).

In 1953 several changes were made to Building D and E, as H.A.J. Realty Co. altered the street pathway wall along Olive Street (LADBS 61033) and owner M.C. Anderson altered the street parking along Olive Street (LADBS 61032). This same year, Anderson was also permitted to alter three one-story buildings (LADBS 61032). In 1972, owners Charles & Paul Endy were issued a permit to install interior partitions to three one-story buildings, two of which would be used for

manufacturing, and one used as a machine shop (LADBS 59054). Four years later, the Amour Co. installed suspended ceilings in two of the manufacturing buildings and did re-roofs (LADBS 29797, 31162). In 1978, owner Jose E. Chahin began a serious of renovations including the installation of new baths in 1977, the conversion of the print shop to office in 1978, and interior alterations to comply with updated building standards in 1989 (LADBS 54830, 57778, HO-2912). In 1989, new owner Yon Chul Shin converted 1035-1037 S. Olive to a store and packaged goods center. This permit also applies to Building E.

Occupancy

In the early occupancy history of Building D, research revealed that the building was also utilized for a variety of independent automobile businesses including: Hawley King & Co., used car department (1915); J. Henry Fahy, automobile dealer (1922; H.W. Swanson), Hupmobile (car manufacturer) dealer (1924); Borto Tire Company, and tire shop (1936). In 1933, the Miner's Exchange took over 1039 S. Olive; and the L.A. Camera Exchange leased 1037-1041 S. Olive Street in 1936.

Building E (Directly Behind Building D Along Rear Alley)

Construction

In 1912, owner Alfred C. Alfrey hired architect Nooringr & Slyson, and contractor Theo N.S. Gillwig to design and build a one-story 100' x 150' building to function as a showroom and garage. The permit issued stated that the building would have an 18" below grade foundation, brick walls, steel beams, cement and tile floors, with brick and wood partitions (LADBS, 1912: 3380). In 1929, owner J. Banning hired contract A.J. Nalgreen to alter a one-story 50 x 100' building, and set back from 5' and remodel same appendage (LADBS 1929: 421). In 1936 owner Carl Shultz was issued a permit to alter a one-story 40' x 80' building with brick walls and "put in division wall 74' long plaster both sides, interior only" (LADBS 1936: 258). In 1953, M.C. Anderson was issued a permit to alter the street parking along Olive Street to two-one story buildings 50 x 100' (LADBS 1953: 61032) Later that year, Anderson took out a permit to alter three one-story buildings that were 50 x 80' with brick and stucco walls as per changes from a letter from the building and safety commission (LADBS 1953: 61032). In 1972, owners Charles & Paul Endy were issued a permit to install interior partitions to three one-story buildings, two of which would be used for manufacturing, and one used as a machine shop (LADBS 1976: 59054). Four years later, the Amour Co. installed suspended ceilings to two of the manufacturing buildings and re-roofed two one-story buildings (LADBS 1976: 29797, 31162). In 1989, new owner Yon Chul Shin converted the one 50 x 88' building which were presently used as store and manufacturing, and to store and packaged foods. Two years later, earthquake damage was completed two two-one story buildings 50' x 88' (LADBS 1990: 06874). In 2014, the last permitted change was made to the building to alter one retail building, which measured 50' x 65'. This permit stated that "alterations to portion of buildings footings per engineering design (total linear length 65') (LADBS 2014: 14016-1000-20378).

Occupancy

The only information regarding the occupancy history of Building E is indicated on the 1950 Sanborn Fire Insurance Map, which has the building labeled as used for woodworking and celluloid storage.

Sacred Lands File Search

The NAHC maintains a confidential Sacred Lands File (SLF) which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on November 16, 2017 to request a search of the SLF for the Project Site. The NAHC responded to the request in a letter dated November 17, 2017. The letter states that the SLF search did not indicate the presence of Native American cultural resources within or adjacent to the Project Site (**Appendix B**).

Geotechnical and Geological Review

Geologic mapping by Dibblee and Ehrenspeck (1991) indicates that the surface of the Project Site is covered with Holocene-aged younger Quaternary alluvium (mapped as Qa). The alluvial sediments were deposited on the ancient floodplain of the Los Angeles River and consist of well-

sorted silts and sands, interbedded with stream channel deposits of sands and gravels (Dibblee and Ehrenspeck, 1991).

Geotechnical analysis of the Project Site indicates that artificial fill is anticipated to be shallow, with depths of 7 to 9.5 feet below ground surface (bgs) recorded in borings at the Project Site (GeoDesign, 2017). The artificial fill as described ranged from a clayey sand to a silty sand with gravels. The compaction of these soils ranged from loose to very stiff and all samples were moist. In 0 to 7-foot range these fill soils contained wood, cement and brick fragments. It is possible these soils are imported as fill, however given the age of the development, it is not likely. The fill can likely be attributed to agricultural use, the turn of the century development and demolition of the residential structures for the development of the current structures. Below the artificial fill is the Holocene-aged younger Quaternary alluvium, as mapped by Dibblee and Ehrenspeck (1991). Beneath the younger alluvium, the Project Site is underlain by Pleistocene-aged older Quaternary Alluvium (mapped as Qae and Qoa) and the Pliocene-aged Fernando Formation (mapped as Tfr). The depth at which younger alluvium transitions to older alluvium has not been determined in the Project Site.

CULTURAL RESOURCES SURVEY

Methods

The Project Site was surveyed to identify the presence of archaeological or historic architectural resources on December 12, 2017 by ESA archaeologist Vanessa Ortiz, M.A., R.P.A., and ESA architectural historian Chris Taylor, M.A, if any, and resources identified were documented in 35mm photographs and recorded on Department of Parks and Recreation (DPR) survey forms. Survey methods followed established state guidelines for recording historical resources (California Office of Historic Preservation's *Instructions for Recording Historical Resources,* 1995), and the City's SurveyLA survey methods. The pedestrian survey was conducted of the Project Site and undeveloped areas with visible ground surface were inspected for evidence of archaeological resources within the Project Site, and to document evidence of past disturbances associated with any previous development. The intensive-level historic architectural resources survey was conducted to identify and record potentially eligible buildings and structures within the Project Site.

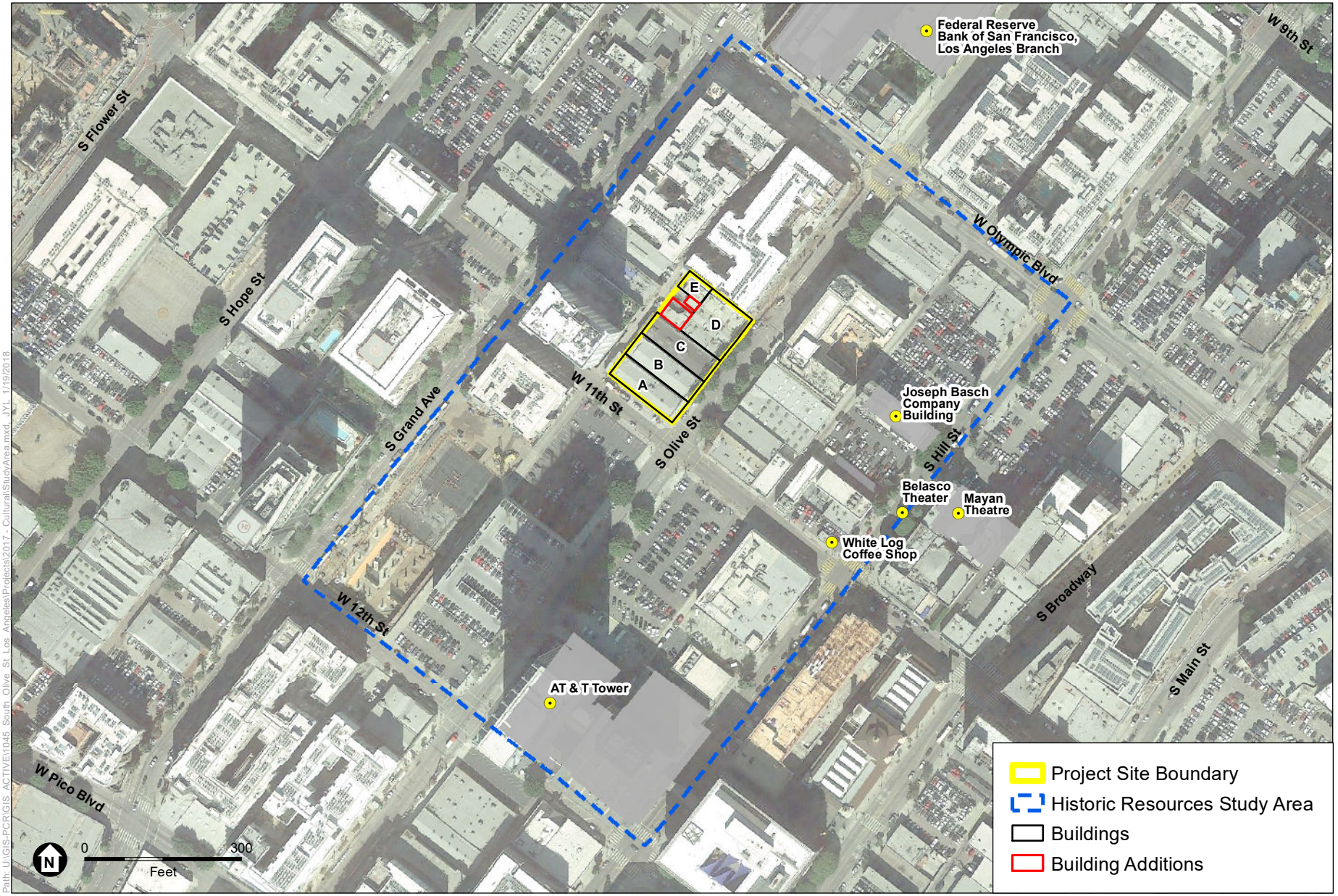
Results

Archaeological Resources Survey

The Project Site consists of five parcels (APNs 5139-010-001, 5139-010-011, 5139-010-010, 5139-010-002 and 5139-010-004) located at the northwest corner of Olive and 11th Streets in Downtown Los Angeles (see **Figure 3**). The developed areas of Project Site were subject to a reconnaissance-level survey and the landscaped surfaces were intensively inspected for the presence of archaeological materials. The western portion of the Project Site which includes the present alley was inspected for evidence of *Zanja* No.8. The alley has been recently repaved and there was no surface evidence of the *Zanja* No. 8 visible. No surface evidence of archaeological resources were identified as a result of the survey.

Historical Resources Survey

A total of five buildings (Building A, Building B, Building C, Building D, and Building E) were documented as a result of the survey (**Figure 26**). The resources surveyed on the Project Site are vernacular commercial buildings constructed between 1910 and 1945 according to Los Angeles County Assessor records. Detailed descriptions and significance evaluations of these resources are provided in the following section.



SOURCE: ESRI, City of Los Angeles

1045 S. Olive Street Cultural Resources Technical Report

Figure 26

Historic Resources Study Area

ESA

Historical Resources Identified on the Project Site

Building A

Architectural Description

Primary Elevation (east)

Building A (APN 5139-010-001) is located at 1057 South Olive Street on the corner of Olive and 11th Streets. Los Angeles County Assessor records indicate that the building was constructed in 1911. In 1929, the original front elevation was pushed back five feet to accommodate widening of Olive Street. The building is an altered example of vernacular commercial architecture (**Figure 27**). Building A has a rectangular footprint constructed on a concrete foundation and is topped with forward-facing gabled roof is hidden behind a parapet wall, which was altered in 1939 according to building permits. The building's various elevations are clad in a combination of metal paneling and tile veneer. Building A's primary (east) elevation faces toward Olive Street. The primary elevation is entirely clad in metal paneling (alteration) and tile veneer (alteration), with few distinguishing architectural features. The storefront was altered in 1991. Building A's main entry is located at the east end of the façade and features two fully glazed aluminum framed doors setback from the façade's front edge (alteration) (**Figure 28**). The primary elevation also contains three sets of aluminum framed store-front windows (alteration).



SOURCE: ESA 2017

Figure 27. Primary elevation of Building A, view to southwest

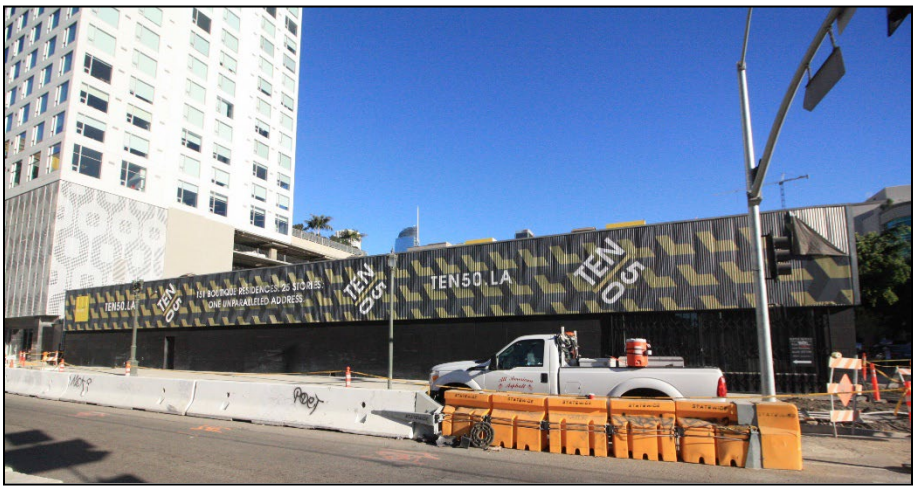


SOURCE: ESA 2017

Figure 28. Main entry into Building A, view to southwest

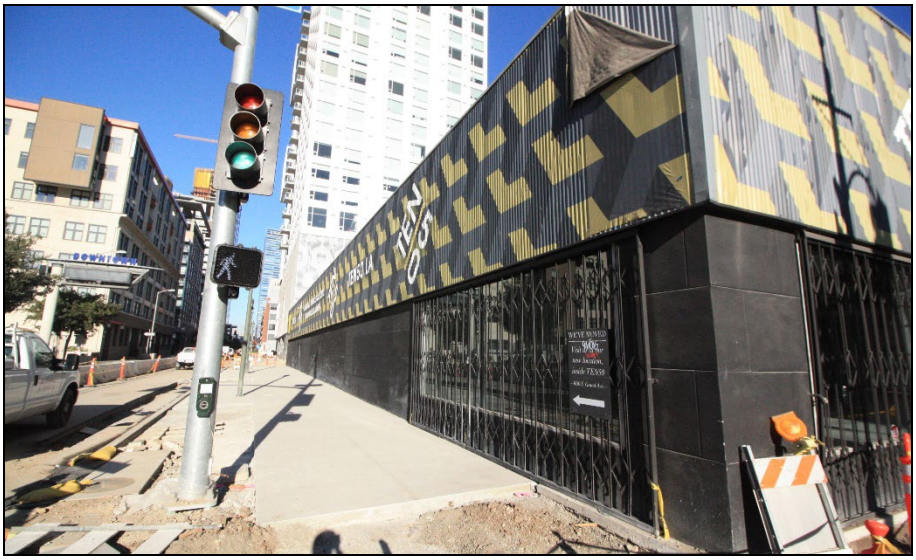
Side Elevation (south)

Building A's side (south) elevation is clad with metal paneling along the upper half of the facade (alteration) and tile veneer along the bottom, matching the primary (east) façade (**Figure 29**). Like the primary facade, the east elevation lacks any distinguishing architectural details relating to the building's original design and construction date of 1911. The building's roofline is obscured by a parapet wall along the south elevation. Fenestration on the south elevation includes one aluminum framed display window (alteration) (**Figure 30**).



SOURCE: ESA 2017

Figure 29. Building A's side (south) elevation, view to north



SOURCE: ESA 2017

Figure 30. Detail view of Building A's cladding, view to northwest

Rear Elevation (west)

Building A's rear (west) elevation is clad in metal paneling and tile veneer similar to the south and east elevations (**Figure 31**) (alteration). There are no architectural features presented along the west elevation but the building's gabled roofline is visible. The elevation features no window openings and one large metal roll-up garage door with a smaller imbedded pedestrian door.



SOURCE: ESA 2017

Figure 31. Rear elevation of Building A, view to southeast

Side Elevation (north)

Building A's side (north) elevation was not observed during the site survey due to the close proximity with the adjacent building to the north.

Building A Interior

Interior spaces near the front of Building A have been altered with tenant improvements (**Figures 32 and 33**), which have occurred over time. These improvements include contemporary build-outs and fixtures as well as new restrooms. The most recent improvements documented in the building permits date from 2015. Original materials and construction methods related to the Building's original design and construction in 1911 can be observed in the rear portion of the building. Original masonry, wood trusses, concrete buttresses, and metal framed industrial windows remain exposed in rear portions of the building's interior (**Figures 34, 35, and 36**).



SOURCE: ESA 2017

Figure 32. Altered interior spaces of Building A



SOURCE: ESA 2017

Figure 33. Altered interior spaces of Building A



SOURCE: ESA 2017

Figure 34. Original wood trusses, Building A interior



SOURCE: ESA 2017

Figure 35. Unreinforced masonry walls in Building A interior



SOURCE: ESA 2017

Figure 36. Exposed wood trusses and concrete buttresses in Interior of Building A

Building B

Architectural Description

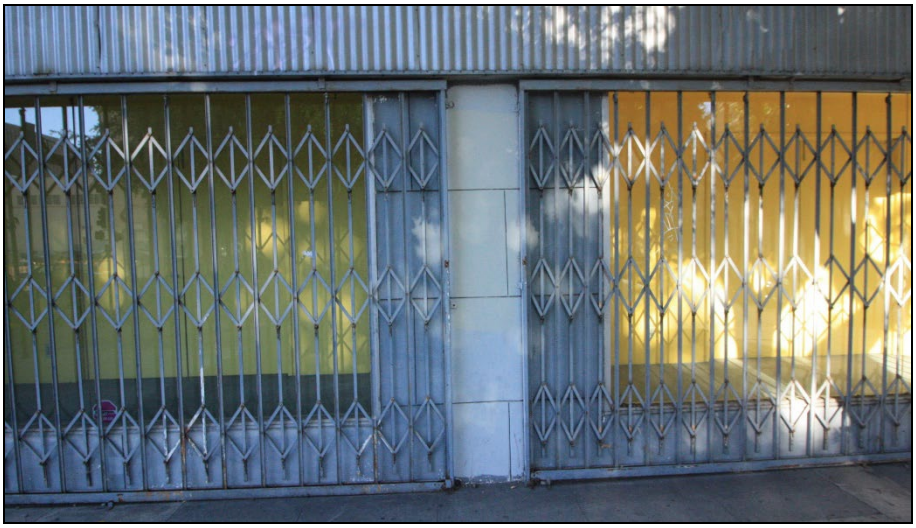
Primary Elevation (east)

Building B (APN 5139-010-011) is located adjacent to Building A at 1053-55 South Olive Street. Like Building A, Building B is an example of a vernacular commercial building with heavily altered exteriors. Originally constructed in 1912, Building B's original architectural design and features have been altered by contemporary materials on its primary facade (**Figure 37**). Building B features a rectangular footprint constructed on a concrete foundation with a front-facing gabled roof obscured by a parapet wall. Building B's primary (east) elevation faces east toward Olive Street and is altered with modern metal paneling and tile veneer cladding. The east elevation features three bays with aluminum framed display windows with security gates (alterations) and no entryway (**Figure 38**).



SOURCE: ESA 2017

Figure 37. Primary elevation of Building B, view to northeast



SOURCE: ESA 2017

Figure 38. Detail view of Building B's Primary elevation, view to west

Rear Elevation (west)

Building B's rear (north) elevation is made of reinforced concrete, topped with a flat roof (**Figures 39 and 40**). This portion of the building appears in aerial images as early as 1930. The rear elevation features no ornamental detailing or window openings. Two large metal roll-up garage doors provide access to the building's interior.



SOURCE: ESA 2017

Figure 39. Rear entrances to Building B, view to east



SOURCE: ESA 2017

Figure 40. Rear elevation of Building B indicated by the red box, view to southeast

Side Elevations (north and south)

Building B's side elevations (north and south) were not observed during the site survey due to the close proximity with adjacent buildings.

Building B Interior

Building B's interior is split into two bays, divided by wood framed wall. The bays are open and currently used for storage (**Figure 41**). The original unreinforced masonry walls and wood trusses remain exposed throughout the interior of the building (**Figure 42**). The building was structurally retrofitted in 1989 and 1990. In the northern most bay, contemporary build-outs using drywall include a small office space (**Figure 43 and 44**) (alteration).



SOURCE: ESA 2017

Figure 41. Exposed masonry and wood trusses in Building B Interior



SOURCE: ESA 2017

Figure 42. Exposed masonry and wood trusses in Building B Interior



SOURCE: ESA 2017

Figure 43. Interior alterations in Building B



SOURCE: ESA 2017

Figure 44. Interior alterations in Building B

Building C

Architectural Description

Primary Elevation (east)

Building C (APN 5139-010-010) is located at 1047-49 South Olive Street and is an example of an altered vernacular commercial building built in 1910 (**Figure 45**). Building C features a rectangular footprint constructed on a concrete foundation with a low pitched roof. A front-facing gable is obscured from view by the building's parapet wall. Building C's primary (east) elevation faces toward Olive Street. While portions of the building's concrete structure are visible, concrete blocks infill one of the window openings and the upper portion of the façade is clad with contemporary metal paneling. Two large metal roll-up doors (alterations) provide access to Building C (**Figure 46**).



SOURCE: ESA 2017

Figure 45. Primary elevation of Building C, view to northwest



SOURCE: ESA 2017

Figure 46. Metal Roll-up door on primary elevation of Building C, view to west

Rear Elevation (west)

Building C's original unreinforced masonry construction is visible at its rear (west) elevation (**Figure 47**). Its low sloping roofline flattens out at the rear and is obscured from view by a parapet wall. The rear elevation is dominated by a large metal garage door with security screen (alteration). Flanking the door are two pairs of double hung windows with arched openings and security screens (alteration) (**Figure 48**). The brick facade on the rear elevation is in poor condition and visual inspection indicates the brick itself has been subject to repair in several places.



SOURCE: ESA 2017

Figure 47. Overview of Building C's rear elevation, view to east



SOURCE: ESA 2017

Figure 48. Close-up view of arched window on the rear elevation of Building C

Side Elevations (north and south)

Building C's side elevations (north and south) were not observed (not visible) during the site survey due to the close proximity with adjacent buildings.

Building C Interior

Building C's interior consists of two large open bays used for storage. The unfinished spaces reveal the building's original unreinforced masonry construction, wood trusses, concrete framing,

and skylights that were added in 1929 (**Figures 49 through 52**). In 1977 and again in 1989, the building's trusses were repaired. In 1988 and 1989 the building was seismically retrofitted. Additional interior alterations include contemporary buildouts throughout the space.



SOURCE: ESA 2017

Figure 49. Interior view of Building C, view to the west



SOURCE: ESA 2017

Figure 50. Interior view of Building C, view to the west



SOURCE: ESA 2017

Figure 51. View of original wood trusses and skylights added in 1929



SOURCE: ESA 2017

Figure 52. Interior of Building C, including exposed masonry, wood trusses, and contemporary tenant improvements

Building D

Architectural Description

Primary Elevation (east)

Building D (APN 5139-010-002 and 5139-010-004) is located at 1045-33 South Olive Street and is an example of a vernacular commercial building constructed in 1912. In 1929, Building D's front elevation was pushed back five feet to accommodate the widening of Olive Street. Building D features a rectangular footprint constructed on a concrete foundation and is composed of three commercial bays (**Figures 53 and 54**). Its topped with three low pitched roofs surrounded by a parapet wall. The three bays are further broken down into six commercial spaces. Building D's primary (east) elevation faces toward Olive Street and is clad with a combination of materials including stucco, tile, and concrete. Each of the commercial bays features a store front consisting of a single glazed door and aluminum framed display windows with security gates or roll-up metal security doors (alterations).



SOURCE: ESA 2017

Figure 53. Primary elevation of Building D, view to northwest



SOURCE: ESA 2017

Figure 54. Primary elevation of Building D, view to northwest

Rear Elevation (west)

Building D's rear (west) elevation is clad with exposed unreinforced masonry (**Figure 55**) and features multiple additions constructed with masonry or wood framing with stucco exterior (**Figure 56**) (alterations). There are no significant architectural features presented along the west elevation. The elevation features multiple arched window openings of varying size, which have been infilled and an arched doorway that has also been infilled (**Figure 57**).



SOURCE: ESA 2017

Figure 55. Overview of Building D's rear elevation, view to southeast



SOURCE: ESA 2017

Figure 56. Rear addition on Building D, view to south



SOURCE: ESA 2017

Figure 57. Close-up view of masonry and addition at rear of Building D

Side Elevations (north and south)

Building D's side elevations (north and south) were not observed during the site survey due to the close proximity with adjacent buildings.

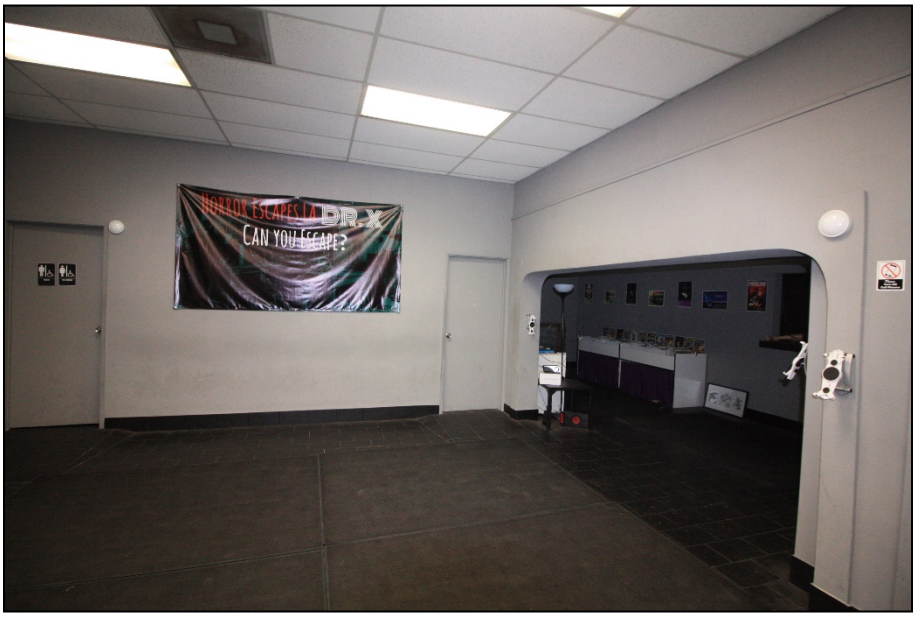
Building D Interior

Building D's interior has been broken up into multiple commercial bays, each altered with tenant improvements (**Figures 58 through 62**). The interior alterations include wood framed build-out spaces finished with drywall, tile and carpet flooring, light fixtures, and other commercial related upgrades. Original masonry walls, wood trusses, and skylights are visible in some sections of the building. Near the middle of the building, there is a staircase that leads to an upstairs office area original to the building (**Figure 63**).



SOURCE: ESA 2017

Figure 58. Hallway in tenant improved portion of Building D



SOURCE: ESA 2017

Figure 59. Modified storefront area in Building D



SOURCE: ESA 2017

Figure 60. Storefront area in Building D, including exposed metal framing added in 1989 and 1990



SOURCE: ESA 2017

Figure 61. Original skylight in Building D



SOURCE: ESA 2017

Figure 62. Interior of Building D with exposed masonry walls and contemporary tenant improvements



SOURCE: ESA 2017

Figure 63. Interior stairwell of Building D

Building E

Architectural Description

Primary Elevation (South)

Building E (APN 922-043-004) is located directly behind Building D, along the rear alley. The building is an example of vernacular commercial architecture (**Figure 61**) and was built in 1947. Building E features an L-shaped footprint constructed on a concrete foundation and is topped with a flat roof. The building's various elevations are composed of unreinforced masonry. Building E's primary (south) elevation faces the interior of the parcel, with few distinguishing architectural features other than the flat roof, brickwork and door openings. The building's flat roof is lined with a short wrought iron fence and barbed wire (see **Figure 64**). A single sliding garage type door with imbedded pedestrian door provides access to the building. It is protected by a metal accordion style security gate (alteration). The stoop has a canopy with a segmental pediment supported by wood posts. The main entry features a single wood paneled door with partial glazing. A secondary entrance is located near the east end of the primary elevation. The building's masonry exterior appears to have been patched multiple times throughout its history.



SOURCE: ESA 2017

Figure 64. Primary elevation of Building E, view to north

Side Elevation (west)

Like the primary elevation, Building E's side (west) elevation is composed of exposed unreinforced masonry (**Figure 65 and 66**). The east elevation lacks any distinguishing architectural details, window openings, or doorways.



SOURCE: ESA 2017

Figure 65. View of primary and side elevations of Building E, view to north



SOURCE: ESA 2017

Figure 66. Unreinforced masonry exterior of Building E, view to east

Side (south) and Rear (east) Elevations

Building E's side (south) and rear (east) elevations were not observed during the site survey due to the close proximity with adjacent buildings. The building's interior was also not accessible during the site survey.

SIGNIFICANCE EVALUATIONS

Five potential historical resources were identified and evaluated within the Project Site: Building A, Building B, Building C, Building D, and Building E were evaluated under the following associated SurveyLA themes: Commercial Development and the Automobile (1910-1980); subtheme: The Car and Car Services, (1910-1960), and property subtypes Car Repair and Car Showroom. Context for these themes are included in the "Historic Setting" section of this Report. Based on construction and occupancy research, summarized above, Buildings A, B, C, and D appear to have been built between 1910 and 1912. Building E was built in 1947 as an ancillary building for Building D. Buildings A through D were all originally built as part of the automobile infrastructure boom during the 1910s and 1920s in proximity to Los Angeles' "auto row" along Figueroa Street. Building E was a later addition and was not associated with the automobile industry.

All buildings were evaluated for their potential eligibility for listing under National Register Criteria A-D, California Register Criteria 1-4, and for local designation under City Criteria 1-4.

SurveyLA Registration Requirements and Eligibility Standards

As mentioned above in the "Historic Setting", there is one SurveyLA theme in Los Angeles' citywide HCS associated with the Project Site: Commercial Development and the Automobile, 1910-1980. Under this theme, one subtheme and two property subtypes were identified: The Car and Car Services, 1910-1960s, with the sub property types of Car Repair and Car Showroom. Following is the Context Summary Tables from the Survey Eligibility Standards developed by OHR that defines the eligibility standards, character-defining features, and integrity aspects a historical resource needs to have in order to be considered eligible in association with the aforementioned themes. In accordance with City guidelines for evaluating historical resources, these standards were utilized in the evaluation of the Project Site that follows below.

COMMERCIAL DEVELOPMENT, 1850-1980	
THEME:	Commercial Development and the Automobile, 1910-1980
SUB THEME:	The Car and Car Services, 1910-1960s
PROPERTY TYPE:	Commercial – Auto Related
PROPERTY SUB TYPE:	**Car Repair**
GEOGRAPHIC LOCATION	Citywide, typically along highways and arterial streets
AREA OF SIGNIFICANCE	Commerce

CRITERIA	A/1/1, C/3/3
PERIOD OF SIGNIFICANCE	1910-1960
ELIGIBILITY STANDARDS:	Demonstrates convenient automobile access from the street
	Was designed and historically used for the sale, service, maintenance, or collective off-street parking for the automobile
CHARACTER DEFINING/ASSOCIATIVE FEATURES:	More research is needed
	May also be significant under a theme within the architecture context
	Retains most of the essential character-defining features from the period of significance
	Significant as a property type (C)
	Significant for events (A)
INTEGRITY CONSIDERATIONS:	Original use may have changed
	Should retain integrity of Location, Design, Feeling
	Some original materials may have been altered, removed, or replaced
COMMERCIAL DEVELOPMENT, 1850-1980	
THEME:	Commercial Development and the Automobile, 1910-1980
SUB THEME:	The Car and Car Services, 1910-1960s
PROPERTY TYPE:	Commercial – Auto Related
PROPERTY SUB TYPE:	**Car Showroom**
GEOGRAPHIC LOCATION	Citywide, typically along highways and arterial streets
AREA OF SIGNIFICANCE	Commerce
CRITERIA	A/1/1, C/3/3
PERIOD OF SIGNIFICANCE	1910-1960
ELIGIBILITY STANDARDS:	Demonstrates convenient automobile access from the street
	Was designed and historically used for the sale, service, maintenance, or collective off-street parking for the automobile

CHARACTER DEFINING/ASSOCIATIVE FEATURES:	More research is needed
	May also be significant under a theme within the architecture context
	Retains most of the essential character-defining features from the period of significance
	Significant as a property type (C)
	Significant for events (A)
INTEGRITY CONSIDERATIONS:	Original use may have changed
	Should retain integrity of Location, Design, Feeling
	Some original materials may have been altered, removed, or replaced

Historic Architectural Resources

Buildings A, B, C, D, and E

Criterion A/1/1: Events

As mentioned in Commercial Development in Los Angeles, 1850-1980 historic context earlier in this Report, the emergence of the automobile in the 1910s shaped the layout of the City, shifting development patterns from an agricultural landscape with pockets of development to a sprawling metropolis. With Los Angeles' new transportation infrastructure, the proliferation of the automobile in the early part of the 20th Century spawned commercial improvements to the south and west of the central business district. Larger dealerships purchased lots along Figueroa Street to build multi-story auto parks, as smaller independent dealers and support centers (repair facilities, garages, etc.) purchased lots in the vicinity close to "auto row" (Figueroa and Flower streets). By at least 1921, the seven blocks within the vicinity of the Project Site included more than fifty different automobile related structures (garages, repair shops, dealerships, etc.). The Buildings (A, B, C, and D) located on the Project Site were simple support facilities for the nearby automobile industry, and very few of these associated facilities remain, as the area has been vastly redeveloped. Building E was a later addition and was not associated with the automobile industry. Significant representative examples of existing automobile buildings have been identified by SurveyLA and are included in the historic context above. However, Buildings A, B, C, and D located on the Project Site were among hundreds of support facilities utilized by the automobile industry throughout the area, and were not among the significant examples identified by SurveyLA when a survey was conducted of the Central City Community Plan Area in 2016.

The automobile showrooms, garages, or car repair shops in Buildings A, B, C, and D were not the first showrooms or car-service-related buildings in the Project vicinity or within the downtown area. They were part of a larger pattern or trend of development, and did not initiate or influence development patterns. By 1910, several automobile manufactures had large auto showrooms and repair facilities along Figueroa Street, leading to the name "auto row," as demonstrated in **Figure**

11 in the historic context "Commercial Development in Los Angeles, 1850-1980" included earlier in the Report. Furthermore, Buildings A and B were ancillary support buildings for Felix Chevrolet's primary showroom off the Project Site at 1201 S. Grand Avenue (extant). Buildings C and D were also ancillary buildings or repair shops supporting nearby showrooms, which are no longer extant as described in the historic context section above. Several excellent examples of showrooms and repair facilities remain within the Central City Survey area including Willys-Knight Building (1919, 425 W. Eleventh Street); Felix Chevrolet (1931, 1201 S. Grand Ave.); W.P. Herbert Company Showroom (1920, 1100 S Flower Street); 1360 S Flower Street (1912, auto showroom); 1136 S Flower St. (1926, auto repair); Motor Rim and Wheel Service of California (1927, 1136 S Flower Street); Davidson House and Meyer Showroom (1919, 1225 S, Grand Avenue); and Chevrolet Motor Company Showroom (1920, 1200 S. Hope Street). These distinctive buildings provide more meaningful representations of the commercial automotive industry's development in Los Angeles than the Buildings found on the Project Site.

Commercial growth in the downtown corridor continued as the automobile industry flourished along Figueroa and Flower Streets to World War II. By the Post World War II era, the Project Site began to change as Buildings A, B, C, and D were being used for a variety of retail and manufacturing purposes, including as a messenger service, engraving service, music publication, furniture store, and movie and photo supply store, as mentioned in the Occupancy History section under Additional Research. These later activities were not associated with automobile uses or the early development of the area. None of these Postwar businesses were found to have significant associations with important events in national, state, or local history. Moreover, these later uses of the buildings led to many tenant improvements, including major façade alterations to Buildings A, B, C, and D.

Building E was built in approximately 1947 as an ancillary building to Building D. In the 1950 Sanborn map, Building E was labeled as a woodworking and celluloid storage area. Building E appears to be a generic industrial manufacturing support building that has been significantly altered since its original construction in 1947.

Buildings A, B, C, and D do not significantly reflect the Commercial Development and Automobile theme. The buildings were simple support facilities for the nearby automobile industry and were not a noteworthy part of or a catalyst for the industry's development during the identified period of significance. Furthermore, as stated above, Building E was an ancillary building for Building D constructed late in the Project Site's history and does not appear to be have a significant association with the automobile industry. No evidence relating these Buildings to any other significant historic events was identified during the course of this evaluation. Therefore, Building A, Building B, Building C, Building D, and Building E are considered not eligible for listing under National Register Criterion A, California Register Criterion 1, or local Criterion 1 for association with historic events.

Criterion B/2/2: Significant Persons

Occupancy history research, as outlined in the "Additional Research" section did not suggest that Buildings A, B, C, D, or E were associated with the productive lives of historic personages. A

majority of the occupants of the Buildings were short-term lease holders of businesses that occupied the each of the buildings for a few years.

Only one person of some prominence was identified during the occupancy research. Winslow Felix (1890-1936), the second owner of Buildings A and B, made a name for himself with his Chevrolet car dealership located at 12th and Grand Streets (extant and identified by SurveyLA). Felix was well known because he utilized a cartoon cat to advertise his business, which allowed his business to become one of the most prominent car dealerships in Los Angeles. As a salesman and used-car manager, Felix established practices such as a two-day trial purchase of new cars, and house calls by service technicians, that were innovative for their time in the automobile sales industry. He helped found the Greater Los Angeles Motorcar Dealers Association, which rated the performance of new cars and customer satisfaction, a forerunner of *JD Powers and Associates*. He also helped organize the annual Los Angeles Auto Show and sponsored car race events and baseball teams. Felix befriended the animation producer, Pat Sullivan, whose studio created the famous animated character, *Felix the Cat* in 1919. In exchange for a new car, Sullivan allowed his friend Felix to use the animated character, *Felix the Cat* in advertising, beginning at the LA Auto Show in 1923. The advertising proved extremely successful, and Felix Chevrolet sales grew steadily as it moved to successively larger locations (SoCal Auto News 2008).

Felix utilized Buildings A and B as his used car lot, apart from his main dealership located off the Project Site at 1201 S. Grand Avenue. There is no evidence that Felix worked daily at Building A and B (the used car showroom and garage), furthermore, upon his tragic death in 1936, his wife took over the business. Though Felix was the owner of a prominent car dealership and well-known within the City, Buildings A and B were only ancillary buildings to the main dealership on 12th Street and Grand Avenue, and as such do not appear to be strongly associated with or otherwise reflect Felix's life's work.

While Felix was a significant person in the automobile sales industry, these buildings are not significant for their association with Felix because the buildings are unremarkable with unadorned utilitarian designs, do not retaining any features that would associate them with Felix's use, and were ancillary to Felix's primary showrooms located offsite. There is also no indication that Felix kept an office or regularly worked on the Project Site. Compared to Felix's main showrooms in nearby extant structures identified by SurveyLA as being strongly associated with Felix, the Project Site buildings do not represent or reflect his productive life. Furthermore, the Felix Chevrolet sign off the 110 was nominated as a LAHCM in 2007 and represents the culmination of Felix's career, demonstrating by contrast the lack of any similarly noteworthy feature associated with Felix at the Project Site. Therefore, there does not appear to be any known significant associations between Buildings A, B, C, D, or E and personages important to national, state, or local history. Neither Buildings A, B, C, D, or E appear eligible for listing under National Register Criterion B or California Register Criterion 2, or local Criterion 2 for association with historic persons.

Criterion C/3/3: Design/Construction

The Buildings on the Project Site do not appear eligible for designation under National Register Criterion C, California Register Criterion 3, or local Criterion 3. Buildings A (1911), B (1912;

H.C. Brown, architect), C (1910; John Hayes, owner and architect), and D (1912; Harry M. Lukens, contractor) were constructed between 1910 and 1912, and were primarily used as auto showrooms, garages, or repair shops. Building E was designed by architect S.B. Barnes and constructed 1947 as an ancillary building for Building D. No distinct architectural style could be identified, as each of the buildings has been severely altered and any architectural characteristics removed, as documented in the construction history and described in the architectural descriptions, above. The buildings are not architecturally distinctive and have simple rectangular massing, flat or gabled roofs, a mix of cladding faux tile, stucco, or aluminum siding. The buildings have been significantly altered since their original dates of construction, as all of the original fenestration and cladding has been replaced or filled in with prefabricated materials. Furthermore, none of these buildings were associated with master architects, engineers or builders. Researchers were unable to locate original building permits for Building A. Buildings B and C were designed by H.C. Brown as the architect and contractor. The architects for Building D were Nooringer & Slyson. Permits for Building E show it was constructed in 1947 and designed by an engineer named S. B. Barnes. None of these architects or engineers have been recognized as masters in their field, and research indicates they were not well known or notable architects during this era.

While the Buildings are historically associated with the rise of the automobile industry in Los Angeles, any architectural or physical indication of their original style or property type (showroom, garage, or repair shop) is longer present due to significant alterations and the loss of automobile-related features. The Buildings originally served as support facilities for the surrounding automobile industry. The Buildings were utilitarian support facilities and were not architecturally or historically significant in design or development of the showroom, garage, or repair shop property types. Furthermore, they the buildings have been substantially altered and no longer materially convey their original uses. Consequently, Buildings A, B, C, and D, are not exceptional examples of their property types. Several excellent examples of showrooms and repair facilities remain within the Central City Survey area, as stated above under Criteria A/1/1. Furthermore, Building E, is a vernacular industrial building that is not street facing, and has been altered and reconfigured since its original construction. Therefore, Buildings A, B, C, D, and E do not appear eligible under National Register Criterion C or California Register Criterion 3, or local Criterion 3.

Criterion D/4/4: Data Potential

While most often applied to archaeological districts and sites, Criterion D/4/4 can also apply to buildings, structures, and objects that contain important information. In order for these types of properties to be eligible under Criterion D/4/4, they themselves must be, or must have been, the principal source of the important information. Buildings A, B, C, D, and E do not appear to yield significant information that would expand our current knowledge or theories of design, methods of construction, operation, or other information that is not already known. Therefore, Buildings A, B, C, D, and E have not yielded or are not likely to yield information important to prehistory or history and do not appear to satisfy National Register Criterion D or California Register Criterion 4, or local Criterion 4.

Integrity

A property must have both significance and integrity to be considered a historical resource under federal, state, and local evaluation guidelines and CEQA. The National Register and California Register recognize a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. Eligible properties should retain several, if not most, of these aspects. Both registers require that a resource retain sufficient integrity to convey its significance, and the property must retain the essential physical features that enable it to convey its historical identity. Thus, consideration of integrity only comes into play once significance has been established – because integrity is a function of how a building conveys its original significance through maintaining key associative features. As *National Register Bulletin 15* notes that "only after significance is fully established can you proceed to the issue of integrity" (U.S. Department of the Interior, 2002). As a result of this investigation, Building A, B, C, D, and E were not identified as significant under any of the applicable national or state criteria, as discussed above. Accordingly, an integrity analysis for the buildings is not required due to lack of historic significance. Furthermore, the Project Site buildings have been substantially altered, including substantial changes to building facades and overall appearance, as described in detail above in the architectural description and construction history. Aside from their location, even if an integrity analysis were appropriate, which it is not, none of these buildings would be found to possess sufficient integrity to be considered potentially eligible as historical resources.

IMPACTS ANALYSIS

Direct Impacts

Historic Architectural Resources

Building A, Building B, Building C, Building D, and Building E are the only current buildings on the Project Site, and were evaluated for the National Register, California Register, and local listing as part of this Report. Based on the above evaluation, the Buildings were found to be ineligible for listing in the National Register, California Register, and LAHCM and therefore do not qualify as historical resources under CEQA Guidelines Section 15064.5(a)(1) or (2), and do not warrant consideration under CEQA Guidelines Section 15064.5(a)(3). Accordingly, no further analysis of direct impacts on historic architectural resources qualifying as historical resources is required pursuant to CEQA.

Archaeological Resources

Archaeological resources meeting one or more National Register Criteria A-D, California Register criteria 1-4, or LAHCM criteria 1-4 qualify as historical resources under CEQA. Furthermore, archaeological resources not qualifying as historical resources shall be considered for their potential to qualify as unique archaeological resources. Review of previous investigations in the vicinity of the Project Site, as well as review of the prehistoric context for the area, provides an understanding of the potential for encountering prehistoric archaeological resources in the Project Site during Project construction. When completing analysis of subsurface archaeological site sensitivity, important factors to consider include elevation, soil conditions, proximity to water, proximity to raw materials, and ethnographic and historic information. It is also necessary to evaluate the historic land use and past development and disturbances on the Project Site in determining the possibility for the preservation of subsurface prehistoric archaeological materials.

As described in the prehistoric context section of this Report, the location of the prehistoric village of *Yaangna* has long been debated, and likely moved seasonally and over time as the rivers and springs changed and shifted, and resource availability changed. The current banks of the Los Angeles River are less than two miles from the Project Site, and the river was heavily exploited by prehistoric peoples over time and seasonally. In light of these activities over time in the general area in which the Project Site is located, there is potential for encountering subsurface prehistoric archaeological resources at the Project Site during construction ground disturbance activities. Although the Project Site has been subjected to nearly two centuries or more of residential and urban development, areas of older historic development tend to be less likely to disturb buried prehistoric sites which might be buried under the development itself or historic fill. Furthermore, as described in the historic context section of this Report, residential development was present on the Project Site prior to the current uses. The current single-story buildings that do not include basements on the Project Site may not have disturbed the remains of the earlier historic phase of development should it exist within the Project area. When the residential

structures were moved or razed in order to make way for the current buildings, there may have been remains of building foundations and associated features such as trash deposits, privies, wells, and other outbuildings which could be capped beneath the current building and paved parking lot. The presence of brick and other materials was also demonstrated in the upper layers of sediment on the Project Site by the geotechnical testing results which may also indicate the possibility that archaeological material are present. *Zanja* No. 8 is also depicted on maps adjacent and to the west of the Project Site, potentially within the mid-block alley. This resource therefore may be preserved under the alley pavement in a location where it could be encountered during off-site improvements in the vicinity of the Project Site such as utility, sidewalk, alley improvements, and the construction of the proposed ingress and egress points to the Project Site from the alley. For the purposes of this Project, the City of Los Angeles is treating the Zanja No. 8 as a "historical resource" under CEQA Guidelines Section 15064.5(a)(3). Furthermore, any archaeological resources encountered during Project ground disturbing activities have the potential to qualify as either historical resources or unique archaeological resources under CEQA.

Indirect Impacts

Indirect impacts were analyzed to determine if the Project would result in a substantial adverse change in the significance of adjacent or nearby historical resources (i.e. buildings identified as potentially eligible in a survey, determined eligible, or designated) meaning physical demolition, destruction, relocation, or alteration of any resources or their immediate surroundings such that their significance as historical resources would be materially impaired pursuant to CEQA Guidelines Section 15064.5 (b) (1). For example, potential indirect impacts may occur when a project is adjacent to a historical resource and alters a property's historic setting if that setting contributes to the eligibility of that adjacent resource. Or indirect impacts may occur if a project obstructs historically or architecturally significant primary views to and from an adjacent resource that contribute to its eligibility as a historical resource, or causes harmful construction vibration or noise to an adjacent resource in a manner that would cause a CEQA-defined material impairment. Indirect impacts can also occur if a new project is incompatible in scale, massing, materials or design with an adjacent historical resource such that its eligibility is substantially impaired.

Six historical resources listed in **Table 4** below were identified in the immediate vicinity of the Project Site within the area bounded by Grand to the northwest, West Olympic Boulevard to the northeast, South Hill Street to the southeast, and West 12th Street to the southwest (See **Figure 23** and **Table 4**). However, none of these resources are adjacent to the Project Site and none of these resources would be physically affected by the Project. Furthermore, none of these resources would be close enough to be affected by construction vibration or noise. While the Project's scale and massing would introduce a new prominent visual element to the Project vicinity, the Project is not adjacent to any historic architectural resources that qualify as historical resources and the Project's location, design, scale and massing would not affect the visual prominence, historic character or interrupt important views of any off-site resources. Furthermore, the existing built environment in the Project vicinity has been substantially altered by demolition, redevelopment and infill construction. These changes to the area's built environment have materially altered the original historic setting to the extent that neither the Project Site in its present state nor the

surrounding built environment are associated with any identified historical resources and do not contribute to their eligibility.

TABLE 4
PREVIOUSLY IDENTIFIED HISTORICAL RESOURCES LOCATED WITHIN THE IMMEDIATE VICINITY OF THE PROJECT SITE

Resource, Address, Description	Distance from Project Site	View of Project Site	Current CHR Status Code	Eligibility
Federal Reserve Bank of San Francisco, Los Angeles Branch (P-167316). 409 W. Olympic Boulevard Built in 1929 and designed in the Classical Moderne style by Parkinson & Parkinson, architects. (5 stories) Significant for architecture and economic/financial history. Period of Significance: 1929-1930	0.11 mi	Indirect	Eligible- OHP Property Number – 021282 NRHP: 84000843 1S	The property is listed in the National Register under Criterion C for its significance for local architecture and financial history.
AT & T Tower (P-189239) 1150 S Olive Street Built as the Occidental Life Insurance Tower in 1965. Designed in the International Modern style; William Pereira & Associates, architects. (32 stories; 453 ft) Period of Significance:1965-1968	0.12 mi	Indirect	6Z (NRHP)	The AT&T Tower, has been determined ineligible for the National Register but as it has not been previously evaluated at the state and/or local level it may be potentially eligible for its architecture (Criterion 3/3) at the state or local levels The AT&T Tower is a prominent building within the Project vicinity, as it is the tallest building within a half-mile of theProject Site. The AT&T tower was the second tallest building in the City upon its completion in 1965.
Mayan Theatre 1038 S. Hill Street Built in1927 in the Mayan Revival style; designed by Octavius Weller Morgan, architect. (WPA Project). Period of Significance: 1927-1942	0.12 mi	Indirect	LAHCM No. 460 (1989) 5S1 A/1/1, C/3/3	The Mayan Theatre is a LAHCM listed for its architecture and historic associations (1927-1942).
Belasco Theater 1046 S. Hill Street Built in 1926 in the Mediterranean Revival style by Morgan, Walls, and Clements, architects. Period of Significance: 1926	0.14 mmi	Indirect	LAHCM No. 476 (1990) 5S1 C/3/3	The Belasco Theater is listed as a LAHCM for architectural significance as a Mediterranean Revival style theater designed by prominent architects Morgan, Wall, and Clements. The Belasco Theatre is adjacent to the Mayan Theatre, also a designated LAHCM.

Resource, Address, Description	Distance from Project Site	View of Project Site	Current CHR Status Code	Eligibility
Joseph Basch Company Building 1031 S Hill Street Built in 1920 in the Gothic Revival style and designed by Walker and Eisen, architects. Commercial property associated with Los Angeles' entertainment industry (prop shop). Period of significance 1920 to 1930.	0.08 mi (448 ft.)	Indirect	3CS;5S3 Central City (SurveyLA) A/1/1	The Joseph Basch Building is potentially eligible for its historical association as a commercial property related to the entertainment industry (prop shop).
White Log Coffee Shop 1061 S Hill Street Built in 1933 and designed by architects Norstrom and Anderson. Represents a rare example of Mimetic commercial style in the downtown area. Period of Significance:1933	0.09 mi (500 ft.)	Indirect	3CS;5S3 Central City (SurveyLA) A/1/1; C/3/3	The White Log Coffee Shop is potentially eligible for its history and architecture.

Cumulative Impacts

A cumulative impacts analysis for historic architectural resources evaluates whether impacts of a project and related projects, when taken as a whole, would be considerable or would compound or increase environmental impacts on historical resources. As discussed above, buildings on the Project Site are not historical resources subject to direct impacts of the Project. Moreover, the six off-site buildings that are designated as historical resources within a quarter-mile radius of the Project Site lie between approximately 250 feet to 500 feet in distance from the Project Site, and they are separated from the Project Site by intervening development. Therefore, the Project would have no direct impacts on those six off-site buildings and could not contribute to direct cumulative impacts on these resources. Furthermore, there are no related projects currently proposed for the six off-site buildings and therefore, no direct impacts to these historical resources from related projects would occur.

Vulnerability of the six off-site historical resources to indirect impacts could potentially occur due to immediately adjacent development that may alter their surroundings that materially contribute to the eligibility of those historical resources. Because of the Project's distance from the historical resources and intervening development, however, the Project would not alter the immediate surroundings of those resources and as discussed above, and the Project would not have an indirect impact on historical buildings.

From most locations and lower elevations, the Project would not share a common viewshed with other historical resources or most of the related projects in the Project vicinity. However, three proposed new developments across from the Project Site would contribute with the Project to impacts on views of tall high-rise buildings, such as the AT&T Center, a 32-story tower historical resource in the Project vicinity, from more distant locations. The related projects include the 60 story DTLA South Park project - Mack Urban Site 2, caddy corner to the Project Site; the 51 story DTLA South Park project - Mack Urban Site 3, across the street from the Project Site; and the 11th and Hill, 63 story project at 11th Street and Hill Street. These projects, along with the Project would create a cluster of taller buildings in the Project vicinity that would be visible to the north of the AT&T Center that due to its height can be seen from more distant locations. However, the northerly frontage is not the primary view of the AT&T Center and main full views of the AT&T Center would remain from the west, south, and east. Therefore, this cluster of related projects would only result in one view of this scenic resource being partially obstructed, and would not adversely obstruct historically or architecturally significant primary views to and from an adjacent resource that contributes to its eligibility as a historical resource, or be incompatible in scale, massing, materials or design with an adjacent historical resource such that its eligibility is substantially impaired.

Impacts related to archaeological resources qualifying as historical resources under CEQA are in most cases site-specific and, as such, are assessed on a project-by-project basis. Many of the related projects would require excavation that could potentially expose or damage archaeological resources potentially qualifying as historical resources, including portions of the *Zanja*. However,

the related projects are also located in highly developed urban areas with sites that have been previously disturbed. The potential to encounter and cause a significant impact on archaeological resources exposed at the surface is limited. Further, in association with CEQA review, and depending on the depth of excavation and sensitivity of respective sites, mitigation measures including avoidance and preservation in place or other treatment would be required for related projects that have the potential to cause significant impacts to undiscovered (subsurface) archaeological resources qualifying as historical resources under CEQA and would reduce significant impacts. This review would also include research to identify the location of the *Zanja* and if the potential for significant impacts were identified, implementation of mitigation measures would be required, including avoidance and preservation in place, or other treatment to be implemented when encountering the *Zanja* which would reduce significant impacts. With such mitigation implemented where and if warranted, and given the linear extent of the *Zanja* Conduit System, cumulative impacts from related projects are not expected to materially impair the significance of the resource and the Project would, in any event, with appropriate mitigation incorporated, not result in any incremental effects on the *Zanja* relative to any impacts on the *Zanja* that could be caused by one or more related projects.

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RECOMMENDATIONS

Historical Architectural Resources

Based on analysis of the SCCIC records search, archival research, pedestrian survey results and evaluation of Buildings A, B, C, D & E against the applicable federal, state and local eligibility criteria, no potentially eligible historic architectural resources were identified within the Project Site. Because there are no historical resources on the Project Site, no historical resources would be directly impacted by the Project. Furthermore, none of the historical resources identified in the Study Area are adjacent to the Project and no off-site historical resources would be indirectly impacted or materially impaired by the Project.

Archaeological Resources

As a result of the SCCIC records research and archaeological resources survey conducted for the Project, no archaeological resources have been identified within the Project Site, however the *Zanja* Conduit System branch *Zanja* No. 8 is mapped as located adjacent to the westof the Project Site within the mid-block alley. Historic aerial photographs and Sanborn Maps review indicate that the Project Site was developed and used for residential purposes in the late 19th century. Beginning in the early-20th century, the residential dwellings were demolished and replaced with the current building structures. The buildings that are currently present within the Project Site do not contain basements, and the construction of these buildings would not have likely destroyed any potential subsurface remnants associated with the residential dwellings that were constructed in the late 19th century, if any such remnants do exist. Additional archival research indicates that *Zanja* No. 8 once was present at unknown depth, to the immediate west of the Project Site in what is presently the adjacent alley. The exact location of the *Zanja* and whether, if it still exists, portions remain intact, is not known.. The geotechnical report prepared for the Project indicates that the Project Site is underlain by 7 to 9.5 feet of historic fill, which likely represents a historic disturbance layer. Such layers are unlikely to represent imported fill but instead be the result of historic development and demolition and can contain historic period archaeological resources. Project excavation is planned to extend 64-feet in depth and would impact both the historic fill layer as well as the native soils beneath which have the potential to contain prehistoric and/or historic archaeological resources which could qualify as historical resources or unique archaeological resources under CEQA. The following mitigation measures are recommended to reduce impacts to such resources.

Given the low degree of past disturbance within the Project Site underneath the first several feet below the ground's surface, and the potential to encounter intact buried archaeological resources, that qualify as historical resources or unique archaeological resources under CEQA, the following recommendations are provided to help reduce or avoid potential adverse effects on previously unknown archaeological resources and human remains that could be discovered during Project ground disturbing activities.

- Prior to the issuance of a demolition permit, the Applicant shall retain a qualified Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (qualified Archaeologist) to oversee an archaeological monitor who shall be present during construction activities on the Project Site such as demolition, clearing/grubbing, grading, trenching, or any other construction excavation activity associated with the Project. The activities to be monitored shall also include off-site improvements in the vicinity of the Project Site, such as utility, sidewalk, or road improvements. The monitor shall have the authority to direct the pace of construction equipment in areas of higher sensitivity. The frequency of monitoring shall be based on the rate of excavation and grading activities, the materials being excavated (younger sediments vs. older sediments), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered. Full-time monitoring may be reduced to part-time inspections, or ceased entirely, if determined adequate by the qualified Archaeologist. Prior to commencement of excavation activities, an Archaeological Sensitivity Training shall be given for construction personnel. The training session, shall be carried out by the qualified Archaeologist, will focus on how to identify archaeological resources that may be encountered during earthmoving activities, and the procedures to be followed in such an event.

- In the event that historic (e.g., bottles, foundations, , refuse dumps/privies, railroads, etc.) or prehistoric (e.g., hearths, burials, stone tools, shell and faunal bone remains, etc.) archaeological resources are unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A 50-foot buffer shall be established by the qualified Archaeologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by Project construction activities shall be evaluated by the qualified Archaeologist. If a resource is determined by the qualified Archaeologist to constitute a "historical resource" pursuant to CEQA Guidelines Section 15064.5(a) or a "unique archaeological resource" pursuant to Public Resources Code Section 21083.2(g), the qualified Archaeologist shall coordinate with the Applicant and the City to develop a formal treatment plan that would serve to reduce impacts to the resources. If any prehistoric archaeological sites are encountered within the project area, consultation with interested Native American parties will be conducted to apprise them of any such findings and solicit any comments they may have regarding appropriate treatment and disposition of the resources. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and Public Resources Code Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If in coordination with the City, it is determined that preservation in place is not feasible, appropriate treatment of the resource shall be developed by the qualified Archaeologist in coordination with the City and may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any archaeological material collected shall be curated at a public, non-profit institution with a research interest in the materials, if such an institution agrees to accept the material. If no institution accepts the archaeological

material, they shall be donated to a local school or historical society in the area for educational purposes.

- Prior to the release of the grading bond, the qualified Archaeologist shall prepare a final report and appropriate California Department of Parks and Recreation Site Forms at the conclusion of archaeological monitoring. The report shall include a description of resources unearthed, if any, treatment of the resources, results of the artifact processing, analysis, and research, and evaluation of the resources with respect to the California Register of Historical Resources and CEQA. The report and the Site Forms shall be submitted by the Project applicant to the City, the South Central Coastal Information Center, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the development and required mitigation measures.

- If human remains are encountered unexpectedly during implementation of the Project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). The MLD may, with the permission of the land owner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the land owner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

- Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendants and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

Zanja Conveyance System

Research indicates that *Zanja No. 8* is mapped within the alley near the western boundary of the Project Site. As previously indicated, the City has determined to treat *Zanja*-related resources as "historical resources" as defined in *CEQA Guidelines* Section 15064.5(a)(3) for purposes of this Project.

- Although, Project disturbance planned for ingress and egress to the Project Site and ancillary construction for utilities and other infrastructure related to the Project would result in mainly surficial excavation, in the event the *Zanja* is located as mapped, such construction has the potential to encounter the *Zanj*a. The following recommendations would reduce impacts to the Zanja. In the event that *Zanja* Conduit System-related infrastructure is unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. An appropriate exclusion area that takes into account the linear nature of the resource shall be established by a qualified Archaeologist, meeting the Secretary of the Interior Standards in Archaeology. Construction activities shall not be allowed to continue within the exclusion area until directed by the qualified Archaeologist in consultation with the City, but work shall be allowed to continue outside of the exclusion area. The qualified Archaeologist shall coordinate with the Applicant and the City's Office of Historic Resources to develop a formal treatment plan for the resource that would serve to mitigate impacts to the resource(s). The treatment measures listed in California Code of Regulations Section 15126.4(b) shall be considered when determining appropriate treatment for the *Zanja* resource. As noted in California Code of Regulations Section 15126.4(b)(A), preservation in place (i.e., avoidance) is the preferred manner of mitigating impacts to archaeological sites. If in coordination with the City, it is determined that preservation in place is not feasible, other treatment measures for the resource shall be developed by the qualified Archaeologist in coordination with the Office of Historic Resources and with final approval by the City. Treatment would be designed to address the resource's eligibility under Criterion 1 (significant events) Criterion 2 (important persons), Criterion 3 (type, period, region or method of construction), and 4 (scientific data) and may include implementation of data recovery excavations to remove the resource along with subsequent laboratory processing and analysis; a commemoration program that includes the development of an interpretive exhibit/display or plaque at the Project Site; and/or other public educational and/or interpretive treatment measures determined appropriate by the Qualified Archaeologist in consultation with the City's Office of Historic Resources. Any associated artifacts collected that are not made part of the interpretation/education collected may be curated at a public, non-profit institution with a research interest in the materials, if such an institution agrees to accept the material. If no institution accepts the material, it shall be offered for donation to a local school or historical society in the area for educational purposes.

- The qualified Archaeologist shall prepare a final report and appropriate California Department of Parks and Recreation Site Forms for the *Zanja* resource. The report shall

outline the treatment measures implemented, include a description of the resources unearthed, results of any artifact processing, analysis, and research. The report and the Site Forms shall be submitted by the qualified Archaeologist to the City and the South Central Coastal Information Center.

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Appendix A
Personnel



Monica Strauss, RPA

Director, Southern California Cultural Resources Group

EDUCATION

M.A., Archaeology, California State University, Northridge

B.A., Anthropology, California State University, Northridge

AA, Humanities, Los Angeles Pierce College

20 YEARS EXPERIENCE

SPECIALIZED EXPERIENCE

Treatment of Historic and Prehistoric Human Remains

Archaeological Monitoring

Complex Shell Midden Sites

Groundstone Analysis

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists (RPA), #12805

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

QUALIFICATIONS

Exceeds Secretary of Interior Standards

CA State BLM Permitted

Monica has successfully completed dozens of cultural resources projects throughout California and the greater southwest, where she assists clients in navigating cultural resources compliance issues in the context of CEQA, NEPA, and Section 106. Monica has extensive experience with archaeological resources, historic buildings and infrastructure, landscapes, and Tribal resources, including Traditional Cultural Properties. Monica manages a staff of cultural resources specialists throughout the region who conduct Phase 1 archaeological/paleontological and historic architectural surveys, construction monitoring, Native American consultation, archaeological testing and treatment, historic resource significance evaluations, and large-scale data recovery programs. She maintains excellent relationships with agency staff and Tribal representatives. Additionally, Monica manages a general compliance monitoring team who support clients and agencies in ensuring the daily in-field compliance of overall project mitigation measures.

Relevant Experience

Orange County, Saddle Crest Homes Project EIR, Orange County, CA. Cultural Resources *Project Director.* The Saddle Crest project includes the development of 65 residential homes on an approximately 113.7-acre site. Monica managed the preparation of a Cultural Resources EIR section as well as a Phase 1 archaeological resources assessment. As part of the Phase 1 archaeological resources assessment, a literature review, a pedestrian survey, and Native American outreach were undertaken to meet CEQA compliance requirements.

Irvine Ranch Water District, Baker Treatment Plant, Orange County, CA. *Cultural Resources Principal Investigator*. ESA was retained by the Irvine Ranch Water District to provide environmental compliance services. In support of an EIR for the upgrade of the IRWD's Baker Treatment Plant near Lake Forest, ESA cultural resources staff conducted a Phase I Cultural Resources Assessment. Monica directed the archival research, a series of pedestrian surveys, and oversaw the preparation of Phase I Cultural resources Technical reports and the cultural resources section of the EIR.

Topock Compressor Station Remediation CEQA Services. Mohave County, AZ and San Bernardino County, CA. *Cultural Resources Project Director*. Monica is overseeing the preparation of cultural resources EIR sections and is providing project support to the California Department of Toxic Substances Control (DTSC), including facilitating Native American involvement. DTSC provides oversight of the site investigation and cleanup activities for the Pacific Gas and Electric Company (PG&E) Topock Gas Compressor Station, located in San Bernardino County, 15 miles southeast of Needles, California. Groundwater samples taken under and near the Station were found to be contaminated with hexavalent chromium and other chemicals as result of past disposal activities. Soils contamination is also present at the site, requiring investigation and cleanup. These activities are highly scrutinized by the regional Native American Tribes because the area has important cultural and religious significance. ESA is currently preparing an EIR for soil investigations and will be conducting CEQA

evaluations that tier off of the Program EIR for the Groundwater Remedy. Additional project-specific EIRs may be required for the final remedy, which is currently undergoing engineering design. ESA will provide these services as well as lead the Native American and public participation efforts.

Los Angeles Department of Water and Power, Path 46 Clearance Surveys, San Bernardino, CA. *Project Director*. ESA has been tasked by Los Angeles Department of Water and Power (LADWP) to conduct required surveys for the Path 46 Transmission Line Clearances Project. The project's objective is to restore required code clearances to the transmission conductors, which will be accomplished by grading the ground surface underneath the transmission lines to achieve required height consistency. The work is being conducted in compliance with BLM guidelines and federal laws and statutes. Biological, archaeological, and paleontological resource surveys are currently being conducted for the 77 proposed grading areas, staging areas, and roads. Reports will be written documenting the results of the surveys and providing recommendations on the areas for access, staging areas, and soil distribution that would have the least amount of impacts on natural resources. Monica is providing support to LADWP in their coordination with the BLM, including providing oversight of map preparation, field surveys, and preparation of pre-field research designs and post-field technical reports.

Ballona Wetlands Restoration EIR, Los Angeles County, CA. *Cultural Resources Project Director*. As part of the development of the restoration plan for the Ballona Wetlands, the ESA project team characterized existing conditions that included water and sediment sampling and analysis. The water and sediment quality sampling was performed to develop and evaluate potential restoration alternatives, and to develop a conceptual plan. The ESA project team compiled existing data on and conducted additional sampling for water and sediment to assess potential effects on the proposed wetland restoration habitat from the use of urban runoff and tidal in-flow from Ballona Creek. These data were used to complete a baseline report and restoration alternatives assessment. Monica is assisting the CSCC in fulfilling Army Corps of Engineers requirements under Section 106 of the National Historic Preservation Act. In addition, she is coordinating with Tribal members and is overseeing a team of resource specialists who are compiling cultural resources technical in preparation of the EIR's Cultural Resources section.

Los Angeles Department of Water and Power La Kretz Innovation Campus, Los Angeles County, CA. *Project Director.* The project involved the rehabilitation of the 61,000-square-foot building located at 518-524 Colyton Street, demolition of the building located at 537-551 Hewitt Street, and construction of an open space public plaza and surface parking lot, and involved compliance with Section 106 of the National Historic Preservation Act and consultation with the California State Historic Preservation Officer. ESA is providing archaeological monitoring and data recovery services and is assisting LADWP with meeting their requirements for Section 106 of the National Historic Preservation Act. Monica is providing oversight to archaeological monitors and crew conducting resource data recovery and laboratory analysis, and is providing guidance to LADWP on meeting Section 106 requirements.

Los Angeles Department of Water and Power Lone Pine Landfill Paleontological Resources Recovery, Inyo County, CA. *Cultural Resources Project Director*. At the request of LADWP, ESA responded to a discovery of large mammal bone at the Lone Pine Landfill in an area where borrow materials were being excavated.

ESA conducted geologic map research and recovered what was identified as a mammoth tusk. The tusk was stabilized, prepared for curation, and transported to a storage facility. Monica provided senior oversight of the paleontological resources recovery team and conducted paleontological resources sensitivity training and guidance to landfill staff in the event additional material are encountered.

City of Los Angeles Recreation and Parks, Hansen Dam Skate Park Project, Los Angeles County, CA. *Cultural Resources Principal Investigator*. ESA prepared a joint EA and IS/MND for the Los Angeles Department of Recreation and Parks in coordination with the U.S. Army Corps of Engineers (Corps) for a proposed skate park facility within the Hansen Dam Recreation Area. Monica managed a Phase I Cultural resources Study, coordinated with the Army Corps of Engineers and provided senior review for the EA/IS/MND cultural resources section.

Los Angeles Unified School District, Central Los Angeles High School #9. Los Angeles, CA. *Project Director.* ESA contributed to Data Recovery Report sections for Los Angeles Unified School District's Central High School #9, constructed in downtown Los Angeles. Between 2004 and 2009, Monica led a team of archaeological staff of ten who conducted archaeological monitoring and data recovery of archaeological materials in connection with the 19th century Los Angeles City Cemetery. She coordinated with the Los Angeles County Coroner and office of Vital Statistics to obtain disinterment permits and developed a mitigation plan incorporating components related to the future disposition of remains, artifact curation, and commemoration. She directed an extensive historical research effort to identify the human remains, and at the request of the client, participated in public outreach and coordination with media.

Bureau of Land Management, On-Call Cultural Resources Services, Riverside County, CA. *Project Manager.* ESA has been retained by the Bureau of Land Management under an on-call contract to provide cultural resource services including compliance monitoring for projects under Bureau of Land Management (BLM) jurisdiction. Monica managed a number of projects for the BLM (Palm Springs South Coast Field Office) providing a wide range of cultural resources services for solar projects and other projects taking place on BLM lands in compliance with Section 106 and specified BLM protocols. Services that she and her staff provide under this contract include compliance monitoring and peer review, Phase I archaeological resources surveys, resource evaluations, the preparation of reports, and Native American consultation. Projects completed under this contract include Dos Palmas Phase I Survey and Archaeological Monitoring, National Monument Phase I Survey, Windy Pointe Archaeological Monitoring, and Fast and the Furious Phase I Survey.



Sara Dietler

Archaeologist

EDUCATION

B.A., Anthropology, San Diego State University

19 YEARS EXPERIENCE

CERTIFICATIONS/ REGISTRATION

California BLM Permit, Principal Investigator, Statewide

Nevada BLM Permit, Paleontology, Field Agent, Statewide

PROFESSIONAL AFFILIATIONS

Society for American Archaeology (SAA)

Society for California Archaeology (SCA)

Sara is a senior archaeology and paleontology lead with 20 years of experience in cultural resources management in Southern California. As a senior project manager, she manages technical studies including archaeological and paleontological assessments and surveys, as well as monitoring and fossil salvage for many clients, including public agencies and private developers. She is a cross-trained paleontological monitor and supervisor, familiar with regulations and guidelines implementing the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and the Society of Vertebrate Paleontology guidelines. She has extensive experience providing oversight for long-term monitoring projects throughout the Los Angeles Basin for archaeological, Native American, and paleontological monitoring compliance projects and provides streamlined management for these disciplines.

Relevant Experience

Los Angeles Unified School District (LAUSD) Central Los Angeles High School #9; Los Angeles, CA. *Senior Project Archaeologist & Project Manager*. Sara conducted on-site monitoring and investigation of archaeological sites exposed as a result of construction activities. During the data recovery phase in connection with a 19th century cemetery located on-site, she participated in locating of features, feature excavation, mapping, and client coordination. She organized background research on the cemetery, including genealogical, local libraries, city and county archives, other local cemetery records, internet, and local fraternal organizations. Sara advised on the lab methodology and setup and served as project manager. Sara was a contributing author and editor for the published monograph, which was published as part of a technical series, “Not Dead but Gone Before: The Archaeology of Los Angeles City Cemetery.”

Downtown Cesar Chavez Median Project, City of Los Angeles, CA. *Project Manager*. Sara assisted the City of Los Angeles Department of Public Works Bureau of Engineering with a Local Assistance Project requiring consultations with Caltrans cultural resources. Responsible for Caltrans coordination, serving as contributing author and report manager for required ASR, HPSR, and HRER prepared for the project.

Elysian/USC Water Recycling Project Initial Study/Environmental Assessment, Los Angeles, CA. *Project Manager.* Sara worked on the Initial Study/Mitigated Negative Declaration and an Environmental Assessment/Finding of No Significant Impact to construct recycled water pipelines for irrigation and other industrial uses serving Los Angeles Department of Water and Power customers in downtown Los Angeles, including Elysian Park. The U.S. Environmental Protection Agency is the federal lead agency.



Vanessa N. Ortiz, MA, RPA

Cultural Resources Specialist

EDUCATION

M.A., Anthropology emphasis Archaeology, California State University, Los Angeles

B.A. Anthropology, California State University, Los Angeles

7 YEARS EXPERIENCE

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists #30984230

Society for American Archaeology

California Cultural Resources Preservation Alliance

Society for California Archaeology

Lambda Alpha Honors Society

Vanessa is an archaeologist with over seven years of documentation, records searches, survey, excavation, and monitoring experience. She is cross trained in archaeology and paleontology. She has worked extensively throughout California, with particular experience in the context of the Mojave and California Great Basin, prehistoric food processing sites, and historic artifacts.

Relevant Experience

City of Beverly Hills Metro Purple Line Extension, Beverly Hills, CA. *Compliance Coordinator.* ESA is retained by the City of Beverly Hills to conduct general compliance monitoring during the advanced utilities relocation phase of construction for the segment of the Metro Purple Line Extension Project located in the City of Beverly Hills. Vanessa oversees ESA monitors, prepare weekly reports and 3-week look-ahead projections based on estimated contractor planned activities. As needed, she issues violations in the event a non-compliance issue is identified. ESA's primary objective is to assist contractors in avoiding non-compliance issues through thorough observation and open communication.

Ballona Wetland Restoration, Playa Del Rey, CA. *Archaeologist.* As part of the development of the restoration plan for the Ballona Wetlands, the ESA project team characterized existing conditions that included water and sediment sampling and analysis. The water and sediment quality sampling was performed to develop and evaluate potential restoration alternatives, and to develop a conceptual plan. The ESA project team compiled existing data on and conducted additional sampling for water and sediment to assess potential effects on the proposed wetland restoration habitat from the use of urban runoff and tidal in-flow from Ballona Creek. These data were used to complete a baseline report and restoration alternatives assessment. Vanessa assisted in survey, data recovery and artifact analysis.

Los Angeles Department of Water and Power (LADWP), Path 46 Clearance Surveys, San Bernardino, CA. *Archaeologist*. ESA has been tasked by LADWP to conduct required surveys for the Path 46 Transmission Line Clearances Project. The project's objective is to restore required code clearances to the transmission conductors, which will be accomplished by grading the ground surface underneath the transmission lines to achieve required height consistency. The work is being conducted in compliance with BLM guidelines and federal laws and statutes. Biological, archaeological, and paleontological resource surveys are currently being conducted for the 77 proposed grading areas, staging areas, and roads. Pending reports will document results of the surveys and provide recommendations for minimally invasive access areas, staging areas, and soil distribution. Vanessa provided field surveys and documentation of archaeological sites for submission to the California State Parks.

Los Angeles Department of Water and Power (LADWP), Scattergood Olympic Transmission Line (SOTL) Cultural Resources Monitoring, Los Angeles, CA. *Archaeologist*. LADWP is constructing and will operate approximately 11.4 miles of new 230 kilovolt (kv) underground transmission line. LADWP installed 55 vaults and underground conduit for the SOTL Project. ESA provided cultural resources services, including archaeological, Native American, and paleontological monitoring, to fulfill the requirements of the Project EIR mitigation measures for cultural resources. Reports documenting the monitoring findings were submitted at the end of the project. Vanessa provided oversight and scheduling to monitors and assisted in preparing the final report.

California High Speed Rail, Fresno, CA. *Archaeological Monitor.* ESA was retained as a sub-consultant to the Tutor Perini Zachary Parsons Joint Venture. The project consisted of pre-construction surveys for biological and cultural resources, compliance monitoring during construction, and compliance tracking and reporting. Approximately 29 miles in length, the project also included both biological and cultural resources such as the historic Chinatown in downtown Fresno, vernal pool and seasonal wetland habitat and crossings of the San Joaquin and Fresno Rivers. Vanessa provided archaeological monitoring for the Project during construction.

Los Angeles Department of Water and Power, La Kretz Innovation Campus Project, Los Angeles, CA. *Archaeological Monitor and Lab Technician.* ESA provided archaeological monitoring in connection with the La Kretz Innovation Campus Project located in downtown Los Angeles. ESA conducted construction worker cultural resources sensitivity training; archaeological monitoring; and prepared a monitoring report. The Project involved the rehabilitation of the 61,000-square-foot building located at 518-524 Colyton Street, the demolition of the building located at 537-551 Hewitt Street, and the construction of an open space public plaza, and surface parking lot, and involved compliance with Section 106 of the National Historic Preservation Act and consultation with the California State Historic Preservation Officer. Vanessa provided monitoring for the duration of the Project as well as a lab technician during the curation of the artifacts recovered from the Project and co-authored the final cultural report.

Los Angeles Department of Water and Power (LADWP), Silver Lake Reservoir Complex (SLRC) Storage Replacement and River Supply Conduit 1A, Los Angeles County, CA. *Archaeological and Paleontological Monitor*. ESA is providing archaeological and paleontological monitoring for SLRC Storage Replacement and River Supply Conduit 1A Project. As part of this task, ESA conducted construction worker cultural resources sensitivity training and archaeological and paleontological monitoring. A final monitoring report will be prepared at the end of construction. Vanessa was the field monitor on this project.



Christian Taylor

Senior Architectural Historian

EDUCATION

Master's Degree, Historic Preservation, University of Southern California, Los Angeles

B.A., History, University of Oklahoma, Norman

5 YEARS EXPERIENCE

Christian Taylor is a historic resources specialist with academic and professional experience in assessing historic structures and contributing to California Environmental Quality Act (CEQA)-level documents. Throughout the course of his career, Christian has developed an interest in Los Angeles' industrial, economic, and transportation related history. Christian continues to hone his skills in management of rehabilitation and restoration projects, preparation of historic contexts, the use of non-invasive material investigation methods and advanced methods of documentation, and historic resource assessments.

Christian has completed and co-authored a wide range of architectural investigations including historic resources assessment and impacts analysis reports for compliance with CEQA, character-defining features reports, plan reviews, investment tax credit applications, Section 106 significance evaluations, and HABS/HAER documentations. He has also performed extensive research, survey work, and prepared landmark and preliminary assessment reports as a part of ESA's On-Call Historic Preservation Contract with the City of Santa Monica.

Representative Experience

344 8th Street, Long Beach, CA. *Architectural Historian.* ESA prepared a historic resources analysis for the 344 8th Street project. This project included a physical inspection of a small corner store constructed in the early twentieth century. The building was recorded and evaluated on Department of Parks and Recreation (DPR) record forms based on relevant historic contexts surrounding its development. Recommendations for restoration treatments of the building were provided as a result of the investigation. Chris was responsible for conducting the site survey, archival research and preparing the DPR forms and restoration treatment recommendations.

929 E. 2nd Street IS/MND, Los Angeles, CA. *Architectural Historian.* ESA prepared an IS/MND for the 929 E. 2nd Street project. The project required a Historic Resources Assessment to evaluate the existing two-story industrial building for individual eligibility at the local, state, and national level. The results of the evaluation were that the former Challenge Creamery Association Building did not appear individually eligible under the applicable local, state, or national criteria. The building is located within the boundaries of a potential historic district identified by SurveyLA. The assessment of the property included a review of the potential district and its contributors. A district description was developed and the building was found eligible as a contributor. The proposed project was then reviewed for potential impacts to the district, nearby contributors and individual resources, and the contributor within the project area. Mitigation measures and project alterations were recommended to the client as a result of the investigations. Chris conducted the HRA and prepared the Historic Technical Report for the IS/MND.

Boething Tree Farms EIR, 23475 Long Valley Road, Los Angeles, CA. *Architectural Historian*. ESA prepared an EIR for the Boething Tree Farms project in Los Angeles. The project included redevelopment of the site occupied by a single-family residence and nursery business established in 1956 by self-taught horticulturalist John Boething. ESA conducted a Historic Resources Assessment as part of the EIR, which included a site survey and evaluation of the site, resulting in a recommendation for ineligibility as a historical resource. The project was then evaluated for potential impacts to any historical resources identified in the surrounding area. The report found no direct or indirect impacts to historical resource. The nearby Leonis Adobe, Calenda Ostronic Residential Historic District and Los Encinos Residential Historic District would have no significant views of the project site and each of the historical resources would remain eligible despite project completion. Chris was responsible for preparing the HRA and Historic Technical Report for the EIR.

670 Mesquit Street, Los Angeles, CA. *Architectural Historian*. ESA prepared an IS/MND for the 670 Mesquit Street project in Los Angeles. As part of the IS/MND, a Historic Resources Assessment was prepared to determine if the project site was eligible for listing as a historical resource. The project site, originally occupied by the Los Angeles Ice and Cold Storage Company, was determined to lack integrity and therefore, ineligible for listing. Although the core of the building on the project site retained elements of the historic cold storage building, the facility was seismically upgraded resulting in significant alterations to its exterior. In its current condition, the facility does not convey its historical associations. The project was also evaluated to determine if it would result in any potential impacts to nearby historic resources. Located south of the project site is the Seventh Street Bridge, which is listed on the California Register of Historical Resources, and eligible for the National Register of Historic Places. The project would alter the setting of the bridge; however, the impact was determined to be less than significant. Chris was responsible for preparing the Historic Resources Assessment & Historic Technical Report for the IS/MND.

Burbank Bob Hope Airport, 2627 N. Hollywood Way, Burbank, CA. *Architectural Historian*. ESA evaluated the Burbank Airport for eligibility as a historic district, recommending ineligibility due to a lack of integrity. However, it was determined that a number of buildings on the property were individually significant. To make this determination, ESA architectural historians prepared a context covering the airport's historic development and its use by the Lockheed Martin Aircraft Company. ESA staff developed an airplane hangar property type, which was used to evaluate eleven of the airport's individual structures for architectural significance. The report evaluated three different options for the terminal replacement project, identifying the preferred arrangement with the least impact on identified historic resources. Chris assisted in conducting the site survey, archival research and preparation of the historic resource assessment and corresponding EIR section.



Ashley Brown

Senior Architectural Historian

EDUCATION

M.A. Public History: Historic Preservation, Middle Tennessee State University

B.A. History, California University of Pennsylvania

5 YEARS EXPERIENCE

RECOGNITIONS

Minong, Traditional Cultural Property National Register Nomination – Agency: Grand Portage Band of Lake Superior Chippewa

Grand Portage CCC Indian Division Bridge – Agency: National Park Service and Grand Portage Band of Lake Superior Chippewa

Ashley Brown is a senior architectural historian with more than five years of academic and professional experience preparing documentation to address the restoration, rehabilitation, and adaptive reuse of historic properties—including historic structures reports, preservation and interpretation plans, and National Register of Historic Places nominations. Ashley also has experience contributing to California Environmental Quality Act CEQA-level documents. She is adept at developing and implementing historic resources surveys to address architectural, building, and cemetery condition assessments utilizing such programs ArcGIS and Survey123. Ashley continues to expand her knowledge of Southern California history by conducting primary source research and developing historic contexts.

Relevant Experience

Los Angeles Department of Water and Power (LADWP), East Hollywood District Yard Cultural Resources Technical Report, Los Angeles, CA. *Architectural Historian and Report Author*. ESA prepared a Cultural Resources Assessment for the Los Angeles Department of Water and Power (LADWP) Distribution Yard No. 2, which was built by the Bureau of Power and Light in 1926. Ms. Brown evaluated the District Yard for architectural and historic significance at the local, state, and federal levels.

Maguire Properties, 755 Figueroa Street Cultural Resources Technical Report, Los Angeles, CA. *Cultural Resources Specialist*. Ms. Brown authored project specific historic context for the 755 Figueroa Street Cultural Resources Report and identified archaeological potential for Project site. The Report was used in a MND for two new residential tower units in downtown Los Angeles.

Sportsmen's Lodge Hotel Historic Resources Assessment, Studio City, Los Angeles, CA. *Project Manager and Report Author.* Ms. Brown evaluated the Sportsmen's Lodge Hotel, which was identified by SurveyLA as part of the Sportsmen's Lodge Historic District for historic and architectural significance at the local, state, federal levels. The hotel was designed in the Mid-Century Modern style by James D. Barrington and was identified for its historical associations with the Sportsmen's Lodge.

3600 Wilshire Boulevard Historic Resource Assessment and Impacts Analysis, Los Angeles, CA. *Project Manager and Report Author.* Ms. Brown evaluated 3600 Wilshire Boulevard, a Modern style office building designed by master architect Robert Tyler, of Welton Becket and Associates for significance at the local, state, federal levels. Included in this report was CEQA Impacts Analysis. This CEQA document was used to support a MND.

Appendix B
Sacred Lands File Search

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

November 17, 2017

Sara Dietler
ES Associates

Sent by E-mail: sdietler@esassoc.com

RE: Proposed 1045 S. Olive Street (DPCRH05.EP) Project, City of Los Angeles; Los Angeles USGS Quadrangle, Los Angeles County, California

Dear Ms. Dietler:

A records search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

Native American Heritage Commission
Native American Contact List
Los Angeles County
11/17/2017

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chariperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
gabrielenoindians@yahoo.com

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 1045 S. Olive Street Project, Los Angeles County.

Appendix C
Building Permits

APPENDIX C, TABLE 1

LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY BUILDING PERMITS[4]

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
Building A	02/14/1929	Permit #4097	Winslow B. Felix	No architect listed	M. D. Durbin	$60.00	Address: 1055-1057 S. Olive Street. Blocks 10-11. Auto display room; One story building; 40' x 120' Ft.; "Cut 1 opening through 17" brick wall. Opening to be 6'6" wide and 8' high. Install 6" 15' ½ I beam. Length of I beam to be 8' 6", plain to be 12" by ¼". Install underwriters fire doors on each side of opening."
Building A	05/07/1929	Permit #12329	Ida May Garland	Mooyan Walls & Clements	none	$1,200.00	Address: 1057 S. Olive Street. Garage and sales room; One story building; 50' x 120' Ft. "Move front wall back 5'-0" on account of Olive Street widening and bond to old work."
Building A	03/31/1938	Permit #8765	Ida May Garland	Stiles O. Clements	Edwin Rudolph	$800.00	Address: 1057-59 S. Olive Street. Blocks 10-11. Store. One story building; 50' x 150' Ft.; "Install new transom sash and trim – new bulkhead facing – Paint exterior street front walls."
Building A	01/28/1966	Permit #17924	Grover T. Garland	Chambers & Hibbard	Hanko Corp.	$500.00	Address: 10557 S. Olive Street. Store. One story building; 50' x 152' Ft.; "repair east wall damaged by auto. Remove non-bearing part. as shown"
Building A	06/15/1981	Permit #25633	Lewis Berenzweig & Pauline Heidman		Christian V. Vilciu	$9,850.00	Address: 1057 S. Olive Street. Store. One story building; 50' x 150' Ft.; "Interior non-bearing partitions close two doors."
Building A	07/03/1987	Permit #69565*	Lew Berenzweis		RGA Construction	$12,000.00	Address: 1057 S. Olive Street. Retail Store. One story building; 50' x 145' Ft. "Phase I, Anchors only of division 88 RC II.
Building A	09/05/1989	Permit #02340*	Lou		Steve Notaro	$138,000.00	Address: 1057 S. Olive Street, Los Angeles

4 Documentation exists for all permits and certificates of occupancy listed in this table.

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
			Berenzweig				90015. Retail Store. One story building; 50' x 152' Ft.; "Full compliance with Division 88, RGA design."
Building A	01/28/1990	Permit #67131	Lou Berenzweig		DECOMA IND. INC	$12,400.00	Address: 1057 S. Olive Street. Retail Store. One story building; 52' x 132.5 Ft.; "FW/89/HO/2340 /S&E wall. Detail change – veneer, h/t braces."
Building A	07/18/1990	Permit #074447	Lew Berenzweig		DECOMA Industries	$7500.00	Address: 1057 S. Olive Street. Retail Store. One story building; 50' x 132.5' Ft.; "Move location of plywd x-wall bldg. A & post support; top conn. FW/89/HO/2339 & 2340."
Building A	06/14/1991	Permit #76498	Paulin Heideman & Lewis Berenzweig	Ruben S. Ojeda	Steve Notaro	$20,000.00	Address: 1057 S. Olive Street. Retail Store. One story building; 100' x 150' Ft.; "New plaster and metal façade and storefront."
Building A	02/11/1992	Permit #15851*	Lou Berenzweig		Decoma Industries	$8,000.00	Address: 1057 S. Olive Street. Retail. One story building; 52' x 132' Ft.; "Repair of damage trusses.@ lines."
Building A	02/11/1992	Permit #15851*	Lou Berenzweig		Decoma Industries	$8,000.00	Address: 1057 S. Olive Street. Retail. One story building; 52' x 132' Ft.; "Repair of damage trusses. @ lines 3, 4, & 5 of south building."
Building A	02/24/1995	Permit #35822	Rick Berenzweig	Dee Carawan	Decoma Industries	$30,000.00	Address: 1057 S. Olive Street. One story building; 50' x 152' Ft.; "Add office, kitchen, conference room inside exit. Retail, 1522 s. f. Tenant Improvement."
Building A	05/18/2001	Permit #01016-10000-06553*	Berenzweig, Richard Tr Richard Berenz		Decoma Industries	$	TR 1011 LT A, TR 62 unnumbered LT, Subdivision of Bloc 1; 50' x 152' Ft.; "T.I. work inclusive of openings in walls & finishes for showroom and a new office."
Building A	11/10/2015	Permit #150-10000-24108*	1045 Olive LLC		P R Construction INC	$226,000.00	Subdivision of block 70 or lot 1. Office & Retail.; "Interior alteration for showroom and office [non-structural interior walls]: Add partitions, restrooms, partition walls and finishes."
Building A	12/07/1928	Permit #33866	Winslow		G F Swanson	$250.00	Address: 1053-1057 S Olive Street. Storage and showroom for autos. One story building;

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
and B			Felix				40 x 115 Ft. “Cut opening 8’x8’ Ft. in between 1053 and 1054 place for cars on each side.”
Building A, B, and C	05/18/2001	Permit #01016-10000-06553	Berenzweig, Richard Tr Richard Berenz		Decoma Industries	$5,000.00	Address: 1057 S Olive Street. Retail. One story building; 50’ x 152’ Ft.; “T.I. work inclusive of openings in walls & finishes for showroom and a new office.”
Building B	11/01/1912	Permit #13765	Theo A. Simpson	H. C. Brown furnishes plans	H. C. Brown	$5,500.00	Address: 1053 S. Olive Street. Garage. One story building; 50’ x 150’ Ft.; 2’ Ft. concrete foundation. One chimney. One flue. One inlet. Brick construction. Concrete and tile floors. Wood and glass partitions, O.P. paper roofing. Vent shafts 4’ x 12’ Ft.; “Erection of building.
Building B	11/01/1912	Permit # 13767	Theo A. Simpson		H. C. Brown	$150.00	Address: 1053 S. Olive Street. Residential building demolition.
Building B	07/16/1917	Permit #3847	Merchants Hart Bank		J.F. Hall – Madin G	$2,400.00	Address: 1055 Olive Street. Garage. One story building; 50’ x 100’ Ft.; “Replace wood where burnt –off replace wood and glass partition, of S water closet repair fire door + window in rear. Repair to be made same as original.”
Building B	12/07/1928	Permit #33866	Winslow Felix		G. G. Swanson	$250.00	Address: 1053-57 S. Olive Street. Storage and show room for autos. One story building; 40’ x 115’ Ft.; “Cut opening 8’ x 8’ in between 1053 and 1057. Place show room on each side.”
Building B	02/14/1929	Permit #4097	Winslow B. Felix		M. D. Durbin	$60.00	Address: 1055-1057 S. Olive Street. Blocks 10-11. Auto display room; One story building; 40’ x 120’ Ft.; “Cut 1 opening through 17” brick wall. Opening to be 6’6” wide and 8’ high. Install 6” 15’ ½ I beam. Length of I beam to be 8’ 6”, plain to be 12” by ¼”. Install underwriters fire doors on each side of opening.”
Building B	10/31/1932	Permit #17663	Geos Hammel – H. M. Hilles			$100.00	Address: 1053 S. Olive Street. Public Garage. One story building; 50’ x 145’ Ft.; “Remove partition – install washroom shower

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
							+ alter dressing room – move office to other side of garage. All alter new walls to be T + G + ¼ glass (no other subdivision in this garage.)"
Building B	12/04/1934	Permit #16567	F. W. Braun Co.		Ted R. Cooper Co. Inc.	$1,850.00	Address: 1053 S. Olive Street. Auto sales and garage. After alteration stores. One story building 50' x 145' Ft.; Divide basement building into two stores, subdivide one store into general and print office space and service rooms add toilets, skylights, new store fronts and slider."
Building B	07/02/1987	Permit #69566	Lew Berenzweis		N/S RGA Construction	$12,000.00	Address: 1055 S. Olive Street. Retail store. One story building; 50' x 145' Ft.; Exterior walls URM. Roof wood. Floor conc; "Phase I, Anchors only of Division 88."
Building B	10/06/1989	Permit #2339*	Lou Berenzweig		Steve Notaro	$66,000.00	Address: 1055 S. Olive Street. Retail Store. One story building; 50' x 132' Ft.; Walls URM. Roof wood. Floor conc; "Full compliance with Division 88. RGA design. RC 3A."
Building B	04/30/1990	Permit #05929	Lou Berenzweig		Decoma	$7,500.00	Address: 1055 South Olive Street. Retail Store. One story building; 50' x 132.5' Ft.; Walls URM; Roof wood. Floor conc; "Steel frame x-walls. RGA design. FW/89/HO/2339."
Building B	05/18/2001	Permit #01016-10000-06553*	Berenzweig, Richard Tr Richard Berenz		Decoma Industries	$303.95	TR 1011 LT A, TR 62 unnumbered LT, Subdivision of Bloc 1; 50' x 152' Ft.; "T.I. work inclusive of openings in walls & finishes for showroom and a new office."
Building B	02/28/2006	Permit #19912	Louis Berenzweig		Owner	$1,800.00	Address: 1053-55 S. Olive St. Store. One story building 50' x 150' Ft.; Exterior walls brick. Roof compo. Floor conc. "Acoustic ceiling paneling. Flange klamp class A. system R. R. 22501."
Building C	8/26/1910	Permit #06868	John Hayes	John Hayes	Owner	$300.00	Move and Repair residence
Building C	8/26/1910	Permit #06869	John Hayes	John Hayes	Owner	$700.00	Move and remodel upper story of frame building and repair

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
Building C	9/28/1910	Permit #07965	Steve Turner and Ralph Sprowls	Owner	H. C. Brown	$5,500.00	Construction of new garage building, masonry and concrete walls, with wooden trusses and roofing
Building C	6/8/1923	Permit #25972	Harvey Goodwin		Electrical Products	$500.00	Erection of new double faced sign on roof
Building C	1/7/1929	Permit #00522	Steve Turner and Ralph Sprowls	Winslow B. Felix	Winslow B. Felix	$200.00	Skylights to be installed
Building C	6/1/1929	Permit #14726	F. W. Braun		American House Moving Co.	$2,500.00	Move front back 5'-0"
Building C	1/25/1932	Permit #01465	Steve Turner and Ralph Sprowls			$25.00	Move office glass and frame partitions to change location of office and hanging iron gates to driveway
Building C	3/11/1941	Permit #06261	United Parcel Service		S. N. Benjamin	$2,000.00	Wood and glass partitions, new plumbing, new wiring
Building C	10/24/1952	Permit #43829	Steve L. Turner			$750.00	Alley and Olive Street parapet alteration
Building C	4/26/1968	Permit #65501	Occidental Life	Joseph J. Takahashi	Lukens, Inc.	$2,000.00	Enlarge existing doorway, remodel
Building C	5/1/1968	Permit #65749	National Auto Glass	B. L. Prenevich	Allbrite Electric		Move 5x10 DF ill Sign across street
Building C	5/6/1968	Permit #66084	Occidental Insurance		Harry Lukens Inc.	$2,000.00	Non-bearing partitions.
Building C	5/17/1968	Permit #66910	National Auto Glass		Robert W. Haussler	$1,240.00	Décor wall (aluminum facing)
Building C	8/26/1977	Permit #50657	Montgomery Management	Harold Cass	Roether Construction	$1,000.00	Repair fallen truss per engineered plan.
Building C	2/26/1979	Permit #78225	National Auto Glass		QRS Corp.	$2,175.00	Installation of new wall sign.
Building C	5/26/1988	Permit #99414	Steve Zimmerman	S.B. Beyzaee		$49,000.00	Full compliance with RGA (earthquake safety)

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
Building C	3/31/1989	Permit #28198	Steve Zimmerman	S.B. Beyzaee	Vahdani Construction Co.	$201.00	Adding contractor to previous permit# 99414
Building C	4/20/1989	Permit #29827	Steve Zimmerman	Vahdahi & Associates Inc.	Vahdahi Const. Co.	$20,000	Repair and/or replace wood trusses and damaged rafters.
Building D	1945	Permit #6824	T. R. King & Co	None	Harry M. Lukens	$2,000.00	Address: 1039 S. Olive Street. Store and Occupancy. One story building; 50’ x 80’ Ft.; “Build 2 & 4 partition.”
Building D	06/05/1912	Permit #6493	Alfred C. Palfrey	Nooriger & Slyson	Theo N.S. Gillwig	$147.35	Address: 1027 to 1033 S. Olive Street. Showroom and Garage. One story building; 100’ x 150’ Ft.; Building material used: Concrete foundation 18” below ground surface with 21” wall footings, brick walls, steel beams, cement and tile floors, brick and wood partitions.
Building D	06/09/1913	Permit #7906	Whiting Mead		Sam	$100.00	Address: 1040-41 S. Olive Street. Residence. One story building; “Wreck and remove building.”
Building D	06/13/1913	Permit #8122	Whiting Mead		Sam	$50.00	Address: 1041 S. Olive Street. Residence. One story building; “Wreck and remove building.”
Building D	12/07/1928	Permit #33870	A.E. Palfrey	J. R. Kline	A. J. Crawford	$3,500.0$0	Address: 1027 to 1033 S. Olive Street. Private Garage. One story building; 100’ x 150’ Ft.; “Set back of front wall to conform with garage door access for the widening of Olive St. set back 5’ Ft.”
Building D	01/04/1929	Permit #421	J. Banning		A.J. Nalgreen	$4,000.00	Address:1035 S. Olive Street. Stores. One story building; 50’ x 100’ Ft.; “Set back from 5’ Ft. and remodel same appendage.”
Building D	12/14/1931	Permit #26381	Automobile Insurance Underwriters		M. D. Durbin	$21.00	Address: 1039 S. Olive Street. One story building; 65’ x 70’ Ft.; “One temporary partition 16’ long and 1’ 6” high across room close one side of chimney between store rooms tenant boiler room.
Building D	01/03/1936	Permit #258	Carl Shultz	None	S.H. Sheers	$200.00	Address: 1035-37 S. Olive Street. Stores. One story building;40’ x 80’ Ft.; Brick walls; “Put in division wall 74’ Ft. long plaster both

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
							sides – 2x4studs – interior only."
Building D	06/18/1939	Permit #28043	Title Insurance Trust Co		Werner M Swanson	$700.00	Address: 1041-45 S. Olive Street. Store. One story building; 50' x 82' Ft.; "Alter 3 store fronts. No structural changes. No alterations above show windows."
Building D	08/16/1939	Permit #32179	Title Insurance Trust Co		Albert Wichest	$	Address: 1041 S. Olive Street. Store. "Store frames."
Building D	05/15/1945	Permit #6825	T. R. King & Co		Harry M. Lukens	$1,800.00	Address: 1039 S. Olive Street. Film vault. One story building; 5' x 20'Ft.; 12" footing placed 1'6" below ground. Exterior walls made of 6" concrete. Comp. roofing; "4-26-45 park and yard ok."
Building D	05/14/1953	Permit #61033	H.A.J. Realty CO.	Sacral	H.C. Olsen	$500.00	Address: 1041 S. Olive Street. Store. One story building; 50 x 100 Ft.; Exterior walls and framework made of brick; "Alter street pathway wall along Olive St."
Building D	08/07/1953	Permit #66414*	M.C. Anderson		Owner	$100.00	Address: 1035 S. Olive Street. Manufacturing sales & casino equipment. Three one story buildings; 50' x 80' Ft.; Brick and stucco walls; "Changes as per letter from building and safety commissioner. Dated May 18th 1953. File #9359 with deviations as granted by board letter dated June 15th 1953. 15' x 25' room in south west no structural changes. Corner converted to limited E.i.""
Building D	07/21/1976	Permit #29797	Amour Co.		Owner	$500.00	Address: 1035 S. Olive Street. Two manufacturing buildings; 50' x 152' Ft.; Brick walls. Compo roof. Concrete floor; "Remove nonbearing partitions. Install suspended ceiling comply w/construction order H 14342."
Building D	08/13/1976	Permit #31162	J. Woo		L.E. Youngquist Roofing Co.	$2,800.00	Address: 1035 S. Olive Street. Manufacturing. Two one story buildings; 50' x 152.3' Ft.; "Reroof with one 15lb. felt under one 90lb. Cap sheet."

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
Building D	11/16/1977	Permit #54830	Jose E. Chahin	None	Not selected	$5000.00	Address: 1041 S. Olive Street. Commercial. One story building; 50' x 152' Ft.; "Install new baths."
Building D	11/09/1989	Permit #HO-2912	Jose E. & Yolanda Chahin		To be selected	$70,000.00	Address: 1041 S. Olive Street. Office. One story building; 50' x 135' Ft.; Common wall at north end is wood, built under permit #36/LA/00258; "Full compliance with Division 88 risk class III-B."
Building D	03/27/1990	Permit #05264	Jose & Yolanda Chahin		Earthquake Damage Prev.	$201.00	Address: 1041 S. Olive Street. Office. One Story building; 50' x 135 Ft.; Exterior walls urm. Roof wood. Floor concrete.; "Add contractor to line #10. F/W 89HO-02912."
Building D	08/13/1997	Permit #66459*	Chahin, E Yolanda			$458.52	Address: 1041 S Olive Street. Office. One story building; 120' x 156.6' Ft.; "Tenant Improvement."
Building D	01/25/1978	Permit #57778	Jose E. Chahin		Not selected	$5,000.00	Address: 1041 S. Olive Street. Print shop converting to office. One story building; 20' x 152' Ft.; "Convert print shop to photo shop/pfc paint interior partitions for darkroom."
Building D and E	05/13/1953	Permit #61032	M.C.Anderson	None	H. C. Olsen	$525.00	Address: 1035 S. Olive Street. Store. Two one story buildings; 50' x 100' Ft.; Brick walls; "Alter street parking along Olive Street."
Building D and E	10/05/1972	Permit #59054	Charles & Paul Endy		Owner	$400.00	Address: 1034 S. Olive Street. Manufacturing/sales. Three one story buildings. Two for manufacturing. One machine shop; Brick walls. Tar paper roof. Concrete floor; "Install interior partitions. No structural."
Building D and E	04/21/1989	Permit #22450	Yon Chul Shin		To be selected	$1,000.00	Address: 1035-39 S. Olive Street. Presently store & manufacturing. Changing to store & packaged foods. One story building; 50' x 88' Ft.; Brick walls. Compos roof. Concrete floor; "Change store (*G-1) to Packaged Food Store (G-2)."
Building E	06/10/1947	Permit #20473	T.R. King	S.B. Barnes	Harry M. Lukens	$3,000.00	Construction of a storage building

Building	Issued	Permit/Assessor Record	Owner	Architect	Contractor	Valuation ($)	Description
			Co.				
Building E	06/14/1990	Permit #06874*	Yoong & Mai Ja Shin		Earthquake Damage Prevention	$52,000.00	Address: 1035 S. Olive Street. MFG/retail. Two one story buildings; 50' x 86' Ft.; Exterior walls urm. Roof truss. Floor conc; "Full compliance with Div 88."
Building E	10/08/2014	Permit #14016-1000-20378	Shin, Young S TR Young S Shin Trust		Driver Urban LLC	$5,000.00	Address: 1033 S Olive Street. Retail. One story building; 50' x 65' Ft.; "Alteration to portion of buildings footing per engineering design (total linear length 65')."

*indicates drawings or sketches attached to building permit

APPENDIX C, TABLE 2
OCCUPANCY HISTORY OF THE PROJECT SITE

Building	Address	Year	Owner/Occupant	Business Type	Source
A and B	1053-1057	1913	Simplex and Mercer Pacific Coast Agency	Car Dealer	Los Angeles Times (06/18/1913)
		1916	Mercer Jordon Pacific Coast Agency	Car Dealer	Los Angeles Times (11/5/1916)
		1921-1951	Winslow Felix/ Felix Chevrolet	Used Car Dealer	Los Angeles Times (01/12/1921)
		1951-1955	Craig Movie Supply	Movie & Photo Supplies	Sanborn, Los Angeles Times (09/08/1953), and Pacific Telephone
	1053	1958	Montgomery Brothers Inc.	Heater/Electronics	Pacific Telephone
	1057	1958	Davis Sales Co. Apt. Furnishings	Furniture	Pacific Telephone
		1966	Carl Fischer of California, Inc.	Music Publication	Los Angeles Times, (07/03/1966)
C	1047-1049	1913	Big Four Automobile Co.	Car Dealer	Los Angeles Times (05/07/1913)
	1047	1914-1917	C.S. Anthony So. California Distributor	Car Dealer/ Tractor/Farm Equipment	Los Angeles Times (03/15/1914) 12/09/1917)
	1041	1923	Bridge Bullock Inc. Used Car Dept.	Car Dealer (main dealer Figueroa St.)	Los Angeles Times (10/24/1923)
	1047	1928	Harvey Goodwin	Car Dealer	Los Angeles
		1940	Federal Garage	Auto Repair Shop	Los Angeles Times (04/28/1910)
	1041-1047	1950	Red Arrow	Messenger Service	Los Angeles Times (09/19/1943)
	1041	1951-1958	Mitchell and Herb Engraving Company	Photographic Developing and Plate Etching	LA Industrial Waste Permit (070/25/1958) and Pacific Telephone
	1047	1969	National Auto Glass Company	Auto Glass Replacement	Application for Industrial Waste Permit (03/11/1969)
D	1035 (before	1915-1916	Hawley King & Co.	Used Car Department/Car Dealer	Los Angeles Times (01/16/1916)

	Building E)	1922-1923	J. Henry Fahy	Car Dealer	Los Angeles Times (11/24/1922 and 05/27/1923)
		1924	H.W. Swanson/ Hupmobile (car manufacturer) Dealer	Auto Dealer	Los Angeles Times (05/21/1924)
	1037	1936	Borto Tire Company	Tire Shop	Los Angeles Times (06/30/1936)
	1037-1041	1936 - 1941	L.A. Camera Exchange	Camera Store	Los Angeles Times (05/08/1939 and 01/02/1941)
	1039	1933	Miner's Exchange	"Headquarters for the Mining Industry"	Los Angeles Times (04/03/1933)
		1950	Small Machine Shop		Sanborn
E (post 1945)	1035	1950	Woodworking and Celluloid Storage		Sanborn

Appendix E
Energy Calculation Worksheets

E-1 Project Construction

1045 Olive Street
Construction Energy Analysis

Annual Fuel Summary

	Heavy-Duty Construction Equipment
140,111	Total Project Consumption
43,111	Annual Consumption
	Haul Trucks
47,311	Total Project Consumption
14,557	Annual Consumption
	Vendor Trucks
136,021	Total Project Consumption
41,853	Annual Consumption
	Workers
481,164	Total Project Consumption
148,050	Annual Consumption
183,332	Project Consumption of diesel for Haul Trucks and Vendors
56,410	Annual Consumption
323,443	Total Gallons Diesel
481,164	Total Gallons Gasoline

3.3 Estimated Project Construction Duration (years)

99,521 Annual Average Gallons Diesel
148,050 Annual Average Gallons Gasoline

Los Angeles County [1]			Percent of Annual Project Compared to Los Angeles County
Source	**Fuel Type**	**Gallons**	
Workers	Gasoline	3,577,000,000	0.0041%
Off-Road/Vendor/Haul Trucks	Diesel	581,000,000	0.0171%

Notes:

1 Gasoline and diesel amounts from CEC, 2016. Available: http://www.energy.ca.gov/almanac/transportation_data/gasoline/2016_A15_Results.xlsx

Annual Electricity Summary

Temporary Construction Trailer - Electricity	12,990	kWh/year
Electric-powered Construction Equipment	415,839	kWh/year
Construction Water Energy Estimates	11,738	kWh/year

1045 Olive Street
Construction Energy Analysis

Off-Road Equipment

Equipment ≤ 50 hp		
pounds fuel/hp-hr (OFFROAD2011 model, ≤ 50 hp):	0.408	lb/hp-hr
diesel pounds/gallon (CARB density assumption):	7.07	lb/gal
diesel gallons/hp-hr:	0.0577	gal/hp-hr
Total <50	2,558	hp-hr
Total diesel gallons:	148	gal
Equipment > 50 hp		
pounds fuel/hp-hr (OFFROAD2011 model, > 50 hp):	0.367	lb/hp-hr
diesel pounds/gallon (CARB density assumption):	7.07	lb/gal
diesel gallons/hp-hr:	0.0519	gal/hp-hr
Total >50	2,696,295	hp-hr
Total diesel gallons:	139,963	gal
Total diesel gallons (off-road equipment):	**140,111**	**gal**

Construction Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Demolition	Air Compressors	1	10	78	0.48	26	9,734
Demolition	Concrete/Industrial Saws	1	10	81	0.73	26	15,374
Demolition	Sweepers/Scrubbers	1	6	64	0.46	26	4,593
Demolition	Tractors/Loaders/Backhoes	1	10	97	0.37	26	9,331
Site Preparation	Concrete/Industrial Saws	1	10	81	0.73	26	15,374
Site Preparation	Excavators	1	10	158	0.38	26	15,610
Grading	Bore/Drill Rigs	1	10	221	0.5	105	116,025
Grading	Excavators	2	10	158	0.38	105	126,084
Grading	Sweepers/Scrubbers	1	6	64	0.46	105	18,547
Grading	Tractors/Loaders/Backhoes	2	10	97	0.37	105	75,369
Foundations/Concrete Pour	Cranes	1	6	231	0.29	810	325,571
Foundations/Concrete Pour	Forklifts	1	10	89	0.2	810	144,180
Foundations/Concrete Pour	Sweepers/Scrubbers	1	6	64	0.46	810	143,078
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	1	10	97	0.37	810	290,709
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	10	64	0.46	79	23,258
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	10	97	0.37	79	28,353
Building Construction	Cranes	2	6	231	0.29	705	566,735
Building Construction	Forklifts	2	10	89	0.2	705	250,980
Building Construction	Sweepers/Scrubbers	1	6	64	0.46	705	124,531
Architectural Coating	Air Compressors	1	10	78	0.48	626	234,374
Architectural Coating	Forklifts	1	10	89	0.2	626	111,428
Paving	Pavers	1	10	130	0.42	52	28,392
Paving	Signal Boards	1	10	6	0.82	52	2,558
Paving	Tractors/Loaders/Backhoes	1	10	97	0.37	52	18,663
						Total >50	2,696,295
						Total <50	2,558

1045 Olive Street
Construction Energy Analysis

On-Road Haul Trucks

EMFAC2017 Diesel Fuel Consumption Factor:[1]	0.1588	gallons/mile	miles/gallon
Total On-Road Heavy-Duty Truck VMT:	285,211	miles	6.30
Total VMT diesel gallons (on-road haul trucks):	**45,304**		
EMFAC2017 Diesel Fuel Consumption Factor:[2]	1.8009	gallons/hour	
Total Haul Truck Idle-Hours per Year:	1,115	hours	
Total Idling diesel gallons (on-road haul trucks):	**2,007**		
Total diesel gallons (on-road haul trucks):	**47,311**	gal	

Estimated Fuel Savings from Anti-Idling Regulation (64 percent based on estimated CARB emissions reductions): [3] *5,576*

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; T7 Single Construction; Annual; CY 2017; Aggregate MY; Aggregate Speed)

2. California Air Resources Board, EMFAC2017 (South Coast Air Basin; T7 Single Construction; Annual; CY 2017; Aggregate MY; 5 miles per hour converted to hourly rate).

3. Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, https://www.arb.ca.gov/regact/idling/idling.htm, accessed November 2016.

Phase	Days	Total One-Way Trips	Miles/Trip	VMT	Idle Hours
Demolition	26	680	20	13,600	57
Site Preparation	1.7	52	24	1,227	4
Grading	22.9	11,429	21	240,009	952
Foundations/Concrete Pour	1	1,215	25	30,375	101
Drainage/Utilities/Trenching	79	0	25	0	0
Building Construction	705	0	25	0	0
Architectural Coating	626	0	25	0	0
Paving	52	0	25	0	0
			Total Haul Truck VMT:	285,211	
			Total Idle-Hours:		1,115

1045 Olive Street
Construction Energy Analysis

On-Road Vendor Trucks

			miles/gallon
EMFAC2017 Diesel Fuel Consumption Factor:[1]	0.1398	gallons/mile	7.2
Total On-Road Vendor Truck VMT:	855,117	miles	
Total VMT diesel gallons (on-road vendor trucks):	**119,518**		
EMFAC2017 Diesel Fuel Consumption Factor:[2]	1.5979	gallons/hour	*Estimated Fuel Savings from Anti-Idling Regulation (64 percent based on estimated CARB emissions reductions):* [3]
Total Haul Truck Idle-Hours per Year:	10,328	hours	*45,841*
Total Idling diesel gallons (on-road haul trucks):	**16,503**		
Total diesel gallons (on-road haul trucks):	**136,021**	gal	

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; HHDT and MHDT; Annual; CY 2019; Aggregate MY; Aggregate Speed)

2. California Air Resources Board, EMFAC2017 (South Coast Air Basin; HHDT and MHDT; Annual; CY 2019; Aggregate MY; 5 miles per hour converted to hourly rate).

3. Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, https://www.arb.ca.gov/regact/idling/idling.htm, accessed November 2016.

Phase	Days	Trips/Day	Miles/Trip	VMT	Idle Hours
Demolition	26	6	6.9	1,076	13
Site Preparation	26	0	6.9	-	-
Grading	105	6	6.9	4,347	53
Foundations/Concrete Pour	810	0	6.9	-	-
Drainage/Utilities/Trenching	79	6	6.9	3,271	40
Building Construction	705	174	6.9	846,423	10,223
Architectural Coating	626	0	6.9	-	-
Paving	52	0	6.9	-	-
			Total Vendor Truck VMT:	855,117	
			Total Idle-Hours:		10,328

1045 Olive Street
Construction Energy Analysis

On-Road Workers (LDA, LDT1, LDT2)

EMFAC2017 Gasoline Fuel Consumption Factor:[1]	0.0379	gallons/mile	miles/gallon
Total Worker VMT:	12,705,386	miles	26.4
Total VMT gasoline gallons (workers):	**481,164**		

1. California Air Resources Board, EMFAC2017 (South Coast Air Basin; LDA, LDT1, LDT2; CY 2017; Aggregate MY; Aggregate Speed)

Phase	Days	One-Way Trips/Day	Miles/Trip	VMT
Demolition	26	12	14.7	4,586
Site Preparation	26	38	14.7	14,524
Grading	105	132	14.7	203,742
Foundations/Concrete Pour	810	350	14.7	4,167,450
Drainage/Utilities/Trenching	79	50	14.7	58,065
Building Construction	705	738	14.7	7,648,263
Architectural Coating	626	62	14.7	570,536
Paving	52	50	14.7	38,220
			Total Worker VMT:	**12,705,386**

1045 Olive Street
Construction Energy Analysis

Temporary Construction Trailer - Electricity		
Land Use	**Square Feet**	**Energy Use per year (kWh)**
General Office	1,000	12,990
Note: CalEEMod 2016.3.2 used to estimate energy use for temporary construction office		

1045 Olive Street
Construction Energy Analysis

Electric-powered Construction Equipment

kWh/hp-hr
0.7457

140110.9

Equipment	Number	Hours/Day	Horsepower	Load Factor	Number Days	Total hp-hr	kWh	kWh/yr
Cranes	2	6	231	0.29	1217	978,322	729,535	224,472
Air Compressor	2	10	78	0.82	652	834,038	621,942	191,367
Total	**-**	**-**	**-**	**-**	**-**	**1,812,360**	**1,351,477**	**415,839**

Notes:

1. Cranes horsepower and load factors taken from CalEEMod

2. Conversion factor taken from University of North Carolina Unit Conversion Dictionary; Source: http://www.unc.edu/~rowlett/units/dictH.html

1045 Olive Street
Construction Energy Analysis

Construction Water Energy Estimates

Source	Construction Water Use per Day (Mgal)	Total Construction Water Use (Mgal)	Total Electricity Demand from water Demand (kWh)	Annual Electricity Demand from water Demand (kWh)
Project	0.003	2.930	38147	11738
CalEEMod Water Electricity Factors	**Electricity Intensity Factor To Supply (kWh/Mgal)**	**Electricity Intensity Factor To Treat (kWh/Mgal)**	**Electricity Intensity Factor To Distribute (kWh/Mgal)**	**Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)**
Project	9727	111	1272	1911

Sources:

Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of landscaped area within the Los Angeles area (Mediterranean climate), which assumes high water demand landscaping materials and an irrigation system efficiency of 85%. Factor is therefore (20.94 GAL/SF/year) x (43,560 SF/acre) / (365 days/year) / (0.85) = 2,940 gallons/acre/day, rounded up to 3,000 gallons/acre/day. (U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. “Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor – Landscaped Areas with High Water Requirements).

E-2 Existing Site Operations and Project Operations

1045 Olive Street
Operational Energy Analysis

Energy and VMT Estimates

Source	Natural Gas demand (million kBTU/yr)	Electricity demand (million kWh/yr)	Electricity demand from water demand (million kWh/yr)	Annual Worker and Visitor VMT
1045 Olive Street	10.838	7.002	1.304	15,904,642
Existing Site	0.025	0.155000	0.049	760,945
Net Total	**10.813**	**6.847**	**1.255**	

Source	CalEEMod Indoor Water Use (Mgal/yr)	CalEEMod Outdoor Water Use (Mgal/yr)	Total Water Use (Mgal/yr)	Electricity Demand from water Demand (million kWh)
1045 Olive Street	66.359	39.567	105.926	1.304
Existing Site	3.771	0.000	3.771	0.049
Net Total	**62.589**	**39.567**	**102.156**	**1.255**

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
1045 Olive Street	9727	111	1272	1911

Source: California Emissions Estimator Model (CalEEMod).

1045 Olive Street
Operational Energy Analysis
Project Trips
Fuel Usage from VMT

Annual VMT (All): 15,904,642 miles/year

(With trip and VMT reductions from land use characteristics and proximity to public transit.)

Fuel Type:[1]	GAS	DSL	ELEC	
Percent:	94.28%	3.99%	1.64%	
Miles per Gallon Fuel:	26.35	10.83	-	
Annual VMT by Fuel Type :	14,994,892	633,973	261,367	miles/year
Annual Fuel Usage :	568,994	58,555	-	gal/year
Annual Fuel Savings from Electric Vehicles:[2]	-	-	9,918	gal/year (assumed to be gasoline)

Notes:

1. California Air Resources Board, EMFAC2017, South Coast Air Basin; 2023; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2017/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

1045 Olive Street
Operational Energy Analysis
Existing Trips
Fuel Usage from VMT

Annual VMT (All): 760,945 miles/year

(With trip and VMT reductions from land use characteristics and proximity to public transit.)

Fuel Type:[1]	GAS	DSL	ELEC	
Percent:	96.17%	3.17%	0.58%	
Miles per Gallon Fuel:	22.45	8.63	-	
Annual VMT by Fuel Type :	731,837	24,096	4,388	miles/year
Annual Fuel Usage :	32,604	2,793	-	gal/year
Annual Fuel Savings from Electric Vehicles:[2]	-	-	195	gal/year (assumed to be gasoline)

Notes:

1. California Air Resources Board, EMFAC2017, South Coast Air Basin; 2017; Annual; All vehicle types; Aggregate model year; Aggregate speed). https://www.arb.ca.gov/emfac/2017/
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

	Total CO_2 MT/yr	Fuel Type	Factor $KGCO_2$/gal	Gallons
Emergency Generator	18.66	diesel	10.15	1,838.42

Assumptions

10.15	diesel	KgCO2/gallon[1]
8.91	gasoline	KgCO2/gallon[1]
1	MT = 1,000 kilograms	

E-3 Los Angeles Department of Water and Power and Southern California Gas Company "Will Serve" Letters

POWER
ENGINEERING
DIVISION

NEW BUSINESS & CUSTOMER
SUPPORT SUBSECTION

METROPOLITAN SERVICE PLANNING

2633 Artesian Street, Suite 210, Los Angeles, CA 90031 (213) 367-6000 FAX: (213) 367-6027

Jeffrey T. Bergman
District Engineer

WILL SERVE

October 31, 2017

Ms. Taylor Miller
David Evans and Associates, Inc.
201 South Figueroa Street, Suite 240
Los Angeles, CA 90012

Dear Ms. Miller:

1045 S Olive Street
Mixed-Use Development

This is in response to your letter dated October 31, 2017 regarding electric service for the proposed project at the above address.

Electric service is available and will be provided in accordance with the Los Angeles Department of Water and Power Rules and Regulations. The estimated power requirement for this proposed project is part of the total load growth forecast for the City and has been taken into account in the planned growth of the power system.

If you have any questions regarding this matter, please call Ms. Kiani Jones at (213) 367-8023.

Sincerely,

Jeffrey T. Bergman
District Engineer, Metro East Service Planning

c: Kiani Jones
Andre Minton

Southern California Gas Company

A Sempra Energy utility®

November 16, 2017

David Evans and Associates, Inc.
201 South Figueroa St., Suite 240
Los Angeles, CA 90012

RE: Will Serve Letter Request for – 1045 S. Olive St., Los Angeles, CA 90015

To whom it may concern:

Thank you for inquiring about the availability of natural gas service for your project. We are pleased to inform you that Southern California Gas Company (SoCalGas) has facilities in the area where the above named project is being proposed. The service would be in accordance with SoCalGas' policies and extension rules on file with the California Public Utilities Commission (Commission) at the time contractual arrangements are made.

This letter should not be considered a contractual commitment to serve the proposed project, and is only provided for informational purposes only. The availability of natural gas service is based upon natural gas supply conditions and is subject to changes in law or regulation. As a public utility, SoCalGas is under the jurisdiction of the Commission and certain federal regulatory agencies, and gas service will be provided in accordance with the rules and regulations in effect at the time service is provided. Natural gas service is also subject to environmental regulations, which could affect the construction of a main or service line extension (for example, if hazardous wastes were encountered in the process of installing the line). Applicable regulations will be determined once a contract with SoCalGas is executed.

If you need assistance choosing the appropriate gas equipment for your project, or would like to discuss the most effective applications of energy efficiency techniques, please contact our area Service Center at 800-427-2200.

Thank you again for choosing clean, reliable, and safe natural gas, your best energy value.

Sincerely,

Gamaliel Vazquez

Gamaliel Vazquez

Planning Associate

Compton Headquarters

APPENDIX F

Geology and Soils / Paleontological Resources

F-1 Preliminary Soil Report Letter

BOARD OF
BUILDING AND SAFETY
COMMISSIONERS

VAN AMBATIELOS
PRESIDENT

E. FELICIA BRANNON
VICE PRESIDENT

JOSELYN GEAGA-ROSENTHAL
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CITY OF LOS ANGELES
CALIFORNIA

ERIC GARCETTI
MAYOR

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

FRANK M. BUSH
GENERAL MANAGER
SUPERINTENDENT OF BUILDING

OSAMA YOUNAN, P.E.
EXECUTIVE OFFICER

PRELIMINARY SOIL REPORT APPROVAL LETTER

March 28, 2018

LOG # 102327
SOILS/GEOLOGY FILE - 2

1045 Olive, LLC
1800 Century Park East, Suite 420
Los Angeles, CA 90067

TRACT:	SUBDIVISION OF BLOCK 70 ORD'S SURVEY (MR 43-74) | HAYWARD'S SUBDIVISION OF PART OF BLOCK 70 ORD'S SURVEY (MP 1-33) | 1011 | 62
LOTS:	FR 1, FR 3, FR 4, f | FR 4 | FR LT A | FR "UNNUMBERED LT"
LOCATION:	1045 S. Olive Street (aka 1033, 1035, 1039, 1041, 1047, 1049, 1053, 1055 & 1057 S. Olive Street)

CURRENT REFERENCE REPORT/LETTER	REPORT No.	DATE OF DOCUMENT	PREPARED BY
Preliminary Soil Report	Crescent-2-02	03/02/2018	GeoDesign, Inc.

The Grading Division of the Department of Building and Safety has reviewed the referenced report that provides recommendations to address California Environmental Quality Act (CEQA) compliance for the proposed high rise tower development (Vesting Tentative Tract Map VTT-74531) consisting of a 810 foot tall residential tower over a 9-level podium structure over a 6-story subterranean parking garage. The earth materials at the subsurface exploration locations consist of up to 9.5 feet of uncertified fill underlain by native soil. The consultants recommend to support the proposed structures on conventional and/or mat-type foundations bearing on native undisturbed soils.

The referenced report is acceptable, provided the following conditions are complied with prior to site development:

1. Prior to the issuance of any permit, secure approval from the Division of Land Unit of the Department of City Planning for the project.

2. Prior to the issuance of any building or grading permits, a soils report, in accordance with P/BC 2017-113 Information Bulletin, providing design level geotechnical recommendations and calculations for the proposed grading/construction shall be submitted to the Grading Division for review and approval.

CASEY LEE JENSEN
Engineering Geologist Associate III

LEILA ETAAT
Structural Engineering Associate I

cc: GeoDesign, Inc., Project Consultant
LA District Office

AN EQUAL EMPLOYMENT OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER

F-2 Report of Geotechnical Engineering

GEODESIGN INC

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

Proposed High-Rise Tower Development
1045 South Olive Street
Los Angeles, California

For
1045 Olive, LLC
March 2, 2018

GeoDesign Project: Crescent-2-02

GeoDesign Inc

March 2, 2018

1045 Olive, LLC
1800 Century Park East, Suite 420
Los Angeles, CA 90067

Attention: Elliott Kahn and Adam Tartakovsky

Report of Geotechnical Engineering Services
Proposed High-Rise Tower Development
1045 South Olive Street
Los Angeles, California
GeoDesign Project: Crescent-2-02

GeoDesign, Inc. is pleased to submit this report in support of California Environmental Quality Act compliance efforts for the proposed high-rise tower development planned at 1045 South Olive Street in Los Angeles, California.

This report is suitable for submittal to the City of Los Angeles Department of Building and Safety Grading Division, for their review; however, it should be noted that an addendum to this report will be required once the design development is initiated and specific foundation loading information is available.

♦ ♦ ♦

We appreciate the opportunity to be of service to you. Please contact us if you have questions regarding this report.

Sincerely,

GeoDesign, Inc.



Christopher J. Zadoorian, G.E.
Principal Engineer

cc: Yaarit Sharoni, ODA New York (via email only)
Dave Fields, Magnusson Klemencic Associates (via email only)
Dr. Gary Schalman, Environmental Science Associates (via email only)

JSM:CJZ:kt
Attachments
One copy submitted
Document ID: Crescent-2-02-030218-geor-rev.docx
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ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BGS	below ground surface
CBC	California Building Code
CEQA	California Environmental Quality Act
CGS	California Geological Survey
FEMA	Federal Emergency Management Agency
g	gravitational acceleration (32.2 feet/second^2)
H:V	horizontal to vertical
HDPE	high-density polyethylene
LABC	Los Angeles Building Code
LADBS	Los Angeles Department of Building and Safety
MCE	maximum considered earthquake
MRZ	Mineral Resource Zone
pcf	pounds per cubic foot
pci	pounds per cubic inch
PHT	Puente Hills Blind Thrust
psf	pounds per square foot
psi	pounds per square inch
SPT	standard penetration test
USDA	U.S. Department of Agriculture

1.0 INTRODUCTION

1.1 GENERAL

GeoDesign, Inc. is pleased to present this report of geotechnical engineering services in support of CEQA compliance efforts for the proposed high-rise tower development planned at 1045 South Olive Street in Los Angeles, California, as shown on Figure 1.

Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

1.2 EXISTING SITE CONDITIONS AND FEATURES

The site is located on the northwest corner of West 11th Street and South Olive Street in Los Angeles, California, as shown on Figure2, and consists of five lots developed with multiple one-story, wood and brick structures.

The site is bound on the north by a recently completed seven-story mixed-use building (1001 South Olive Street), on the south by West 11th Street, on the east by South Olive Street, and on the west by an approximately 20-foot-wide alley. A recently completed 25-story high-rise tower (1005 South Grand Avenue) is located along the west side of the alleyway along with a 2-story commercial building (1040 South Grand) and a 7-story, mixed-use building (1000 South Grand Avenue).

Based on data obtained from GoogleEarth™, the ground surface level at the site slopes gently to the south and ranges from approximately Elevation 248 to 246 from north to south.

1.3 PROPOSED DEVELOPMENT

You furnished us with architectural and landscape plans dated August 15, 2017 prepared by ODA, New York that depict the proposed development. Based on our review of the plans, the proposed development will include the construction of an approximately 810-foot-tall residential tower and a contiguous nine-level podium structure as shown on Figure 2. The tower and podium structure will each be constructed over a contiguous six-level subterranean parking garage that will extend to the properly line on each side.

The ground floor level of the tower (Level 1) will include commercial and back-of-house spaces; Levels 2 through 9 will include parking and liner units; Level 10 will consist of an amenity deck; Levels 11 through 70 will include residential units, with the exception of Levels 53 through 55 that will be amenity and terrace levels.

The lowest finish floor level (Level B-6) will be established approximately 54 feet BGS, or approximately Elevation 196. We anticipate the bottom of the mat foundation for the tower would be established approximately 10 feet below the lowest finished floor level, or approximately Elevation 186.

Preliminary foundation loading information was not available at the time of this report. Based on our experience with nearby high-rise tower projects (including current high-rise tower developments at 1200 South Figueroa Street and 1150 South Grand Avenue) and preliminary

discussions with Dave Fields of Magnusson Klemencic Associates, average dead-plus-live foundation loading for the tower may be on the order of 15,000 to 20,000 psf and typical dead-plus live column loading for contiguous nine-level podium structure may be on the order of 1,500 to 2,000 kips.

Temporary shoring to support the proposed excavation will be required and the temporary shoring will include provisions for support of adjacent structures potentially including the recently completed high-rise tower west of the site.

The site is also located in a LADBS-designated methane zone. As such, methane mitigation provisions will be required in accordance with LADBS Ordinance No. 175790. The required level of methane mitigation will be based on the results of a soil gas survey.

On-site groundwater infiltration will be implemented as part of Standard Urban Storm Water Mitigation Plan mitigation measures. We anticipate that stormwater infiltration will be accomplished through the use of deep drywells, likely within the building footprint.

1.4 SEISMIC DESIGN APPROACH

The proposed tower will be designed using a non-prescriptive seismic design approach as permitted in Section 104.11 of the CBC. This approach allows the use of alternative methods to determine the design lateral forces on the tower in lieu of code-prescriptive CBC provisions.

LADBS approved the CBC provision in LADBS Information Bulletin P/BC 2014-123 titled *Alternative Design Procedure for Seismic Analysis and Design of Tall Buildings and Buildings Utilizing Complex Structural Systems.*

In general, the alternative design approach will result in a building that remains serviceable when subjected to frequent earthquakes and a building that does not experience collapse during an extremely rare seismic event.

As a supplement to this report, once the design development is initiated, we will perform ground motion studies to develop earthquake acceleration time histories for use in the alternative design procedure and issue a final report under separate cover summarizing our ground motion study and presenting recommendations for earthquake time histories for use in the alternative design procedure.

It will also likely be necessary to perform site-specific shear wave velocity measurements at the site in support of the ground motion studies; however, this determination will necessarily be made based on discussions with the peer review team.

2.0 PURPOSE AND SCOPE

The purpose of our geotechnical engineering services is to provide geotechnical design recommendations for the proposed high-rise development. Our specific scope of services included the following primary tasks:

- Drilling two borings to depths of 101.4 and 126.5 feet BGS
- Performing geotechnical laboratory testing on select soil samples
- Performing a CEQA-compliant geologic and seismic hazards evaluation
- Developing lateral earth pressure parameters for below-grade walls
- Developing temporary shoring recommendations
- Developing foundation design recommendations
- Developing recommendations for general grading activities
- Preparing this report

Our subsurface explorations are summarized below followed by our conclusions and recommendations for the proposed development. References and acronyms are included at the end of this report.

3.0 SUBSURFACE EXPLORATIONS AND LABORATORY TESTING

3.1 SUBSURFACE CONDITIONS

We drilled two borings (B-1 and B-2) at the site to depths of 101.4 and 126.5 feet BGS, respectively, using hollow-stem auger drilling equipment. Boring B-1 was drilled inside the existing building located at 1057 South Olive Street using limited-access drilling equipment, and boring B-2 was drilled in a small parking lot adjacent to the 1041 South Olive Street building using truck-mounted drilling equipment. Borings B-1 and B-2 were drilled as part of a preliminary geotechnical investigation at the site in 2015 and for the purposes of this report are referred to as "current borings." The locations of current borings B-1 and B-2 are shown on Figure 2.

Subsurface data was also available from our prior nearby explorations performed at 1105 South Olive Street that included drilling four borings to depths between approximately 75 and 125.5 feet BGS. Our prior nearby explorations were performed immediately south of the site across West 11th Street and the prior boring locations are shown on Figure 2.

In both our current and prior explorations, we collected relatively undisturbed samples at regular intervals, performed SPTs, and maintained a log of the subsurface conditions encountered in each boring.

Fill soil consisting of clayey sand, sandy clay, and silty sand with concrete, wood, and brick fragments was encountered in current borings B-1 and B-2 to depths of 9.5 and 7.0 feet BGS, respectively.

Native soil underlying the fill in the current borings consists of medium dense to very dense, silty sand; clayey sand; and sand with intermittent layers of medium stiff to hard, sandy silt; sandy clay; and silty clay. Gravel and cobbles are present between approximately 10 and 28 feet BGS.

Below depths of approximately 26.5 to 28 feet BGS, alternating layers of stiff to hard silt or clay and medium dense to very dense, silty sand; sand with silt; and sand were encountered in each current boring. Gravel and cobbles were also encountered periodically within the granular layers in the deeper soil profile.

The data from the prior nearby borings is generally similar to the data from the current borings.

A generalized depiction of the subsurface conditions at the site is shown on Figures 3 and 4. Logs of the current borings are presented in Appendix A and logs of the prior nearby borings are presented in Appendix B.

3.2 GROUNDWATER TABLE AND GROUNDWATER SEEPAGE

3.2.1 General

The distinction between the groundwater table and groundwater seepage is significant for sites in downtown Los Angeles as intermittent and typically discontinuous, relatively shallow zones of groundwater seepage are often present; however, the global groundwater table is relatively deep as described in Sections 3.2.2 through 3.2.4

Intermittent zones of groundwater seepage would require mitigation during the construction phase of the project if encountered within the depth of the proposed excavation; however, in general, this condition would not require any permanent design considerations.

The presence of the groundwater table above the bottom of the planned excavation would present significant challenges during construction and would require robust design provisions and corresponding construction steps to mitigate.

A third designation to describe groundwater conditions at a site that is used in California is the historical high groundwater level. This designation was developed by the State of California for use in seismic analysis, specifically in the evaluation of liquefaction potential at a site. The designation was developed because large-scale groundwater pumping has been on-going in parts of California since the 1900s and in many cases the current groundwater level is considerably deeper than the pre-existing (prior to the onset of groundwater pumping) groundwater levels.

Groundwater seepage, the global groundwater table, and the historical high groundwater level are each discussed below.

3.2.2 Groundwater Seepage

Groundwater seepage was encountered in boring B-1 at a depth of approximately 85 feet BGS and in boring B-2 at depths of approximately 60 feet BGS. The seepage encountered is typical of the isolated and intermittent zones of water that is perched on fine-grained soil layers.

In this part of Los Angeles, perched groundwater seepage on silt and clay layers is typically sporadic, and in many cases explorations that are in close proximity may encounter highly variable groundwater conditions. It is also typical for the perched water to dissipate relatively quickly once encountered.

Groundwater seepage was not logged in the prior nearby borings at the time of drilling in 2007; however, it has been our experience that groundwater seepage, though present, is not always evident in hollow-stem auger borings. In addition, the frequency and intensity of groundwater seepage varies seasonally, typically in proportion to the rainfall levels.

3.2.3 Groundwater Table

Based on the data from our current borings (B-2), the current groundwater table at the site is approximately 120 feet BGS.

3.2.4 Historical High Groundwater Level

Based on our review of the Seismic Hazard Zone Report for the Hollywood 7.5-Minute Quadrangle (CGS, 1998), the historical high groundwater level is between 100 and 120 feet BGS, which is also consistent with the data from our current boring B-2.

The site is located in Section 32 of Township 1 South, Range 13 West in Central Subbasin of the Coastal Plain of Los Angeles Groundwater Basin of the South Coast Hydrologic Region according to the California Department of Water Resources (DWR, 2004).

Data available from nearby wells in the site vicinity are consistent with the data from our current borings as summarized in Table 1.

Table 1. Groundwater Well Data

Data I.D.	Date	Depth to Water (feet)	Location Relative to Site
LA Co. DPW Well 2746	12/18/1972	135	175 feet north
GeoTracker Site T0603789214 MW-1, MW-2 and MW-3	1/8/2013	31.2 to 49.31	450 feet north

1. Groundwater levels recorded in MW-1, MW-2, and MW-3 represent perched layers.

Mendenhall (1905) indicated groundwater in the area of the site at a depth of 140 to 200 feet BGS based on data from 1904. According to CGS (1998), historical high groundwater is approximately 100 and 120 feet BGS.

3.3 GEOTECHNICAL LABORATORY TESTING

We performed the following tests on samples collected from the current and prior nearby borings:

- In-place moisture and density
- Direct shear
- Consolidation
- Corrosion
- Expansion index

Results of the current laboratory testing are presented in Appendix A and results of the prior laboratory testing are presented in Appendix B.

4.0 GEOLOGIC AND SEISMIC HAZARDS

4.1 GEOLOGIC SETTING

The site is located within the Peninsular Ranges geomorphic province, which is characterized by northwest/southeast-trending alignments of mountains and hills and intervening basins, reflecting the influence of northwest-trending major faults and folds controlling the general geologic structural fabric of the region. This province extends northwest from Baja California into the Los Angeles Basin and west into the offshore area, including the Catalina and Channel islands. The Los Angeles Basin lies in the northern part of the Peninsular Ranges province. The Newport-Inglewood fault zone, a northwest-trending structural zone expressed at the surface by a series of discontinuous low hills, is located approximately 6 miles west-southwest of the site. The relationship of the site to local geologic features is depicted on Figure 5.

Aerial imagery was examined for evidence of past land use and geotechnical conditions. The site appears as developed with industrial-type buildings from 1948 through April 2017. Indications of geologic hazards were not observed in the available aerial imagery.

4.2 SOIL

Based on soil mapping available from USDA (2017), the site is located in an area indicated as "urban land with slopes of 0 to 5%."

The site is developed with infrastructure, flatwork, and parking areas. Past agricultural use of the site is not documented. Site improvements are anticipated to include drainage controls and protective features to minimize soil erosion. The potential for erosion is considered low.

4.3 GEOLOGIC MATERIALS

A local geologic map is presented on Figure 5 that shows the geologic units in the site region.

As shown on published geologic mapping (Lamar, 1970; Dibblee, 1991; and Yerkes and Campbell, 2005), the site is underlain by Holocene and Pleistocene Age alluvium.

The soil encountered in current borings at the site and prior nearby borings are generally consistent with the mapped and published descriptions. As discussed previously, the soil encountered at the site includes fill associated with prior site development underlain by native soil. The native soil includes dense to very dense sand, gravel, and silty sand and stiff to hard clayey sediments. The alluvium of the site region is underlain at depth by siltstone bedrock of the Puente Formation. Bedrock was not encountered within the maximum 126.5-foot depth explored in the current on-site borings or prior nearby borings.

4.4 MINERAL RESOURCES

The aggregate resource potential for the area of the site is addressed in a report titled *Mineral Land Classification of the Greater Los Angeles Area, Part IV: Classification of Sand and Gravel Resource Areas, San Gabriel Production-Consumption Region* (CGS, 1982). The report addresses the sand and gravel resource potential according to the presence or absence of significant sand and gravel deposits for use in construction-grade aggregate. The resource quality of surrounding lands is reported according to the following MRZ classification system:

- MRZ-1: Areas where adequate information indicates that significant mineral deposits are not present or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- MRZ-3: Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.

The site is situated in primarily developed terrain underlain by consolidated sediments. Economically significant sources of aggregate material were not observed within the site. The site is placed within MRZ-1 defined as "adequate information indicates that significant mineral deposits are not present."

As the project area is not presently used for mineral resource extraction and does not contain identified sources of aggregate materials, the proposed project will not result in the loss of availability of any known mineral resources. Therefore, significant impacts are not anticipated.

4.5 LANDSLIDES

According to the County of Los Angeles General Plan (1990) and City of Los Angeles Navigate LA (2017), the site is not located within an area identified as having a potential for slope instability. The site is situated in level terrain that lacks significant natural relief or slopes. The potential for landslide or slope instability is considered low.

4.6 FAULTS

4.6.1 General

The tectonics of the Southern California area are dominated by the interaction of the North American Plate and the Pacific Plate, which are sliding past each other in a transform motion. Although some of the motion may be accommodated by rotation of crustal blocks such as the western Transverse Ranges (Dickinson, 1996), the San Andreas fault zone is thought to represent the major surface expression of the tectonic boundary and to be accommodating most of the transform motion between the Pacific Plate and North American Plate. Some of the plate motion is accommodated along other northwest-trending, strike-slip faults that are related to the San Andreas system, such as the Newport-Inglewood, Palos Verdes, and offshore faults. Figure 6 shows the regional faults with respect to the site location.

The site does not lie within or immediately adjacent to an Alquist-Priolo Earthquake fault zone designated by the State of California to include traces of suspected active faulting. Alquist-Priolo Earthquake fault zones have been established for regional faults, including portions of the Newport-Inglewood fault zone and Hollywood fault zone located approximately 6 miles west-southwest and 4.8 miles north-northwest of the site, respectively. The site is not located within a preliminary Fault Rupture Study Area designated by City of Los Angeles (2017). The potential for fault surface rupture to occur at the site is considered low.

4.6.2 Hollywood Fault

The Hollywood fault is located approximately 4.8 miles north-northwest of the site. The Hollywood fault is an oblique, left lateral, reverse fault that places crystalline basement rock of

the Santa Monica Mountains over alluvial fan deposits of the northern Los Angeles Basin. Subsurface and geomorphic investigations indicate that the fault extends along the southern flank of the Santa Monica Mountains, from the Los Angeles River to northwestern Beverly Hills. A magnitude 6.4 capability is postulated for the fault based on the fault length and estimated slip rates (Field et al., 2008). An alignment of bedrock outcrops along Sunset Boulevard, previously thought to represent the surface trace of the fault, was found to be a paleo seacliff with the active trace of the fault being located farther to the south (Lindvall et al., 2001). The Hollywood fault is included in a State-designated zone to mitigate surface rupture effects in the built environment.

While some literature references the Hollywood-Santa Monica fault, these references are describing the combined faults along the Santa Monica Mountain front. These faults are treated as different faults and are modelled as separate faults in terms of characteristic magnitudes, distances from a site, and subsurface geometry. These fault-specific characteristics are used in determining the level of ground shaking at a site. The reason that the faults are modelled separately is that there is a separation between the faults at the extension of the northwest-trending Newport-Inglewood fault.

For the purposes of determining the potential for ground surface rupture at a site, neither the Hollywood fault nor the Santa Monica fault are relevant due to the distance from each fault to the site.

4.6.3 Newport-Inglewood Fault

The Newport-Inglewood fault zone is a system of northwest-trending, right-lateral, en echelon faults located approximately 6 miles west-southwest of the site. The discontinuous surface expression along a series of aligned hills and topographic rises suggests a youthful stage of development for this zone. The Newport-Inglewood fault extends offshore and trends into the Rose Canyon fault system. The 1933 Long Beach earthquake is attributed to a segment of the Newport-Inglewood fault. A magnitude 7.4 capability is postulated based on fault length and a scenario rupture along the combined Newport-Inglewood and Rose Canyon fault systems.

4.6.4 Raymond Fault

The Raymond fault is located approximately 6.3 miles northeast of the site. The Raymond fault is an approximately 23-kilometer-long feature exhibiting south-facing scarps and predominant left lateral motion (Weaver and Dolan, 2000). The Raymond fault is active, with trenching studies that have shown the most recent rupture on the Raymond fault to have occurred 1,000 to 2,000 years ago (Weaver and Dolan, 2000). A potential for magnitude 6.7 earthquakes is postulated for the Raymond fault based on the dimensions of the fault plane area. Portions of the Raymond fault are included within State-designated Alquist-Priolo Earthquake fault zones.

4.6.5 Verdugo Fault

The Verdugo fault is located approximately 7.3 miles north-northeast of the site. The Verdugo fault is a northeast-dipping, reverse fault that trends along base of the San Rafael Hills and Verdugo Mountains and merges southeasterly to the Raymond fault zone (Weber et al., 1980). Probable magnitudes between 6.0 and 6.8 are estimated based on fault length.

4.6.6 San Andreas Fault

The Mojave segment of the San Andreas fault zone is located along the northern margin of the San Bernardino Mountains, approximately 35 miles northeast of the site. The San Andreas fault is thought to represent the major surface expression of the tectonic boundary between the Pacific Plate and the North American Plate. A magnitude 7.4 earthquake is estimated for the Mojave segment of the San Andreas fault based on magnitude-length relations.

4.6.7 Blind Thrust Faults

The Los Angeles Basin is underlain locally by a system of buried thrust faults that terminate at a depth of approximately 3 kilometers. These buried thrust faults include the PHT system and the Upper Elysian Park fault.

The PHT is a system of buried thrust fault ramps that extend from beneath Los Angeles to the Puente Hills of eastern Los Angeles County and Orange County. Identified by subsurface data, including seismic reflection profiles, petroleum well data, and precisely located seismicity, the PHT is expressed at the surface as a series of contractional folds. Fault segments designated for the PHT include the Los Angeles, Santa Fe Springs, and Coyote Hills segments (Shaw and Shearer, 1999).

The Los Angeles segment of the PHT underlies downtown Los Angeles at a depth of approximately 4 kilometers.

This buried fault system is estimated to be capable of producing earthquakes with magnitudes of 6.5 to 6.6 on individual segments or a magnitude 7.1 earthquake as a group (Shaw et al., 2002). The Santa Fe Springs segment of the PHT is postulated to be the source of the 1987 magnitude 5.9 Whittier Narrows earthquake. A study using borehole data collected from sediments overlying the central segment of the PHT indicates that subtle folding extends to the near-surface locally and reveals four events in the past 11,000 years (Dolan et al., 2003).

The active Upper Elysian Park fault is located approximately 4.8 kilometers from the site as measured to the closest portion of the fault plane. The Upper Elysian Park thrust is a blind thrust fault located above the Los Angeles segment of the PHT system. The Elysian Park anticline and associated escarpments (MacArthur Park, Coyote Pass) and Montebello anticline provide evidence of recent activity on this fault. The vertically projected plane boundaries of this fault, as depicted by Shaw et al. (2002), are located northeast of the site. The plane of this structure plunges to the north-northeast at angles between 45 and 60 degrees (Oskin et al., 2000). This buried fault is postulated to be capable of producing earthquakes with magnitudes of 6.2 to 6.7.

These faults do not present a surface rupture hazard although they are capable of producing strong ground shaking as evidence by the 1987 magnitude 5.9 Whittier Narrows earthquake.

4.7 HISTORICAL EARTHQUAKES

The site is located within the seismically active southern California region. Table 2 summarizes the historical seismic events in the site region. The locations of historical seismic events are shown on Figure 7.

Table 2. Summary of Historical Earthquakes

Event I.D.	Date	Magnitude	Distance from Site (miles)	Direction from Site
Hector Mine	10/16/1999	7.1	120	ENE
Big Bear	6/28/1992	6.4	83	E
Landers	6/28/1992	7.3	105	E
Upland	2/28/1990	5.4	33	ENE
Sierra Madre	6/28/1991	5.8	23	NE
Chino Hills	7/29/2008	5.4	29	ESE
Whittier Narrows	10/1/1987	5.9	11	E
Sylmar	2/9/1971	6.6	27	NNW
Tehachapi	7/21/1952	7.3	44	NW
Northridge	1/17/1994	6.7	20	NW
Long Beach	3/10/1933	6.4	31	SE

The Long Beach, Whittier Narrows, Sylmar, and Northridge earthquakes attest to the potential for future seismic events in the southern California region to produce strong ground shaking. Any of the active faults of the region are capable of producing strong ground shaking during earthquakes. Construction according to applicable building codes can mitigate or lesser the potential for damage to site facilities.

4.8 GEOTECHNICAL HAZARDS

4.8.1 Fault Rupture

The site does not lie within or immediately adjacent to an Alquist-Priolo Earthquake Fault Zone, designated by the State of California to include traces of suspected active faulting. The site is not included in a City-designated fault hazard zone. The potential for surface fault rupture at the site is considered low.

4.8.2 Strong Ground Motions

The site is located within a seismically active region; therefore, strong ground shaking may occur during the design life of the proposed project. However, this hazard is common in Southern California and can be mitigated by designing the proposed structures in accordance with the current LABC.

4.8.3 Slope Stability and Landslides

According to City of Los Angeles Navigate LA (2017) and CGS (1998), the site is not located within an area identified as having a potential for slope instability. Significant natural slopes are not present on the site and the potential for slope instability and/or landslides is very low.

4.8.4 Erosion

The site is mantled by artificial fill soil overlying native sediments with a significant clay component. The site has been developed with buildings and associated flatwork since at least 1948. The planned development is anticipated to include improvements that will conceal site soil; therefore, the potential for erosion is considered low.

4.8.5 Liquefaction and Seismically Induced Settlement

Liquefaction is a process in which strong ground shaking causes saturated soil to lose its strength and behave as a fluid. Ground failure associated with liquefaction can result in severe damage to structures. The geologic conditions for increased susceptibility to liquefaction are (1) shallow groundwater (generally less than 50 feet in depth), (2) the presence of unconsolidated, sandy alluvium, typically Holocene in age, and (3) strong ground shaking. All three of these conditions must be present for liquefaction to occur.

The site is not located within an area identified as having a potential for liquefaction by CGS (1999).

Based on an historical high groundwater depth and the dense nature of the native soil at the site, liquefaction is not considered a hazard at the site.

4.8.6 Tsunamis, Inundation, Seiches, and Flooding

The site is not located in a coastal area; therefore, tsunamis are not considered a hazard at the site. According to the County of Los Angeles General Plan (1990), the site is not located within a potential inundation area for seismically induced dam/reservoir failure.

The site is not located in an area designated by FEMA (2008) as a flood hazard zone.

Flooding is not considered a significant hazard to the site.

4.8.7 Subsidence

The site is not located in an area of known subsidence associated with groundwater or petroleum fluid withdrawal, peat oxidation, or hydro-consolidation.

4.8.8 Expansive and Corrosive Soil

Plasticity index values available from USDA (2017) indicate the soil at the site is non-plastic. The soil at the site is generally considered non-expansive based on the reported plasticity index values. Samples collected from the current and prior nearby borings did not exhibit expansive characteristics.

Chemical testing performed for a prior site investigation indicate a "negligible" anticipated exposure to sulfate attack.

4.8.9 Oil Wells and Methane Gas

The site is located within the boundaries of the Los Angeles Downtown oil field. The closest well is located approximately 0.2 mile south-southwest of the site. This consists of a plugged and abandoned drill hole designated as API No. 03711865.

The site is located in a "methane zone" designated by the City of Los Angeles Navigate LA (2017). This zone identifies areas that have a potential for accumulation of methane and other volatile gases to occur in subsurface strata.

As noted previously, the site is located in a LADBS-designated methane zone. As such, methane mitigation provisions will be required in accordance with LADBS Ordinance No. 175790.

The required level of methane mitigation will be based on the results of a soil gas survey.

4.8.10 Volcanic Eruption

The site is not located in an area of recent volcanic eruption. The potential for volcanic activity at the site is low.

4.8.11 Radon Gas

The site is not located in an area of high radon potential for indoor areas (CGS, 2005). The potential for radon gas accumulation is considered low.

4.8.12 Off-Site Impacts

Potential geotechnical impacts to off-site areas are not anticipated due to requirements regarding grading permitting, erosion control, and avoidance of non-permitted disturbance to off-site areas required by local regulations.

5.0 CONCLUSIONS

5.1 GENERAL

The site is free from geologic or seismic hazards that would preclude the proposed development, and the proposed development is considered feasible from a geotechnical perspective.

The site is subject to strong ground shaking that would result from an earthquake occurring on a nearby or distant fault source; however, this hazard is common in Los Angeles and can be mitigated by following LABC seismic design requirements.

The site is also located within a LADBS-designated methane zone and appropriate methane mitigation provisions are required in accordance with LADBS Ordinance No. 175790.

5.2 FOUNDATIONS

The soil encountered at the planned foundation level generally consists of very stiff silt and clay and dense to very dense sand. We anticipate that these soils are suitable for the support of the proposed tower on a mat foundation; however, further foundation evaluation is required once structural loading demands are finalized.

Recommendations are presented herein for a mat foundation designed based on an assumed applied foundation pressures up to 20,000 psf. Recommendations are also presented for deep drilled shaft foundations if they are required for additional uplift resistance. The contiguous nine-level podium structure may be supported on spread footings established in the dense and stiff native soils.

5.3 FLOOR SLABS

The lowest level building floor slab may be established on the dense and/or stiff native soils present at the lowest finish floor levels.

5.4 SHORING, EXCAVATIONS, AND PERMANENT BELOW-GRADE WALLS

Temporary shoring will be required to provide support for the mass excavation that may extend on the order of 65 feet BGS. Solider piles used for temporary shoring will encounter gravel and cobbles typically in the upper approximately 8 to 25 feet. In addition, drilling could encounter localized zones of perched water.

Foundation information for the tower and two-story building located west of the alleyway and the seven-story mixed-use building north of the site was not available at the time of this report. If the planned excavation will extend below a 1H:1V plane from the bottom of the existing footings, surcharge loading will be required on temporary shoring and below-grade buildings walls.

Remnants of prior developments may also be present at the site within the planned mass excavation.

5.5 STORMWATER INFILTRATION

Stormwater infiltration is feasible at the site provided infiltration is performed in a manner that does not adversely impact the performance of the foundation system and is in conformance with City of Los Angeles Bureau of Sanitation guidelines and regulations. Deep drywells are feasible within the footprint of the proposed tower and parking structure provided the recommendations presented herein are followed. Site-specific field percolation testing will be required to develop design infiltration rates.

5.6 GROUNDWATER SEEPAGE

Groundwater seepage was encountered at the site typically at or below the planned bottom of the mass excavation. However, it is likely that shallower zones of groundwater seepage that coincide with fine-grained (silt and clay) layers will be encountered intermittently during construction. The volume of seepage may initially be high but is expected to dissipate relatively quickly.

Provisions to mitigate groundwater seepage will likely be required, including geotechnical provisions to assure firm excavation bottoms. These provisions include installation of localized sumps and/or gravel trenches to collect and convey groundwater seepage and placement of crushed rock to stabilize compromised excavation bottoms.

While we do not anticipate significant quantities of groundwater, regulatory provisions to assure proper handling and disposal of water from the site may also be required, depending on the intensity of the seepage. Regulatory considerations and provisions related to handling and disposal of groundwater seepage should be evaluated by the team a sufficient time prior to the start of construction.

Although groundwater seepage may impact temporary excavations, it will not impact permanent design considerations.

5.7 ON-SITE MATERIAL

A significant percentage of large-sized particles will be generated from the on-site excavations, particularly within the upper 10 to 30 feet. These large-sized particles will generally be difficult to re-use on site without processing to meet the specifications presented herein for fill material.

The remainder of on-site materials are suitable for re-use in required fills.

Concrete and asphalt generated from the required demolition are suitable for re-use in compacted fills provided the concrete and asphalt are processed and placed as recommended herein.

6.0 RECOMMENDATIONS

6.1 FOUNDATIONS

6.1.1 Tower – Mat Foundation and Drilled Shafts

The soil present at the planned foundation levels is suitable for support of the anticipated applied bearing pressures, on the order of 15,000 to 20,000 psf, noting that the planned excavation will result in a pressure release on the order of 6,500 to 7,500 psf so that the net applied bearing pressure will be on the order of 8,500 to 13,500 psf.

We anticipate settlement of the mat foundation due to the net applied bearing pressure to be on the order of 2 inches or less within the footprint of the mat foundation.

The proposed tower mat foundation may be designed assuming a soil modulus of subgrade reaction equal to 125 pci for the stiff and dense native soils. The recommended modulus value should be used to evaluate the deformation of the mat foundation for compatibility with the settlement estimate presented above.

If it is necessary to stiffen the foundation system for compatibility between foundation settlement and foundation deformation, deep foundations could be used. Deep foundations may also be required due to high uplift demands.

Formal, iterative analysis will be required once the design development is initiated to evaluate the need for deep foundations. If needed, for preliminary design purposes, 50-foot-long, 30-inch-diameter cast-in-drilled shafts may be designed assuming an allowable downward capacity of 450 kips and an allowable upward capacity of 300 kips.

6.1.2 Parking Garage Spread Footings - Allowable Bearing Pressure

The proposed parking garage may be supported on spread and continuous footings established in the dense or stiff native soil. Spread and continuous footings a minimum of 2 feet wide and established at least 2 feet below the lowest adjacent grade or top of floor slab may be designed using an allowable bearing pressure of 10,000 psf and increased by 500 psf for each additional

foot of width and/or embedment depth to a maximum value of 13,500 psf. The additional 500 psf increase is assumed to begin below 2 feet from the lowest adjacent grade or floor level.

The recommended bearing pressures are a net value and apply to the total of dead and long-term live loads and may be increased up to one-third when considering earthquake or wind loads. The weight of the footing and overlying backfill can be neglected when calculating footing loads.

Based on our preliminary analyses, we estimate total settlement for the proposed spread footings to be on the order of 1 inch or less and differential settlement across the parking garage and tower building footprint to be on the order of ½ inch or less, as the influence of the mat foundation would also contribute to settlement of the spread footings.

6.1.3 Lateral Resistance

For mat, spread, and continuous spread footings, lateral loading may be resisted by foundations using a passive pressure of 400 psf for footings where the concrete is placed directly against the undisturbed stiff or dense native soil.

A coefficient of friction equal to 0.4 may be used when calculating resistance to sliding for foundations bearing on undisturbed stiff or dense native soil. However, if a methane barrier is placed beneath the foundation, the coefficient of friction shall be reduced to 0.25.

The passive resistance and the frictional resistance may be used in combination without reduction and may also be increased by one-third when considering short-term seismic and wind loading.

6.1.4 On-Site Infiltration

On-site stormwater infiltration should be performed at least 40 feet below the bottom of the mat foundation.

6.2 PERMANENT BELOW-GRADE WALLS

6.2.1 Design Lateral Earth Pressures

For static conditions, drained below-grade building walls should be designed to resist a trapezoidal-shaped at-rest lateral earth pressure distribution equal to 44H psf as shown on Figure 8.

For seismic loading conditions, drained below-grade building walls should be designed to resist a triangular-shaped active lateral earth pressure distribution equal to 34H psf in conjunction and a triangular-shaped seismic lateral earth pressure distribution equal to 15H psf as shown on Figure 9.

In addition to the static and dynamic lateral earth pressures, it may be necessary to include the surcharge pressure from the foundations of the existing seven-story mixed-use building located at 1001 South Olive Street or to underpin the existing foundations to avoid transferring lateral loading to the new below-grade building walls.

For preliminary design purposes, we estimate that surcharge from the existing seven-story mixed-use building located at 1001 South Olive Street, assuming two subterranean levels, would be on the order 5,000 psf for the lower approximately one-half of the north below-grade building wall.

An alternative to designing the north below-grade building wall to support the surcharge loading due to the existing foundation is to provide direct support to the existing foundation using solider piles (aka underpinning).

As-built foundation information for the existing seven story building is required to develop final design recommendations to address the existing seven-story building.

It is also possible that lateral surcharge pressure may develop on the permanent below-grade walls from the foundations of the 25-story high-rise tower located at 1050 South Grand Avenue. For preliminary design purposes, the lower one-third of the west below-grade building wall within the horizontal limits of the high-rise tower should also be designed to resist a uniform lateral pressure equal to 400 psf to account for the assumed surcharge from the adjacent high-rise tower.

As-built foundation information for the existing 25-story tower is required to develop final design recommendations to address potential surcharge loading from the existing 25-story tower.

The upper 10 feet of the below-grade building walls should also be designed to resist a uniform lateral pressure of 100 psf to account for normal traffic loading as shown on Figures 8 and 9.

The load combination (active and seismic earth pressure) and the shape of the seismic pressure distribution are each based on "Seismic Earth Pressures on Cantilevered Retaining Structures" (Atik and Sitar, 2010) and "Seismic Earth Pressures: Fact or Fiction" (Lew, Sitar, and Atik, 2010).

Although not currently planned, if the surface at the top of the wall is sloped, the recommended lateral earth pressures should be increased as indicated in Table 3.

Table 3. Permanent Below-Grade Walls – Lateral Earth Pressures

Slope Inclination at Top of Wall (H:V)	Increase in Lateral Earth Pressure (percent)
1:1	200
1.5:1	165
2:1	150

6.2.2 Wall Back-Drainage

Permanent retaining walls should be constructed with adequate back-drainage to prevent the buildup of hydrostatic pressure behind the walls. Typically, a pre-fabricated geo-composite drainage board is fixed to the shoring wall, and the below-grade building wall is constructed by placing shotcrete directly against the drainage board.

In addition to drainage boards, the LADBS Grading Division (Grading Division) requires the installation of rock pockets consisting of 1 cubic foot of crushed rock spaced at 8-foot centers around the perimeter of the below-grade building walls to promote drainage.

The Grading Division requires each rock pocket to be drained at each 8-foot center back into the building and discharged to a suitable outlet. Drainage and discharge provisions should be included by others on the design drawings.

The impact of the Grading Division's back-drainage requirements on the design and construction of the proposed development is complicated by an LADBS requirement related to methane mitigation. The methane mitigation requirement is to include vent risers at each penetration through the below-grade building wall for the purpose of mitigating the potential for methane gas to enter the building through the penetrations.

The combined result of the two requirements is that an alternative method to provide back-drainage in a manner that meets requirement may be desirable.

One alternative method includes perimeter drainage elements at the base of the below-grade building walls. In this case, per LADBS requirements, the perimeter drainage element could be drained into the building at fewer locations and conveyed to the building sump system. Therefore, the number of vent risers required as a function of the wall back-drainage system could be significantly reduced.

6.3 FREE-STANDING RETAINING WALLS

6.3.1 Foundations

Free-standing retaining wall foundations should be established on at least 2 feet of properly compacted fill soil. Wall foundations supported on properly compacted fill and established at least 2 feet below the lowest adjacent grade may be designed using an allowable bearing pressure of 4,000 psf. To resist lateral loading, a coefficient of friction equal to 0.4 may be used in conjunction with a passive pressure of 300 psf.

6.3.2 Design Lateral Earth Pressures

Drained, free-standing retaining walls should be designed to resist an equivalent fluid pressure equal to 30 pcf. If the surface at the top of the wall is sloped, the recommended lateral earth pressures should be increased as indicated in Table 3.

6.3.3 Wall Back-Drainage

Permanent retaining walls should be constructed with adequate back-drainage to prevent the buildup of hydrostatic pressure behind the walls. The installation of drainage boards on the back of the walls, in conjunction with conventional weep holes at the base of the walls, would provide adequate drainage. As an alternative, a collector pipe could be installed at the base of the wall and discharged to a suitable outlet.

6.4 TEMPORARY EXCAVATIONS AND VERTICAL CUTS

If necessary, temporary, unsurcharged slopes should not exceed a 1H:1V gradient when constructed in existing fill and/or native material. Such temporary slopes should not exceed 15 feet in height.

Temporary vertical cuts that will be beneficial for foundation construction may be made into the dense and stiff native soils but should not exceed 5 feet in height.

Temporary cut slopes should be protected from erosion by directing surface water away by placing sand bags at the top of the slopes and during wet weather, covering the slopes with plastic sheeting.

6.5 TEMPORARY SHORING

6.5.1 Temporary Shoring Design Lateral Earth Pressures

Typically, cantilevered shoring is feasible for retained heights of approximately 15 feet or less and braced shoring typically becomes economical for retained heights exceeding 15 feet. Cantilevered shoring should be designed to resist a triangular lateral earth pressure distribution where the maximum value is 34H psf. Internally braced shoring should be designed to resist a trapezoidal earth pressure distribution where the maximum value is equal to 44H psf. For cantilevered and braced shoring design, where the surface at the top of the shoring is sloped, the recommended lateral earth pressures should be increased as indicated in Table 3.

In addition to the lateral earth pressures from the weight of the retained soil, surcharge loading from the adjacent seven-story building will develop on the temporary shoring wall as well. For preliminary design purposes, we estimate that surcharge from the existing seven-story mixed-use tower located at 1001 South Olive Street, assuming two subterranean levels, would be on the order 5,000 psf for the lower approximately one-half of the north below-grade building wall.

An alternative to designing the north below-grade building wall to support surcharge loading due to the existing foundation is to provide direct support to the existing foundation using solider piles (aka underpinning).

As-built foundation information for the existing seven-story building is required to develop final design recommendations to address the existing seven-story building.

It is also possible that lateral surcharge pressure may develop on the temporary shoring below-grade wall from the foundations of the 25-story high-rise tower located at 1050 South Grand Avenue. For preliminary design purposes, the lower one-third of the west below-grade building wall within the horizontal limits of the high-rise tower should also be designed to resist a uniform lateral pressure equal to 400 psf to account for the assumed surcharge from the adjacent high-rise tower.

As-built foundation information for the existing 25-story tower is required to develop final design recommendations to address potential surcharge loading from the existing 25-story tower. The upper 10 feet of the below-grade building walls should be designed to resist a uniform lateral pressure of 100 psf to account for normal traffic loading as shown on Figures 8 and 9.

In addition, when developing design drawings for temporary shoring, it would be prudent to consider the location of construction cranes and other potentially heavy equipment or loads that may act against the shoring system.

6.5.2 Soldier Piles

For design of soldier piles spaced at least 2 diameters on-centers, the allowable lateral bearing value (passive value) of the native soil below the level of excavation may be assumed to be 400 psf per foot of depth, up to a maximum of 4,000 psf of depth. To develop the full lateral value, provisions should be taken to ensure firm contact between the soldier piles and the undisturbed soil.

If the embedded portion of the soldier pile shaft is filled with lean-mix concrete with a minimum compressive strength of 2,000 psi, the effective width of the soldier pile shaft for use in developing passive resistance may be assumed to be twice the diameter of the shaft. If the embedded portion of the soldier pile shaft is filled with other material (such as low-strength sand-cement slurry), the effective width of the soldier pile should be limited to be the diagonal dimension of the soldier pile beam.

The frictional resistance between the soldier piles and the retained earth may be used in resisting the downward component of the tieback anchor loads. For design, the coefficient of friction between the soldier piles and the retained earth is 0.4. This value is based on the assumption that uniform full bearing will be developed between the steel soldier beam and the shaft backfill material and retained earth.

In addition, provided that the portion of the soldier piles below the excavated level is backfilled with structural concrete, the soldier piles below the excavated level may be used to resist downward loads. For resisting the downward loads, the frictional resistance between the concrete soldier piles and the soil below the excavated level may be taken equal to 400 psf for drilled solider piles. For soldier piles that are vibrated into the supporting soil, the frictional resistance between the soldier piles and the soil below the excavated level may be taken as 800 psf.

If vibratory methods are used to install solider beams, the diagonal of the solider beam may be used for the width when computing allowable passive resistance.

Vibration for solider piles should not be used within 80 feet of existing structures and the peak particle velocity should not exceed ½ inch per second. If the peak particle velocity is exceeded, the vibration installation operation should be terminated and a mitigation plan should be submitted by the contractor for review and approval prior to resuming vibration.

Pre-drilling, if used in conjunction with vibratory methods, should not extend below the bottom of the planned excavation and the diameter of the pre-drilling auger should be less than the beam diagonal.

6.5.3 Timber Lagging

Continuous lagging will be required between the soldier piles. The soldier piles and anchors should be designed for the full anticipated lateral pressure; however, the pressure on the lagging will be less due to arching in the soil. For clear spans of up to 6 feet, we recommend that lagging be designed for a triangular distribution of earth pressure where the maximum pressure is 400 psf at the mid-line between soldier piles and 0 psf at the soldier piles.

6.5.4 Tiebacks

Tieback friction anchors may be used to resist lateral loads. For design purposes, it may be assumed that the active wedge adjacent to the shoring is defined by a plane drawn at 35 degrees with the vertical through the bottom of the excavation. The anchors should extend at least 20 feet beyond the potential active wedge and to a greater length as necessary to develop the desired capacities.

The capacities of anchors should be determined by testing the initial anchors as outlined below. We anticipate that gravity-filled anchors will be capable of achieving an allowable bond strength of 1 kips to 3 kips per lineal foot of anchor, depending on the method of construction. A variety of methods is available for construction of anchors. If post-grouted anchors are used, we estimate the anchors will develop resistance on the order of three times the estimated value.

We recommend that the shoring designer and contractor be responsible for selecting the appropriate bond length and installation methods to achieve the required capacity.

Only the frictional resistance developed beyond the active wedge would be effective in resisting lateral loads. If the anchors are spaced at least 6 feet on-centers, reduction in the capacity of the anchors does not need to be considered due to group action.

The anchors are commonly installed at angles of 15 to 40 degrees below the horizontal; however, in many cases it is necessary to use steeper inclinations where adjacent private property is present. Caving of the anchor holes should be anticipated and provisions made to minimize such caving. The anchors should be filled with concrete placed by pumping from the tip out, and the concrete should extend from the tip of the anchor to the active wedge. To minimize chances of caving, we suggest that the portion of the anchor shaft within the active wedge be backfilled with sand before testing the anchor. This portion of the shaft should be filled tightly and flushed with the face of the excavation. The sand backfill may contain a small amount of cement to allow the sand to be placed by pumping. For 8-inch-diameter or less post-grouted anchors, the anchor may be filled with concrete to the surface of the shoring.

Our representative should select a representative number of the initial anchors for 24-hour, 200 percent tests and 200 percent quick tests. The purpose of the 200 percent test is to verify the friction value assumed in design. The anchors should be tested to develop twice the assumed friction value. Where satisfactory tests are not achieved on the initial anchors, the anchor diameter and/or length should be increased until satisfactory test results are obtained.

For post-grouted anchors where concrete is used to backfill the anchor along its entire length, the test load should be computed as required to develop the appropriate friction along the entire bonded length of the anchor.

We estimate that the influence of the post-grouting and the adjacent soil within the bonded length of the anchors will be less than 5 feet from the anchor.

Total deflection during the 24-hour, 200 percent tests should not exceed 12 inches during loading. Anchor deflection should not exceed 0.75 inch during the 24-hour period, measured after the 200 percent test load is applied. If the anchor movement after the 200 percent load has been applied for six hours is less than 0.5 inch and the movement over the previous four hours has been less than 0.1 inch, the test may be terminated.

For the quick 200 percent tests, the 200 percent test load should be maintained for 30 minutes. The total deflection of the anchor during the quick 200 percent tests should not exceed 12 inches. Anchor deflection after the 200 percent test load has been applied should not exceed 0.75 inch during the 30-minute period. Where satisfactory tests are not achieved on the initial anchors, the anchor diameter and/or length should be increased until satisfactory test results are obtained.

All of the production anchors should be pre-tested to at least 150 percent of the design load. Total deflection during the tests should not exceed 12 inches. The rate of creep under the 150 percent test should not exceed 0.1 inch over a 15-minute period for the anchor to be approved for the design loading.

After a satisfactory test, each production anchor should be locked off at the design load. The locked-off load should be verified by rechecking the load in the anchor. If the locked-off load varies by more than 10 percent from the design load, the load should be reset until the anchor is locked off within 10 percent of the design load. The installation of the anchors and the testing of the completed anchors should be observed by a representative of our firm.

6.5.5 Raker Bracing

As an alternative to tiebacks, raker bracing may be used to internally brace the soldier piles. If used, raker bracing could be supported laterally by temporary concrete footings (aka deadmen) or by the permanent interior footings. For design of such temporary footings poured with the bearing surface normal to the rakers inclined at 45 to 60 degrees with the vertical, a bearing value of 6,000 psf may be used for footings on the dense or stiff native soil provided the shallowest point of the footing is at least 1 foot below the lowest adjacent grade. To reduce movement of the shoring, the rakers should be tightly wedged against the footings and/or shoring system.

6.5.6 Monitoring

Some means of monitoring the performance of the shoring system is recommended. Monitoring should consist of periodic surveying of the lateral and vertical locations of the tops of all the soldier piles. When design of the shoring system has been finalized, we can discuss this further with the design consultants and the contractor.

It is difficult to accurately predict the amount of deflection of a shoring system. It should be realized, however, that some deflection will occur. We estimate that this deflection could be on the order of 1 inch at the top of the shored embankment. If greater deflection occurs during construction, additional bracing may be necessary to minimize settlement of the utilities in the adjacent streets. If it is desired to reduce the deflection of the shoring, a greater active pressure could be used in the shoring design.

6.5.7 Shoring Construction Considerations

Due to the presence of localized fill material, cobbles, and boulders; granular soil that may be subject to caving; and potential groundwater seepage perched on fine-grained layers at depth, difficult drilling is expected for soldier pile and tieback installations.

6.6 FLOOR SLABS

The tower floor slab will be established above the top of the mat foundation; therefore, the slab in this area can be supported on properly compacted fill soil. Within the parking garage, the floor slab may be established on the stiff and dense native soils present at the site.

Satisfactory subgrade support for floor slabs supporting up to an estimated 400 psf areal loading on properly compacted fill and/or stiff or dense native soil can be obtained. Typically, it is common to include a capillary break beneath building floor slabs that will have moisture-sensitive flooring. If used, the capillary break should consist of 6 inches of gravel underlying a 15-mil HDPE membrane. However, since the lowest levels will be used for parking, and will not include moisture-sensitive flooring, the capillary break section may be omitted.

6.7 SEISMIC DESIGN

As noted previously, the proposed tower will be designed using a non-prescriptive seismic design approach as permitted in Section 104.11 of the CBC. This approach allows the use of alternative methods to determine the design lateral forces on the tower in lieu of CBC-prescriptive provisions.

LADBS approved the CBC provision in LADBS Information Bulletin P/BC 2014-123 titled *Alternative Design Procedure for Seismic Analysis and Design of Tall Buildings and Buildings Utilizing Complex Structural Systems.* Site-specific shear wave velocity measurements will likely be required as part of this process.

The proposed parking garage will be designed in accordance with LABC-prescribed methods. Table 4 summarizes the final design acceleration parameters based on a Site Class D.

Table 4. Seismic Design Parameters

Seismic Design Parameter	Short Period	1 Second Period
MCE Spectral Acceleration	S_s = 2.305 g	S_1 = 0.810 g
Site Class	D	
Site Coefficient	F_a = 1.00	F_v = 1.30
Adjusted Spectral Acceleration	S_{MS} = 2.305 g	S_{M1} = 1.216 g
Design Spectral Response Acceleration Parameters	S_{DS} = 1.537 g	S_{D1} = 0.810 g

Please note that the site class could be upgrade to Site Class C pending the results of site-specific shear wave velocity measurements.

6.8 ON-SITE INFILTRATION

In accordance with the City of Los Angeles Bureau of Sanitation Low Impact Development guidelines (County of Los Angeles, 2014), the invert of on-site infiltration must be at least 10 feet above the seasonal high groundwater level. Considering the groundwater level at the site is approximately 120 feet BGS, corresponding to approximately Elevation 129, and the bottom of the mat foundation will established at approximately Elevation 186, we recommend that stormwater infiltration be performed between Elevations 146 and 139, at least 40 feet below the bottom of the mat foundation and at least 10 feet above the seasonal high groundwater level.

Site-specific percolation testing is required to design drywells.

Our representative should observe the installation of the drywells to confirm that suitable material is encountered at each location.

6.9 SITE PREPARATION

6.9.1 General

Site preparation for this project will primarily include exposing the bottom of foundations and floor slabs and preparing soil at the bottom of trenches, behind below-grade walls, and behind free-standing site retaining walls to receive backfill.

For foundation and floor slab support, the exposed bottoms do not require special preparation, except when disturbed by construction activities. In this case, loose or otherwise disturbed soil should be removed and either replaced with structural concrete for footing bottoms or re-compacted prior to the placement of concrete for floor slabs.

For areas to receive fill and/or beneath other flatwork (walkways and driveways), the upper 6 inches should be scarified and re-compacted to the degree of relative compaction recommended in Section 6.10.2.

6.9.2 Groundwater Seepage

If groundwater seepage is encountered within foundation excavations, the seepage should be collected and disposed of in accordance with regulatory guidelines. If seepage results in disturbance and/or softening of the excavation bottom, the disturbed material should be removed and replaced with 1-inch-minus crushed rock to provide a firm and unyielding base.

6.10 GRADING CONSIDERATIONS

6.10.1 General

If not carefully executed, site preparation can result in the presence of disturbed and/or excessively soft soil conditions. This may require additional effort to mitigate or in more extreme cases, if not detected, could result in significant costs to repair damage to flatwork or structures.

Earthwork should be planned and executed to minimize subgrade disturbance. Soil that has been disturbed during site preparation activities and/or soft or loose zones identified during probing should be removed beneath floor slabs.

6.10.2 Compaction

All granular fill material should be compacted to at least 95 percent of the maximum dry density at or near the optimum moisture content, as determined by ASTM D1557. Cohesive fills, though not anticipated for this project, should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, and moisture conditioned 2 to 4 percent over the optimum moisture content.

Fill material should be placed in loose lifts not exceeding 8 inches in thickness, properly moisture conditioned, and mechanically compacted to the minimum required density. For granular fill, compaction may be achieved using heavy equipment and vibration.

6.10.3 Site Drainage

Adequate site drainage should be maintained at all times. Site drainage should be collected and routed to suitable discharge locations.

6.11 MATERIALS FOR FILL

6.11.1 General

The fill material should be free of organic matter and other deleterious material and, in general, should consist of particles no larger than 6 inches in largest dimension. It should be noted that a significant percentage of the material in the upper approximately 5 to 25 feet of the on-site material planned for excavation may be too large for re-use in fill. The following sections provide recommendations for the re-use of on-site material in compacted fill and for the use of imported material in required fill.

6.11.2 On-Site Native Soil

The on-site native granular soil is suitable for use in the required fill provided particles larger than 3 inches in largest dimension are removed. Where larger-sized material is used, the percentage of these materials in a representative section of the fill should be limited to 5 percent.

The on-site native silty soil is not considered suitable for use in structural fill or within 2 feet of floor slabs or other flatwork but may be used as secondary fill in landscaping areas.

6.11.3 Imported Granular Material

Imported fill material should have a sand equivalent of at least 35 and should be approved by our firm prior to import to the site.

7.0 CONSTRUCTION OBSERVATION

Geotechnical testing and observation during construction is considered to be a continuing part of the geotechnical consultation. To confirm that the recommendations presented herein remain applicable, our representative should be present at the site to provide appropriate observation and testing during the following primary activities:

- Solider pile and tieback installation
- Tieback anchor testing
- Lagging installation
- Installation of wall back-drainage provisions
- Foundation bottom observation and approval
- Placement and compaction of fill material
- Removal of shoring within the public right-of-way upon completion of the project
- De-tensioning of tieback anchors
- Installation of drywells

8.0 LIMITATIONS

We have prepared this report for use by 1045 Olive, LLC and members of the design and construction team for the proposed development. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

As noted herein, supplemental field explorations are required to confirm and/or revise the recommendations presented herein, including the following:

- Additional field explorations to provide comprehensive coverage over the site
- Shear wave velocity measurements for use in performance-based design
- Field percolation testing for use in the design of deep drywells
- Soil gas testing to determine the methane mitigation requirements

Also, as noted, additional design information is required to confirm and/or revise the recommendations presented herein, including the following:

- Foundation loading for the seven-story mixed-use building (1001 South Olive Street) north of the site
- Foundation loading for the 25-story high-rise tower (1005 South Grand Avenue) west of the site
- Foundation deformation data based on the modulus of subgrade reaction

Soil explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The recommendations presented in this report are based on the current site development plan and structural information provided to us by the project team. If design changes are made, we should be retained to review our conclusions and recommendations and to provide a written evaluation or modification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with that degree of skill and care ordinarily exercised by reputable geotechnical consultants practicing in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

♦ ♦ ♦

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

GeoDesign, Inc.

John S. McKeown

John McKeown, C.E.G
Consulting Engineering Geologist



Signed 03/02/2018

Christopher J. Zadoorian, G.E.
Principal Engineer



Signed 03/02/2018

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FIGURES



VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

SITE LOCATION
LATITUDE: 34.041318°
LONGITUDE: -118.260910°

GEODESIGN INC
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Anaheim CA 92806
714.634.3701 www.geodesigninc.com

CRESCENT-2-02	**VICINITY MAP**	
MARCH 2018	PROPOSED HIGH-RISE TOWER DEVELOPMENT LOS ANGELES, CA	**FIGURE 1**

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File Name: J:\A-D\Crescent\Crescent-2\Crescent-2-02\Figures\CAD\Crescent-2-02-VM01.dwg | Layout: FIGURE 1

EXISTING
GRAND LOFTS

EXISTING 25-STORY
HIGH-RISE TOWER
1050 SOUTH GRAND AVENUE

EXISTING 2-STORY
COMMERCIAL STRUCTURE
1040 SOUTH GRAND AVENUE

EXISTING 7-STORY
MIXED-USE STRUCTURE
1000 SOUTH GRAND AVENUE

ALLEY (MARGO STREET)

ALLEY (MARGO STREET)

B-4◎

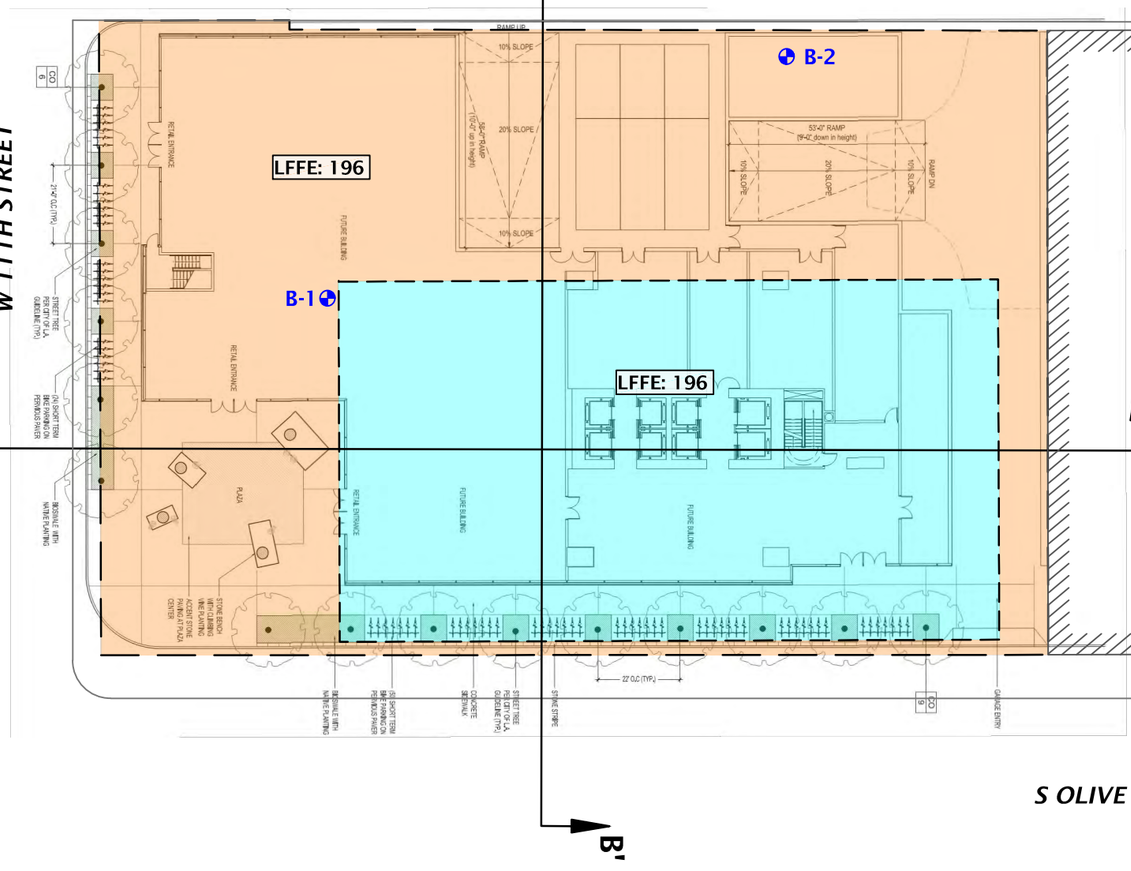
B-1◎

B-3◎

B-2◎

EXISTING SURFACE
PARKING LOT

W 11TH STREET



EXISTING 7-STORY
MIXED-USE BUILDING
1001 SOUTH OLIVE STREET

A

A'

B

B'

S OLIVE STREET

S OLIVE STREET

LEGEND:

- SITE BOUNDARY
- B-1◕ CURRENT BORING (GEODESIGN 2015)
- B-1◎ PRIOR BORING (GEODESIGN 2007)
- A — A' CROSS SECTION
- LIMITS OF PROPOSED 810-FOOT RESIDENTIAL TOWER
- LIMITS OF PROPOSED CONTIGUOUS 9-LEVEL PODIUM STRUCTURE
- LFFE: 196 PROPOSED LOWEST FINISHED FLOOR ELEVATION (FEET)

N

0 40 80

(SCALE IN FEET)

SITE PLAN BASED ON IMAGE OF SHEET L-100 1ST FLOOR LANDSCAPE PLAN DATED AUGUST 15, 2017 PREPARED BY ODA NEW YORK

SITE PLAN

FIGURE 2

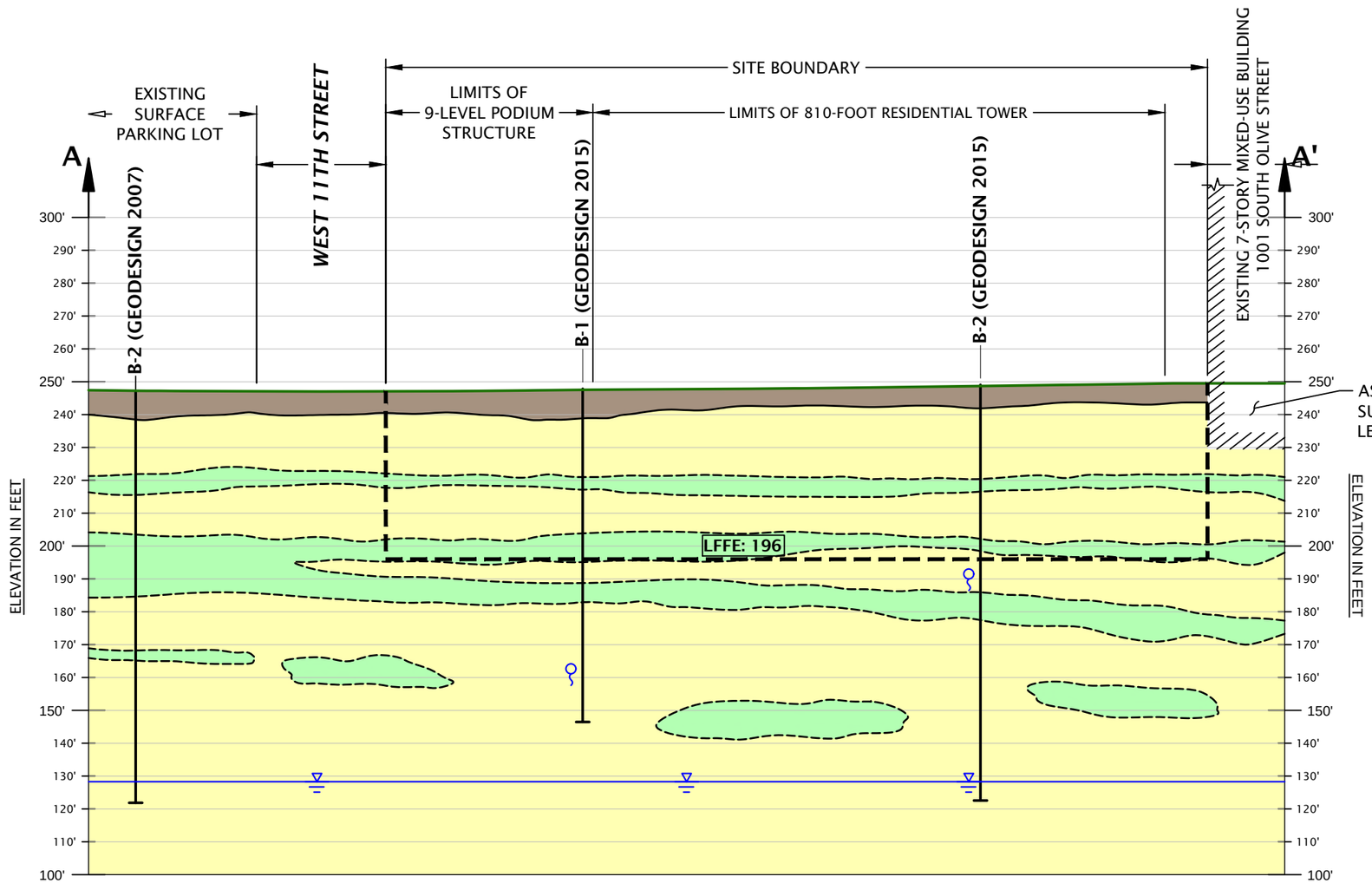
PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

CRESCENT-2-02

MARCH 2018

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LEGEND:

- EXISTING TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- FILL
- DENSE TO VERY DENSE SAND
- STIFF SILT AND CLAY
- GROUNDWATER SEEPAGE
- GROUNDWATER TABLE
- LFFE: 196 — LOWEST FINISHED FLOOR ELEVATION (FEET)

0 40 80
(VERTICAL SCALE IN FEET)

0 40 80
(HORIZONTAL SCALE IN FEET)

EXISTING TOPOGRAPHY OBTAINED FROM GOOGLE EARTH PRO NOVEMBER 5, 2015

GEOLOGIC CROSS SECTION A-A'

FIGURE 3

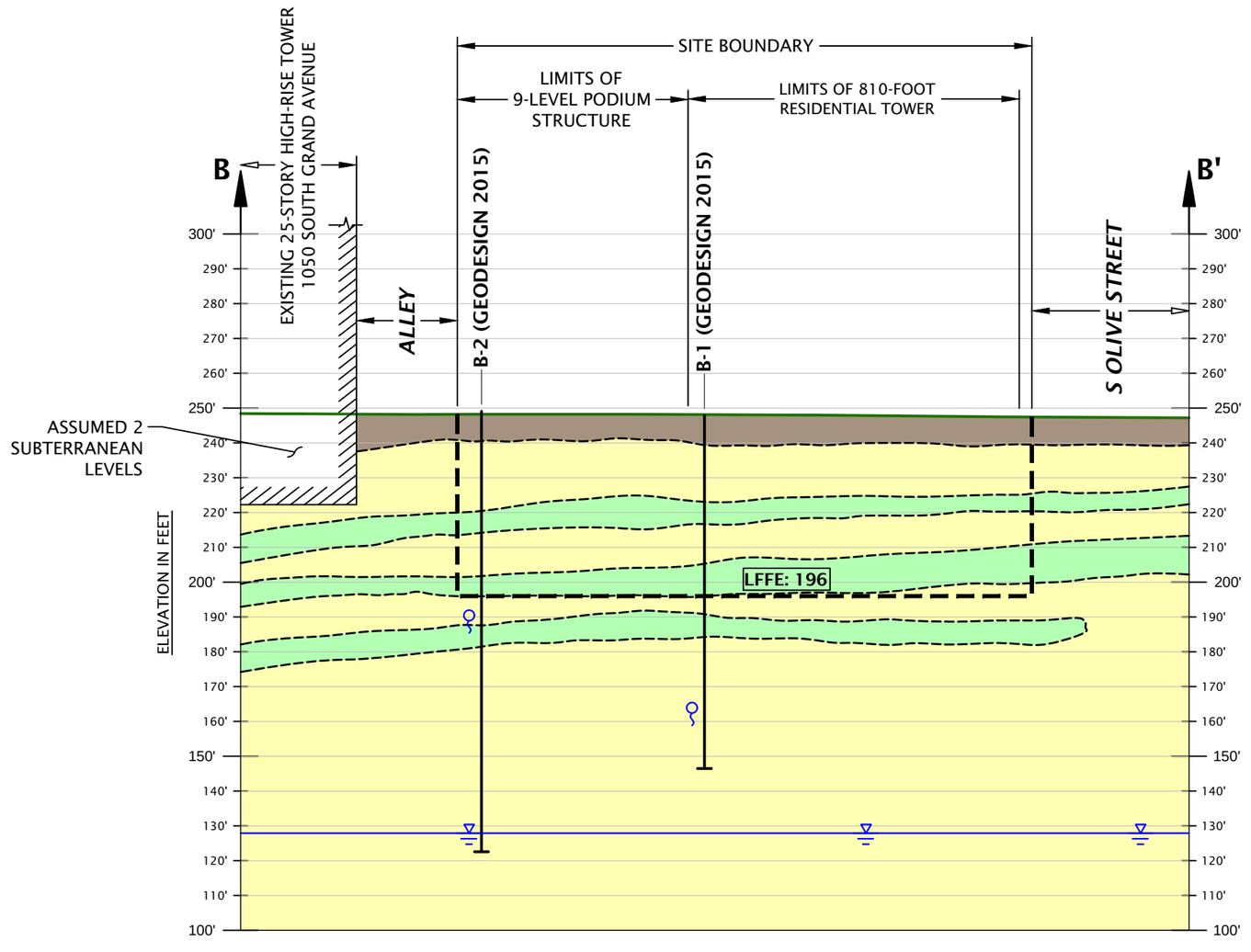
PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

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LEGEND:

- EXISTING TOPOGRAPHY
- BORING
- INTERPRETED CONTACT
- FILL
- DENSE TO VERY DENSE SAND
- STIFF SILT AND CLAY
- GROUNDWATER SEEPAGE
- GROUNDWATER TABLE
- LFFE: 196 — LOWEST FINISHED FLOOR ELEVATION (FEET)

0 40 80
(VERTICAL SCALE IN FEET)

0 40 80
(HORIZONTAL SCALE IN FEET)

EXISTING TOPOGRAPHY OBTAINED FROM
GOOGLE EARTH PRO NOVEMBER 5, 2015

GEOLOGIC CROSS SECTION B-B'

FIGURE 4

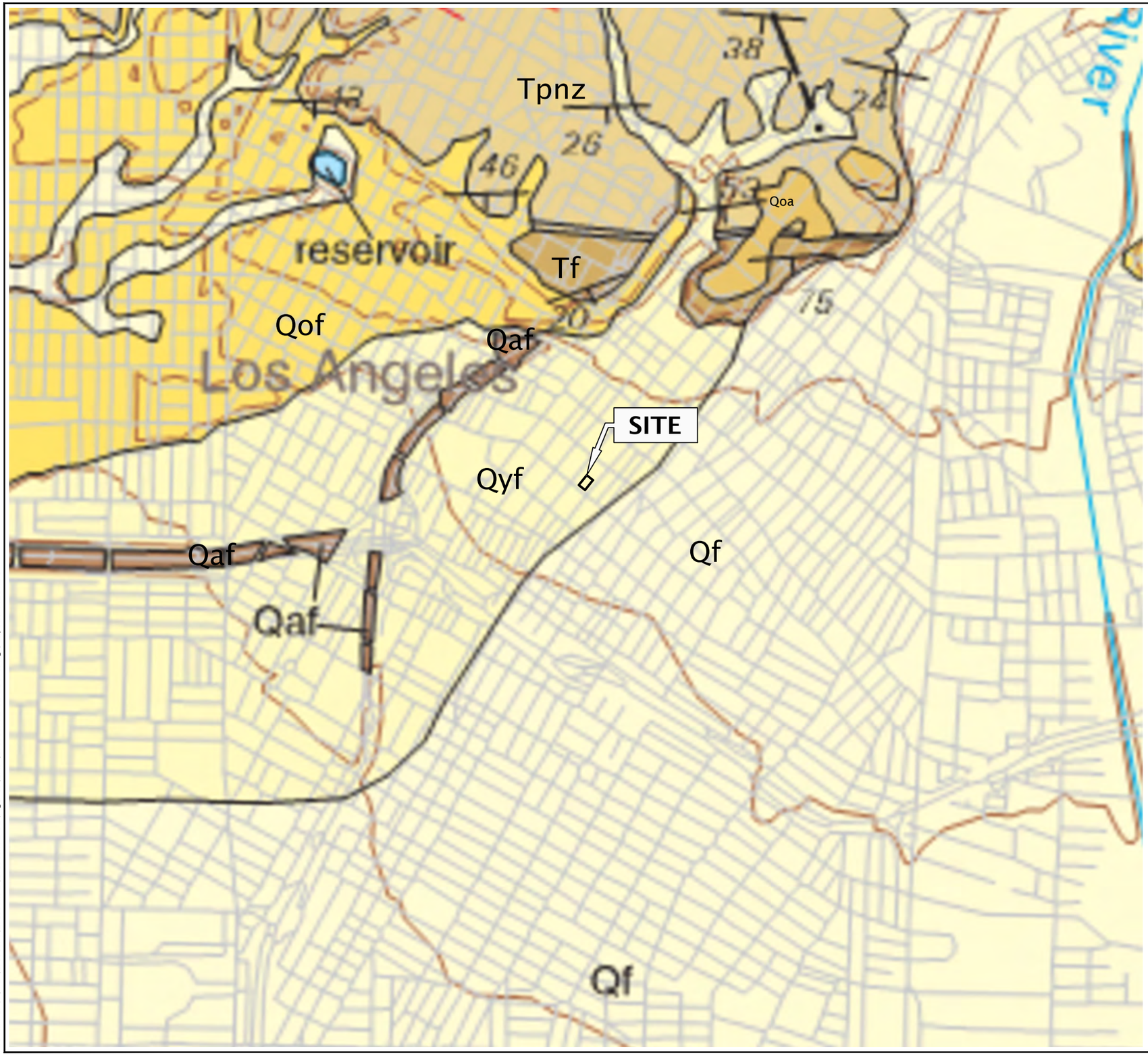
PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

CRESCENT-2-02

MARCH 2018

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LEGEND:

	SITE BOUNDARY
Qaf	ARTIFICIAL FILL
Qf	ALLUVIAL - FAN DEPOSITS (HOLOCENE) - UNCONSOLIDATED BOULDERY, COBBLEY, GRAVELLY, SANDY, OR SILTY ALLUVIAL DEPOSITS
Qyf	YOUNG ALLUVIAL - FAN DEPOSITS, UNDIVIDED (HOLOCENE AND LATE PLEISTOCENE) - UNCONSOLIDATED GRAVEL, SAND, AND SILT, BOULDERY NEAR MOUNTAIN FRONTS; DEPOSITED CHIEFLY FROM FLOODING STREAMS AND DEBRIS FLOWS
Qoa	OLD ALLUVIUM, UNDIVIDED (LATE TO MIDDLE PLEISTOCENE) - UNCONSOLIDATED TO MODERATELY INDURATED GRAVEL, SAND, AND SILT
Qof	OLD ALLUVIAL - FAN DEPOSITS, UNDIVIDED (LATE TO MIDDLE PLEISTOCENE) - SLIGHTLY TO MODERATELY CONSOLIDATED SILT, SAND, AND GRAVEL DEPOSITS ON ALLUVIAL FANS
Tpnz Tf	PUENTE FORMATION, SILTSTONE (EARLY PLIOCENE) - WELL-BEDDED, LIGHT GRAY SILTSTONE FERNANDO FORMATION - MASSIVE SILTSTONE (PLIOCENE)
	GEOLOGIC CONTACT
75	STRIKE DIP OF BEDDING

N

0 2000 4000

(SCALE IN FEET)

MAP BASED ON IMAGE OF PRELIMINARY GEOLOGIC MAP OF THE LOS ANGELES 30' X 60' QUADRANGLE, SOUTHERN CALIFORNIA, VERSION 1.0, DATED 2005 COMPILED BY ROBERT F. YERKES AND RUSSEL H. CAMPBELL, U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 2005-1019

LOCAL GEOLOGIC MAP

FIGURE 5

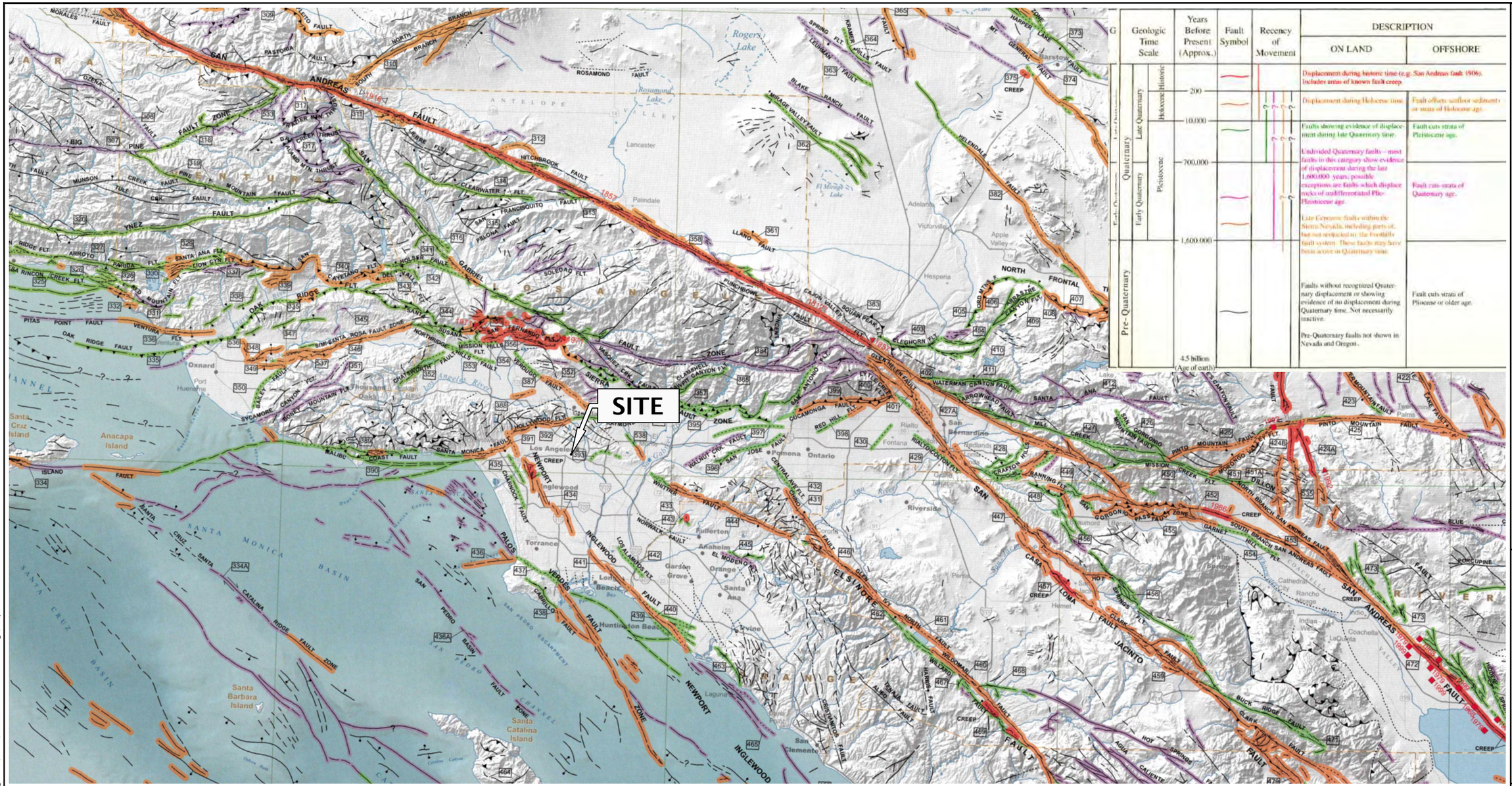
PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

CRESCENT-2-02

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File Name: J:\A-D\Crescent\Crescent-2\Crescent-2-02\Figures\CAD\Crescent-2-02-LG01.dwg | Layout: FIGURE 5



MAP BASED ON IMAGE OF FAULT ACTIVITY MAP DATED 2010 PREPARED BY THE CALIFORNIA DEPARTMENT OF CONSERVATION GEOLOGICAL SURVEY.

REGIONAL FAULT MAP

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

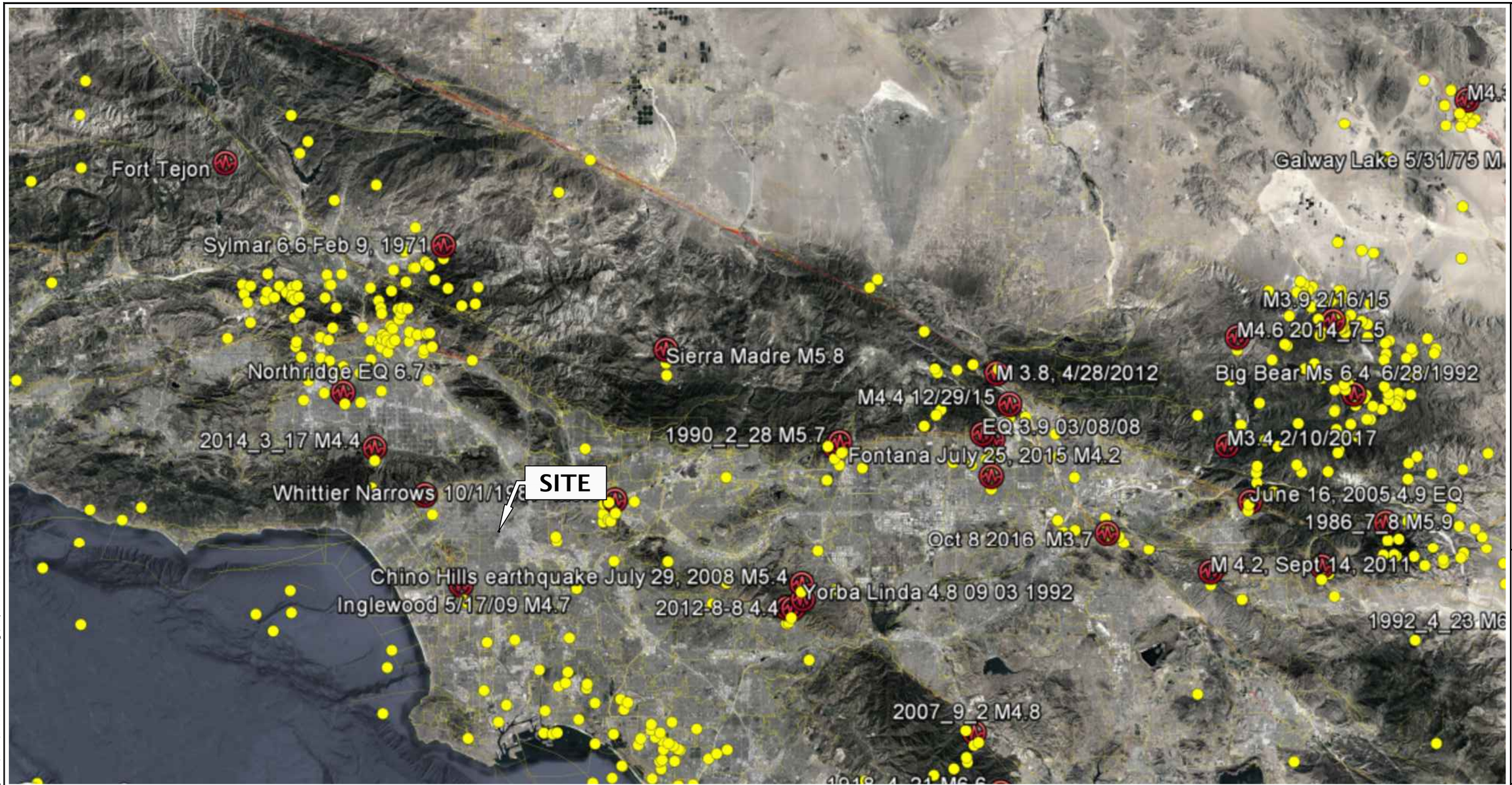
FIGURE 6

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N

0 10 MILES 20 MILES

(SCALE IN MILES)

MAP BASED ON ???????????

REGIONAL SEISMICITY MAP

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE 7

CRESCENT-2-02

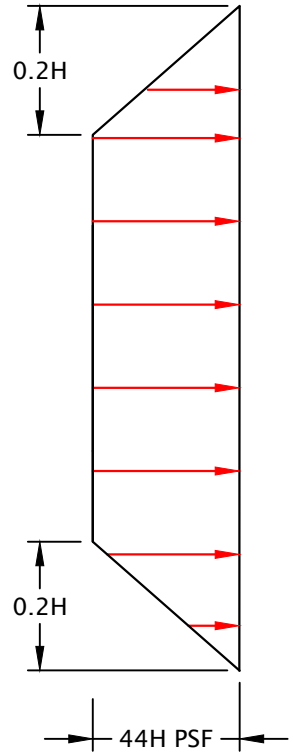
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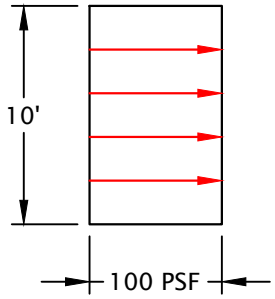
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File Name: J:\A-D\Crescent\Crescent-2\Crescent-2-02\Figures\CAD\Crescent-2-02-DET01.dwg | Layout: FIGURE 8

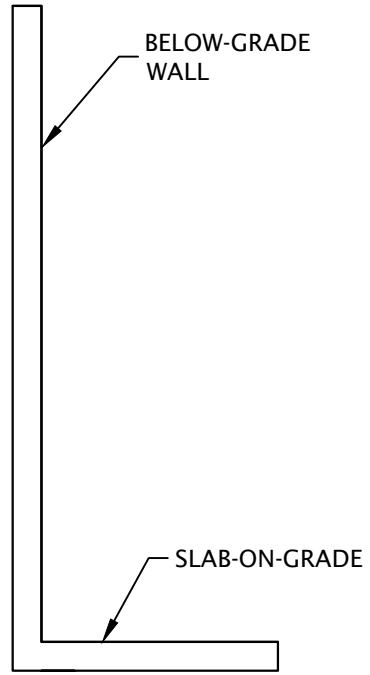
AT-REST LATERAL EARTH PRESSURE



+

TRAFFIC SURCHARGE





NOT TO SCALE

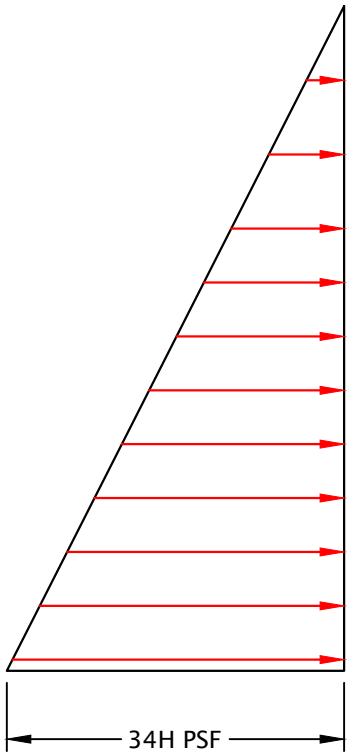
NOTE:
SURCHARGE FROM ADJACENT BUILDINGS NOT INCLUDED ON THIS FIGURE. SEE SECTION 6.2 OF REPORT TEXT FOR THIS ITEM.

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CRESCENT-2-02	**AT-REST LATERAL EARTH PRESSURE**	
MARCH 2018	PROPOSED HIGH-RISE TOWER DEVELOPMENT LOS ANGELES, CA	**FIGURE 8**

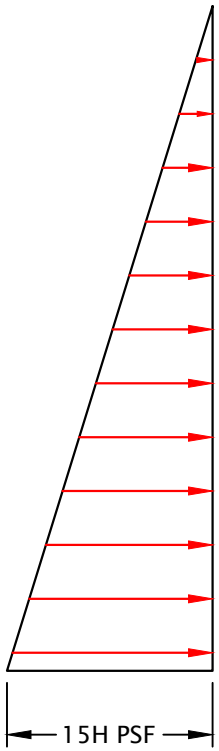
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File Name: J:\A-D\Crescent\Crescent-2\Crescent-2-02\Figures\CAD\Crescent-2-02-DET01.dwg | Layout: FIGURE 9

ACTIVE LATERAL EARTH PRESSURE



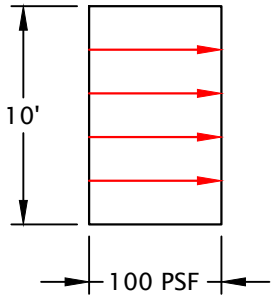
+

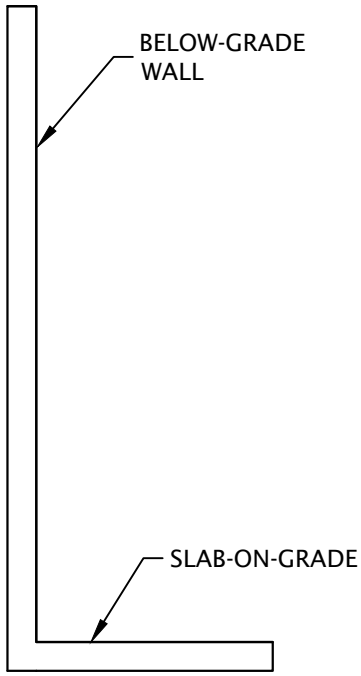
SEISMIC LATERAL EARTH PRESSURE



+

TRAFFIC SURCHARGE





NOT TO SCALE

NOTE:
SURCHARGE FROM ADJACENT BUILDINGS NOT INCLUDED ON THIS FIGURE. SEE SECTION 6.2 OF REPORT TEXT FOR THIS ITEM.

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CRESCENT-2-02	**SEISMIC LATERAL EARTH PRESSURE**	
MARCH 2018	PROPOSED HIGH-RISE TOWER DEVELOPMENT LOS ANGELES, CA	**FIGURE 9**

APPENDIX A

APPENDIX A

SUBSURFACE EXPLORATIONS

GENERAL

We drilled two borings (B-1 and B-2) at the site in July 2015 at the locations shown on Figure 2. Boring B-1 was drilled to a depth of 101.4 feet BGS using limited-access hollow-stem auger drilling equipment and boring B-2 was drilled to a depth of 126.5 feet BGS using truck-mounted hollow-stem auger drilling equipment. The exploration logs are presented in this appendix.

The locations of the explorations were determined in the field by rolling-wheel measurements from surveyed existing site features. This information should be considered accurate only to the degree implied by the methods used.

A member of our geotechnical staff observed and logged the explorations. We collected representative samples of the various soil encountered in the explorations.

Please note that for each episode of drilling, we included a soil classification key, as our classification system has evolved over the time of these explorations.

SOIL SAMPLING

Samples were collected from the borings using modified California split-spoon samplers in general accordance with ASTM D3550. The split-spoon samplers were driven into the soil with a 140-pound hammer free-falling 30 inches. The samplers were driven 18 inches or to refusal as indicated on the exploration logs. The number of blows required to drive the sampler the final 12 inches (or less if refusal is met) is recorded on the exploration logs, unless otherwise noted.

In addition, SPTs were performed in the borings in general accordance with ASTM D1586. The 2-inch-diameter, split-spoon sampler was driven into the soil with a 140-pound hammer free-falling 30 inches. The samplers were driven a total distance of 18 inches or to refusal as indicated on the exploration logs. The number of blow counts required to drive the sampler the final 12 inches is recorded (or less if refusal is met) is recorded on the exploration logs, unless otherwise noted.

Sampling methods and intervals are shown on the exploration logs.

SOIL CLASSIFICATION

The soil samples were classified in accordance with the "Exploration Key" (Table A-1) and "Soil Classification System" (Table A-2), which are presented in this appendix. The exploration logs indicate the depths at which the soils or their characteristics change, although the change actually could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

LABORATORY TESTING

MOISTURE CONTENT

We determined the natural moisture content of select soil samples in general accordance with ASTM D2216. The natural moisture content is a ratio of the weight of the water to soil in a test sample and is expressed as a percentage. The test results are presented in this appendix.

DRY DENSITY

Select soil samples were tested to determine the in situ dry density. The tests were performed in general accordance with ASTM D2937. The dry density is defined as the ratio of the dry weight of the soil sample to the volume of that sample. The dry density typically is expressed in units of pcf. The test results are presented in this appendix.

STRENGTH TESTING

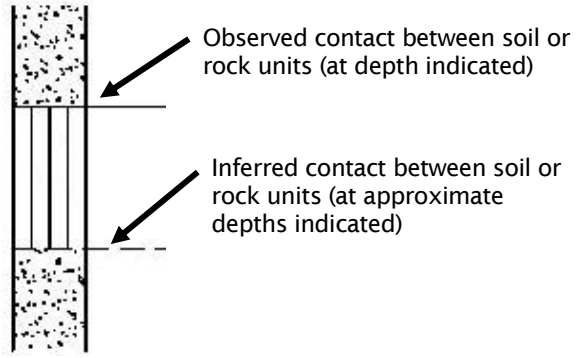
Direct shear testing was performed on select relatively undisturbed soil samples in general accordance with ASTM D3080. The test results are presented in this appendix.

CONSOLIDATION TESTING

We performed consolidation testing on select soil samples to determine the compressibility characteristics of the on-site soil in general conformance with ASTM D2435. The test results are presented in this appendix.

SYMBOL	SAMPLING DESCRIPTION
	Location of sample obtained in general accordance with ASTM D 1586 Standard Penetration Test with recovery
	Location of sample obtained using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D 1587 with recovery
	Location of sample obtained using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample obtained using Dames & Moore and 140-pound hammer or pushed with recovery
	Location of sample obtained using 3-inch-O.D. California split-spoon sampler and 140-pound hammer
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Nonplastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal

ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen

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EXPLORATION KEY

TABLE A-1

RELATIVE DENSITY - COARSE-GRAINED SOILS

Relative Density	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very Loose	0 – 4	0 - 11	0 - 4
Loose	4 – 10	11 - 26	4 - 10
Medium Dense	10 – 30	26 - 74	10 - 30
Dense	30 – 50	74 - 120	30 - 47
Very Dense	More than 50	More than 120	More than 47

CONSISTENCY - FINE-GRAINED SOILS

Consistency	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very Soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 - 4	3 – 6	2 - 5	0.25 - 0.50
Medium Stiff	4 - 8	6 – 12	5 - 9	0.50 - 1.0
Stiff	8 - 15	12 – 25	9 - 19	1.0 - 2.0
Very Stiff	15 - 30	25 – 65	19 – 31	2.0 - 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOILS (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVELS (< 5% fines)	GW or GP	GRAVEL
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt
			GW-GC or GP-GC	GRAVEL with clay
		GRAVELS WITH FINES (> 12% fines)	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SANDS (<5% fines)	SW or SP	SAND
		SANDS WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt
			SW-SC or SP-SC	SAND with clay
		SANDS WITH FINES (> 12% fines)	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS (50% or more passing No. 200 sieve)	SILT AND CLAY	Liquid limit less than 50	ML	SILT
			CL	CLAY
			CL-ML	silty CLAY
			OL	ORGANIC SILT or ORGANIC CLAY
		Liquid limit 50 or greater	MH	SILT
			CH	CLAY
			OH	ORGANIC SILT or ORGANIC CLAY
HIGHLY ORGANIC SOILS			PT	PEAT

MOISTURE CLASSIFICATION

Term	Field Test
dry	very low moisture, dry to touch
moist	damp, without visible moisture
wet	visible free water, usually saturated

ADDITIONAL CONSTITUENTS

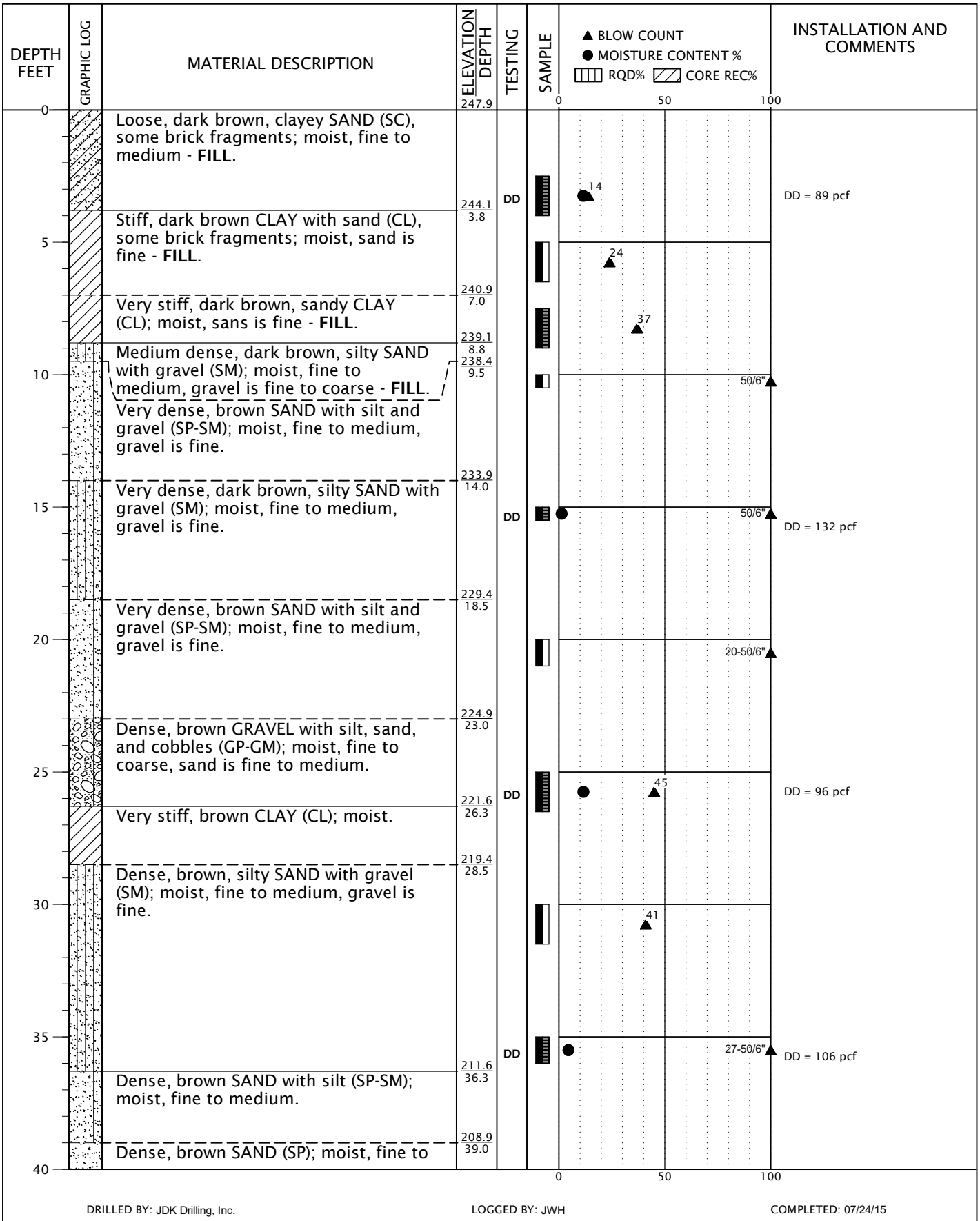
Secondary granular components or other materials such as organics, man-made debris, etc.

Percent	Silt and Clay In: Fine-Grained Soils	Silt and Clay In: Coarse-Grained Soils	Percent	Sand and Gravel In: Fine-Grained Soils	Sand and Gravel In: Coarse-Grained Soils
< 5	trace	trace	< 5	trace	trace
5 – 12	minor	with	5 – 15	minor	minor
> 12	some	silty/clayey	15 – 30	with	with
			> 30	sandy/gravelly	Indicate %

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SOIL CLASSIFICATION SYSTEM

TABLE A-2



DRILLED BY: JDK Drilling, Inc. LOGGED BY: JWH COMPLETED: 07/24/15

BORING METHOD: hollow-stem auger (see document text) BORING BIT DIAMETER: 8 inches

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BORING B-1

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-1

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % RQD% CORE REC% (0 50 100)	INSTALLATION AND COMMENTS
40		medium.				17-50/6"	
		Hard, brown, sandy CLAY (CL); moist, sand is fine.	204.9 / 43.0				
45				DD DS		32-50/5"	DD = 113 pcf
		Medium stiff, brown CLAY with sand (CL); moist, sand is fine.	199.9 / 48.0				
50						30	
		Medium dense, brown, silty SAND (SM); moist, fine to medium.	194.9 / 53.0				
55				DD CON DS		45	DD = 116 pcf
		Very stiff, brown, sandy CLAY (CL); moist, sand is fine.	189.9 / 58.0				
60						30	
		Dense, brown SAND with silt, gravel, and cobbles (SP-SM); moist, fine to medium, gravel is fine.	184.4 / 63.5				
65						49	
70						33	No recovery after two attempts at 70.0 feet.
75						18-50/5"	
		Very dense, brown, silty SAND with gravel (SM); moist, fine to medium, gravel is fine.	169.9 / 78.0				
80							

DRILLED BY: JDK Drilling, Inc. LOGGED BY: JWH COMPLETED: 07/24/15

BORING METHOD: hollow-stem auger (see document text) BORING BIT DIAMETER: 8 inches

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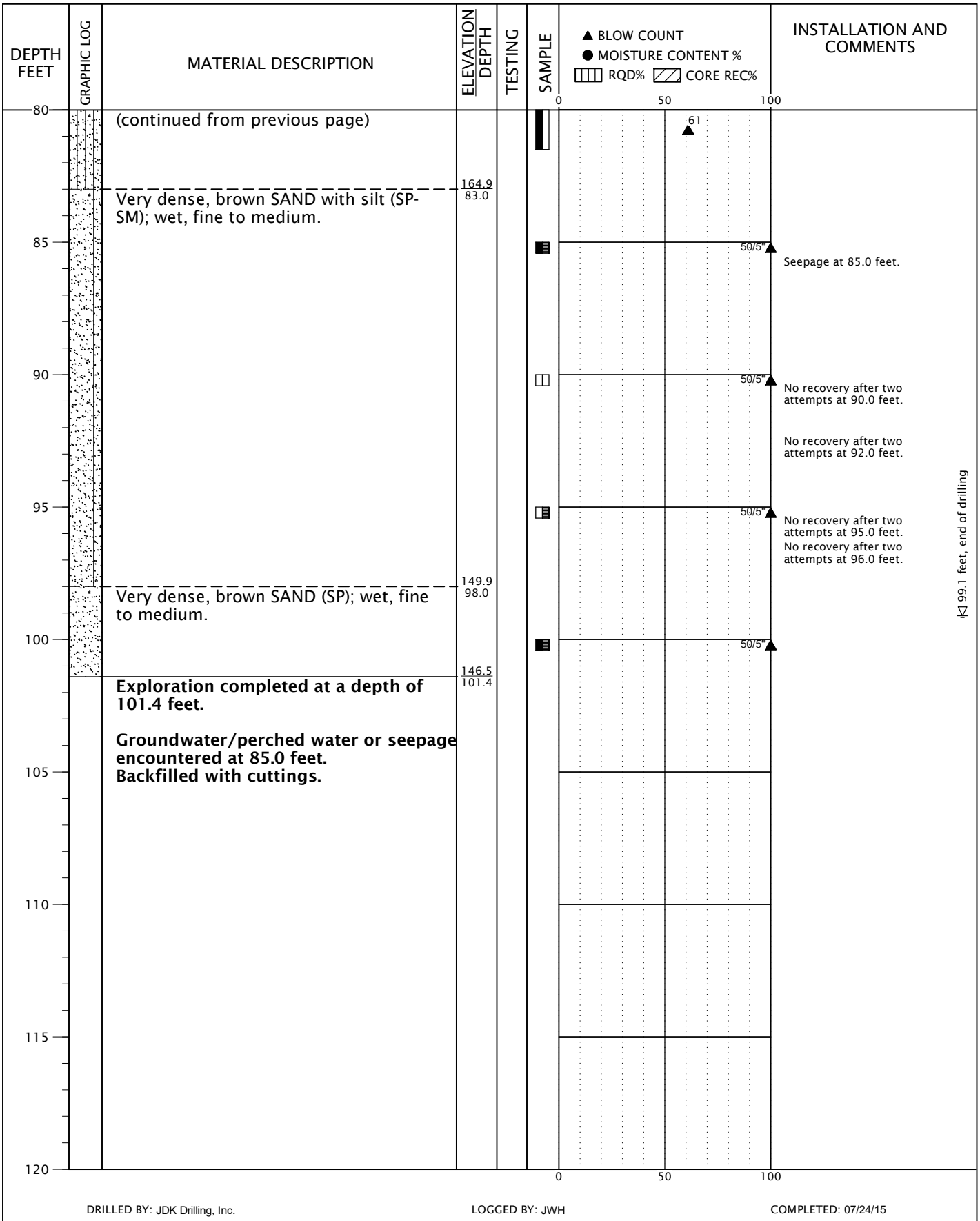
BORING B-1
(continued)

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PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-1

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT



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LOGGED BY: JWH

COMPLETED: 07/24/15

BORING METHOD: hollow-stem auger (see document text)

BORING BIT DIAMETER: 8 inches

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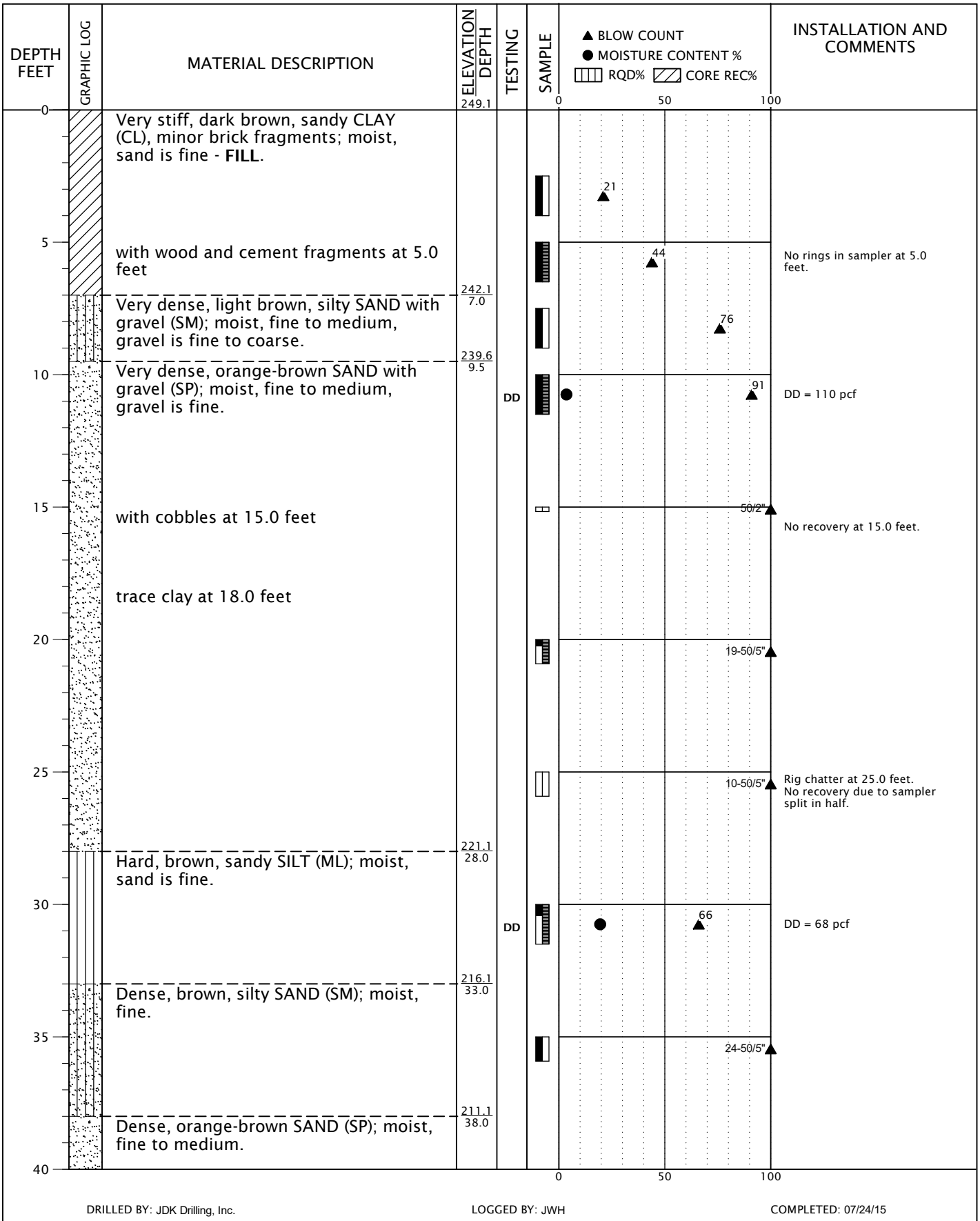
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BORING B-1
(continued)

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-1

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT



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LOGGED BY: JWH

COMPLETED: 07/24/15

BORING METHOD: hollow-stem auger (see document text)

BORING BIT DIAMETER: 8 inches

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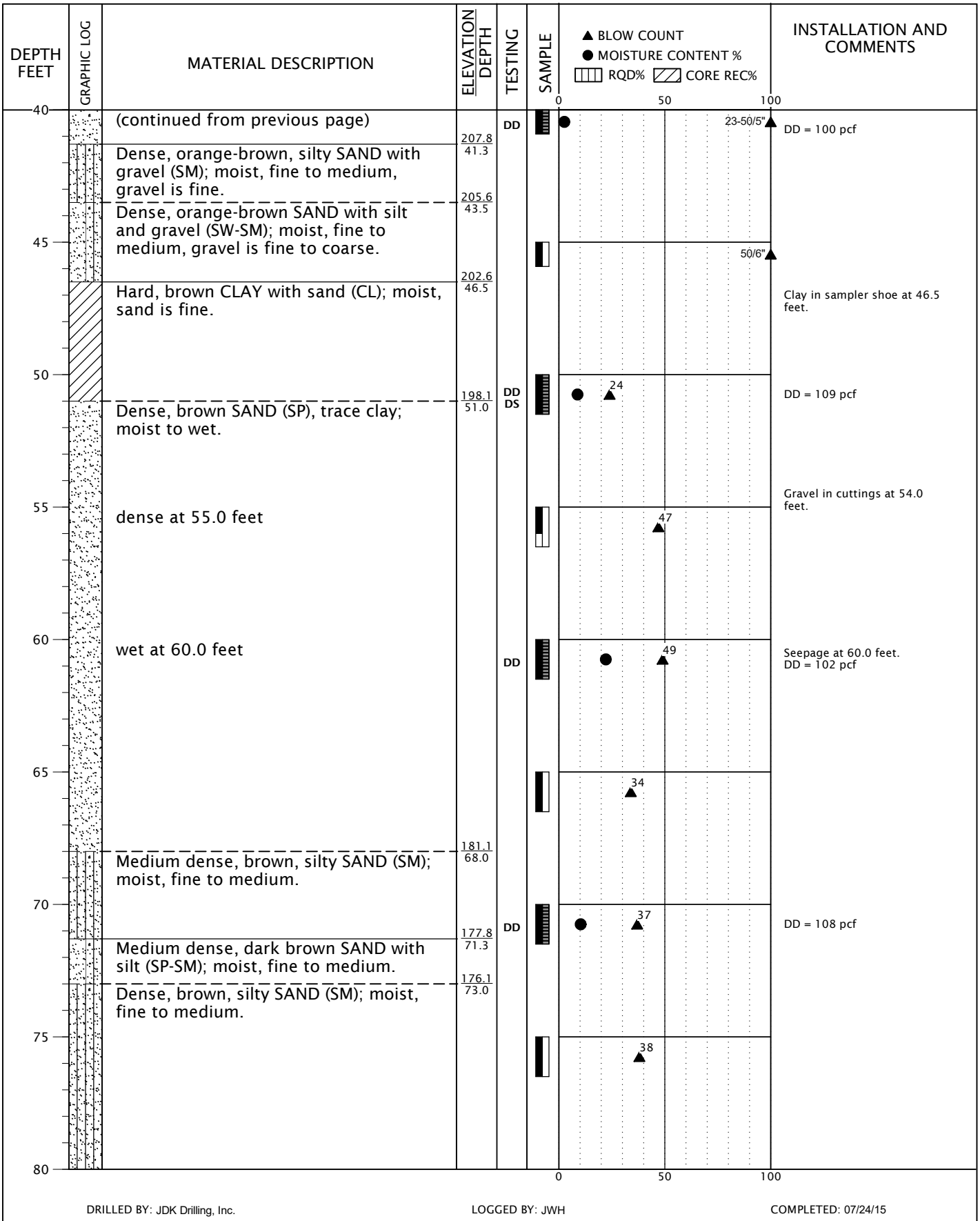
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BORING B-2

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-2

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT



DRILLED BY: JDK Drilling, Inc.

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COMPLETED: 07/24/15

BORING METHOD: hollow-stem auger (see document text)

BORING BIT DIAMETER: 8 inches

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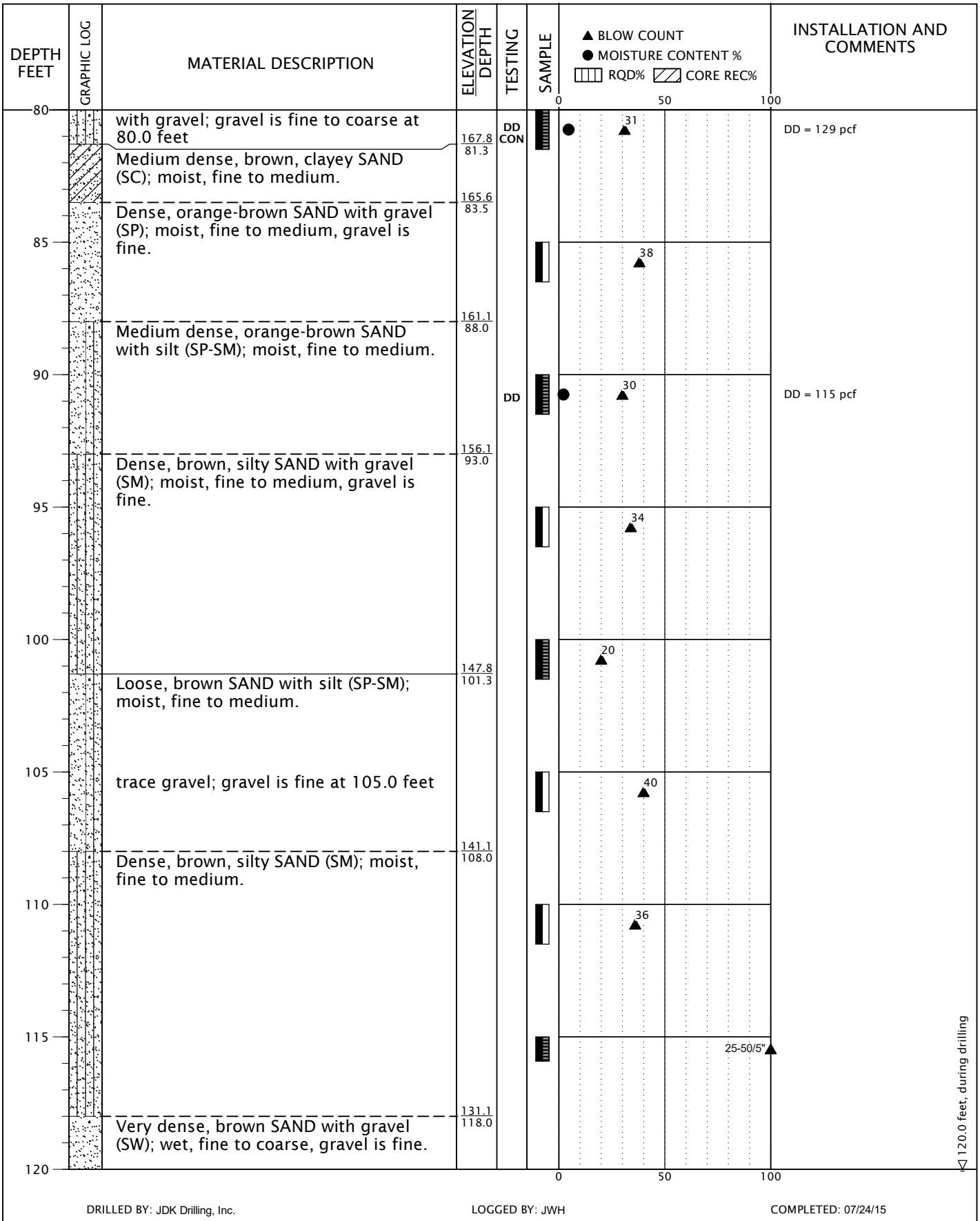
BORING B-2
(continued)

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PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-2

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT



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BORING METHOD: hollow-stem auger (see document text) BORING BIT DIAMETER: 8 inches

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT

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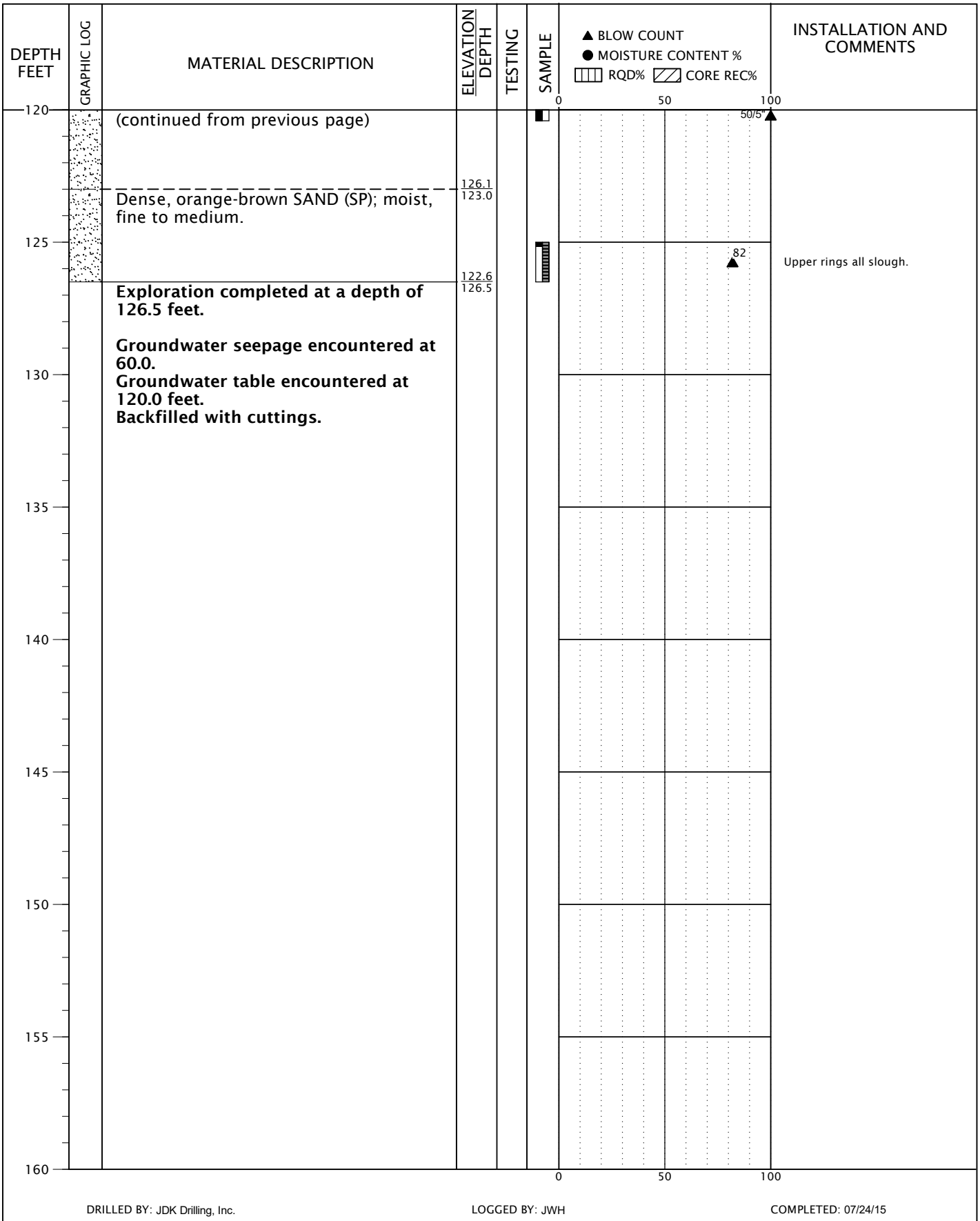
CRESCENT-2-02

BORING B-2
(continued)

MARCH 2018

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-2



DRILLED BY: JDK Drilling, Inc.

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COMPLETED: 07/24/15

BORING METHOD: hollow-stem auger (see document text)

BORING BIT DIAMETER: 8 inches

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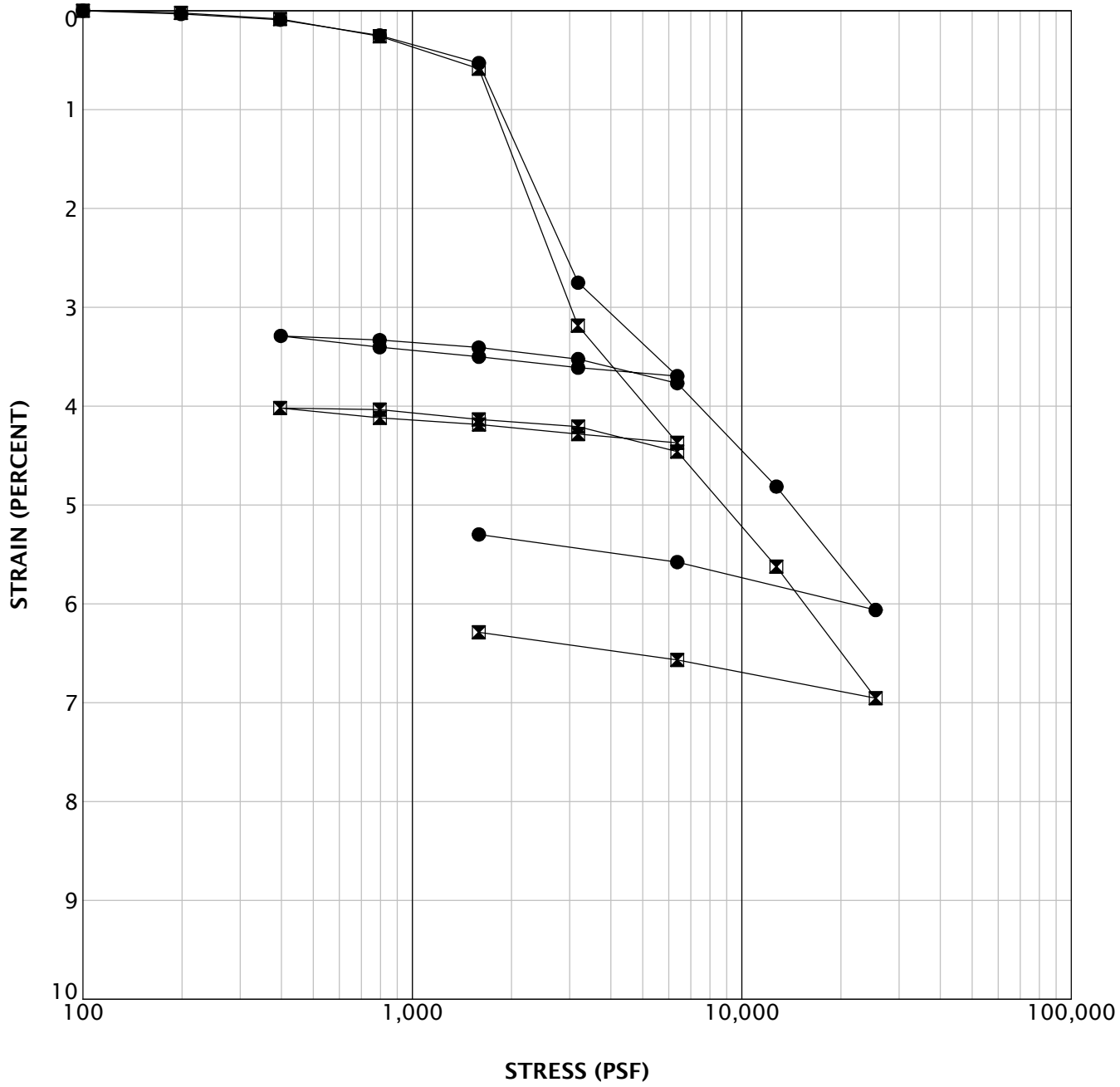
BORING B-2
(continued)

MARCH 2018

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-2

BORING LOG CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/2/18:KT



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)
●	B-1	55.0	3	116
⊠	B-2	80.0	5	129

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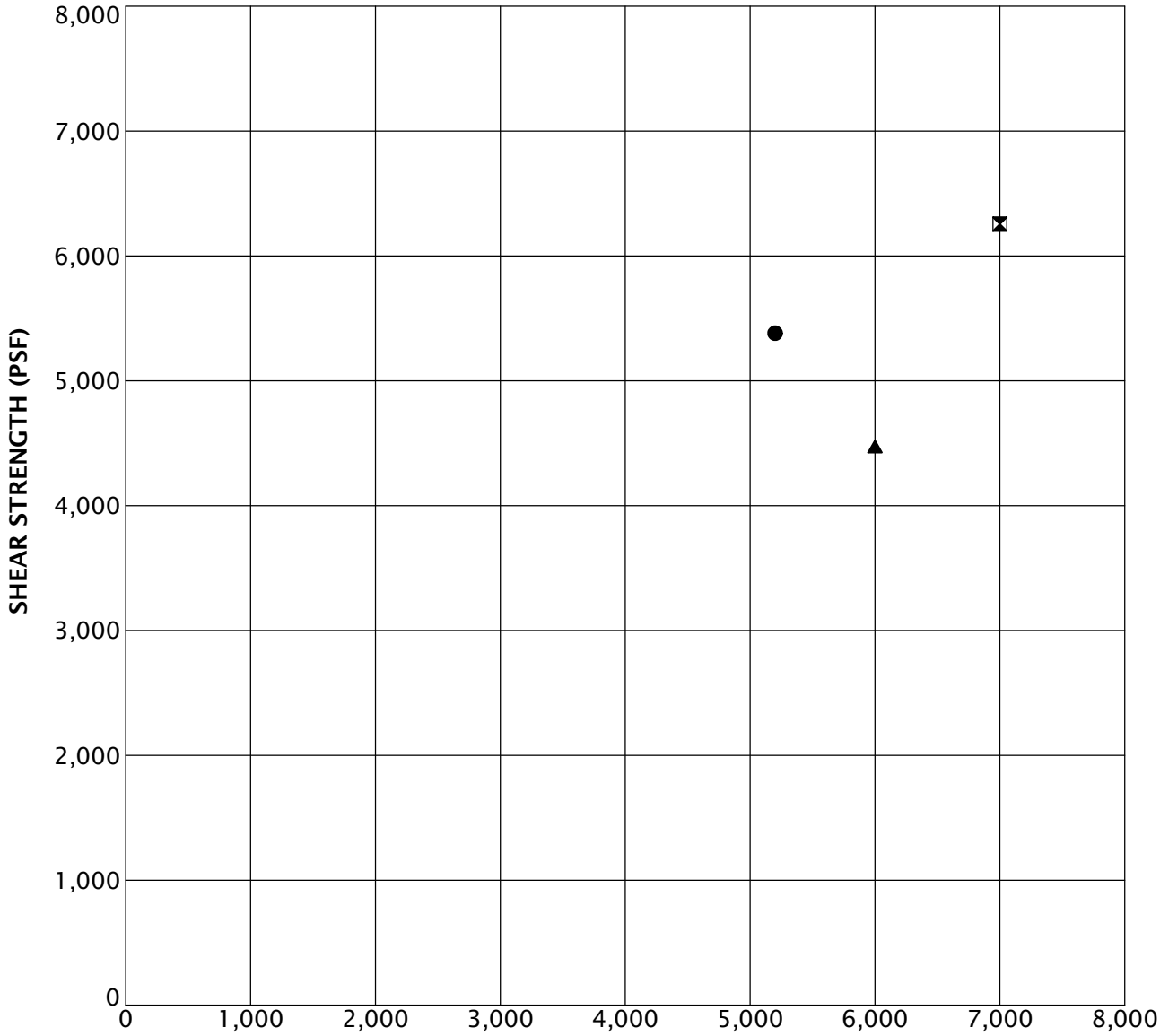
CONSOLIDATION TEST RESULTS

MARCH 2018

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-3

CONSOL_STRAIN_100K CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/1/18:KT



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SOAKED
●	B-1	45.0	11	113	YES
⊠	B-1	55.0	4	121	YES
▲	B-2	50.0	9	109	YES

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DIRECT SHEAR TEST RESULTS

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PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

FIGURE A-4

DIRECT_SHEAR_FAIL_ENV_NO BOX CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/1/18:KT

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	2.5	245.4	12	89						
B-1	15.0	232.9	1	132						
B-1	25.0	222.9	12	96						
B-1	35.0	212.9	5	106						
B-1	45.0	202.9	11	113						
B-1	55.0	192.9	3	116						
B-2	10.0	239.1	4	110						
B-2	30.0	219.1	19	68						
B-2	40.0	209.1	3	100						
B-2	50.0	199.1	9	109						
B-2	60.0	189.1	22	102						
B-2	70.0	179.1	10	108						
B-2	80.0	169.1	5	129						
B-2	90.0	159.1	2	115						

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CRESCENT-2-02

SUMMARY OF LABORATORY DATA

MARCH 2018

PROPOSED HIGH-RISE TOWER DEVELOPMENT
LOS ANGELES, CA

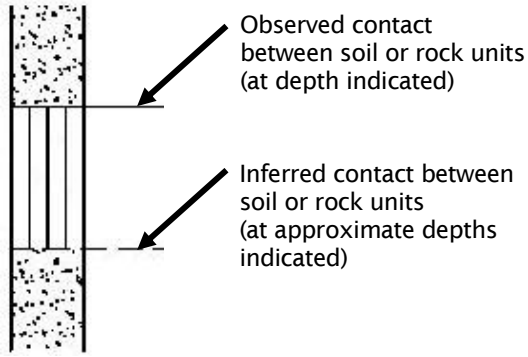
FIGURE A-5

LAB SUMMARY CRESCENT-2-02-B1_2.GPJ GEODESIGN.GDT PRINT DATE: 3/1/18:KT

APPENDIX B

SYMBOL	SAMPLING DESCRIPTION
	Location of sample obtained in general accordance with ASTM D 1586 Standard Penetration Test with recovery
	Location of sample obtained using thin-wall shelby tube or Geoprobe® sampler in general accordance with ASTM D 1587 with recovery
	Location of sample obtained using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample obtained using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

PP	Pocket Penetrometer	DD	Dry Density
TOR	Torvane	ATT	Atterberg Limits
CON	Consolidation	CBR	California Bearing Ratio
DS	Direct Shear	OC	Organic Content
P200	Percent Passing U.S. Standard No. 200 Sieve	P	Pushed Sample
		RES	Resilient Modulus
HYD	Hydrometer Gradation	VS	Vane Shear
UC	Unconfined Compressive Strength	kPa	kiloPascal
SIEV	Sieve Gradation		

ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
PID	Photoionization Detector Headspace Analysis	NS	No Visible Sheen
		SS	Slight Sheen
ppm	Parts per Million	MS	Moderate Sheen
P	Pushed Sample	HS	Heavy Sheen

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KEY TO TEST PIT AND BORING LOG SYMBOLS

TABLE A-1

RELATIVE DENSITY - COARSE-GRAINED SOILS

Relative Density	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very Loose	0 – 4	0 - 11	0 - 4
Loose	4 – 10	11 - 26	4 - 10
Medium Dense	10 – 30	26 - 74	10 - 30
Dense	30 – 50	74 - 120	30 - 47
Very Dense	More than 50	More than 120	More than 47

CONSISTENCY - FINE-GRAINED SOILS

Consistency	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very Soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 - 4	3 – 6	2 - 5	0.25 - 0.50
Medium Stiff	4 - 8	6 – 12	5 - 9	0.50 - 1.0
Stiff	8 - 15	12 – 25	9 - 19	1.0 - 2.0
Very Stiff	15 - 30	25 – 65	19 – 31	2.0 - 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

SOIL CLASSIFICATION NAME

Name and Modifier Terms		Constituent Percentage
Coarse Grained	GRAVEL, SAND	>50%
	sandy, gravelly	30 - 50%
	silty, clayey	15 - 50%
	some (gravel, sand)	15 - 30%
	some (silt, clay)	5 - 15%
	trace (gravel, sand)	
	trace (silt, clay)	<5%
Fine Grained	CLAY, SILT	>50%
	silty, clayey	30 - 50%
	sandy, gravelly	
	some (sand, gravel)	15 - 30%
	some (silt, clay)	
	trace (sand, gravel)	5 - 15%
	trace (silt, clay)	
Organic	PEAT	50 - 100%
	organic (soil name)	15 - 50%
	(soil name) with some organics	5 - 15%

MOISTURE CLASSIFICATION

Term	Field Test
dry	very low moisture, dry to touch
moist	damp, without visible moisture
wet	visible free water, usually saturated

GRAIN-SIZE CLASSIFICATION

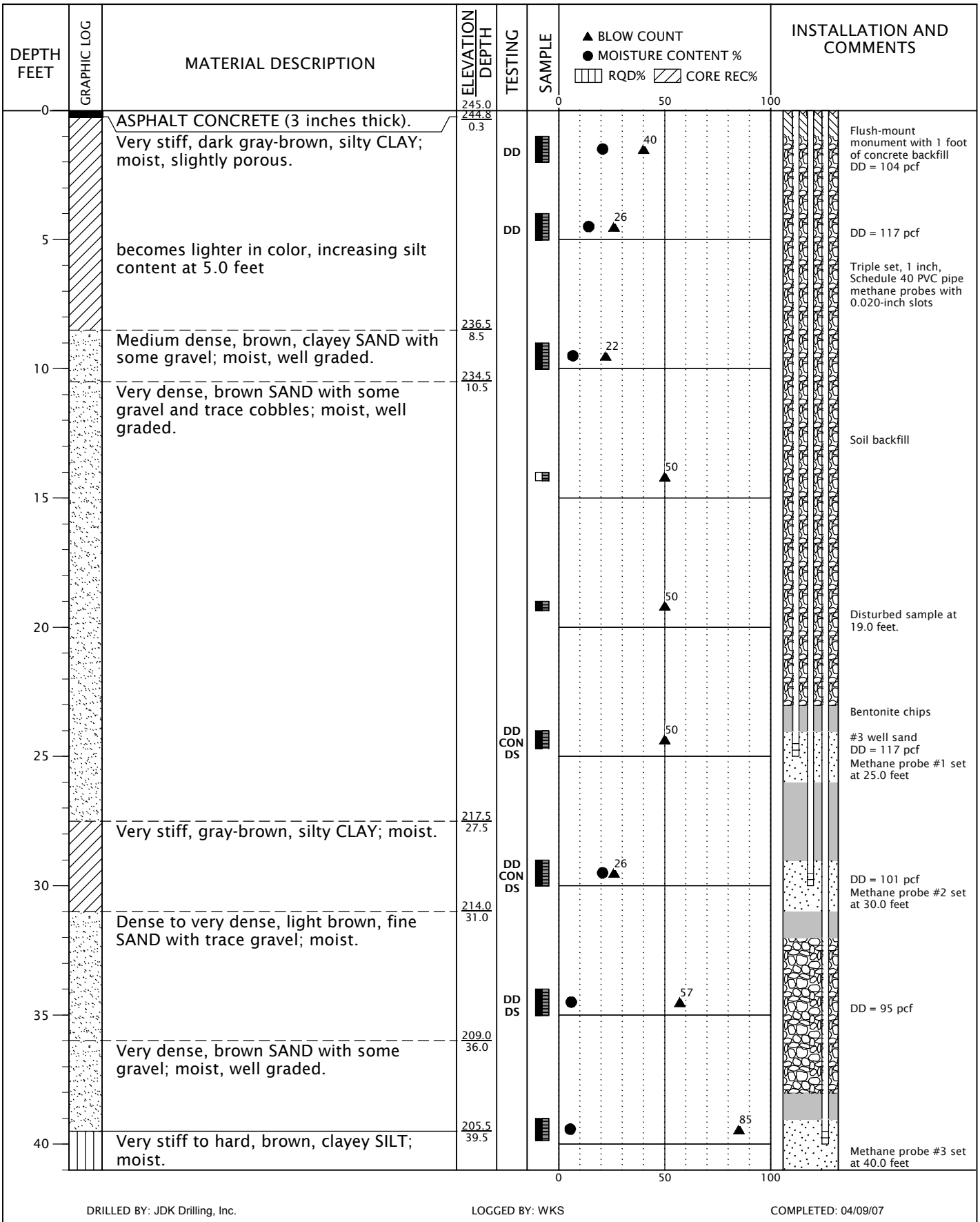
Description		Sieve*	Observed Size
boulders		-	>12”
cobbles		-	3” - 12”
gravel	coarse	0.75” - 3”	0.75” - 3”
	fine	#4 - 0.75”	0.19” - 0.75”
sand	coarse	#10 - #4	0.079” - 0.19”
	medium	#40 - #10	0.017” - 0.079”
	fine	#200 - #40	00029” - 0.017”
fines		<#200	<0.0029”

* Use of #200 field sieve encouraged

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SOIL CLASSIFICATION SYSTEM AND GUIDELINES

TABLE A-2



DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/09/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

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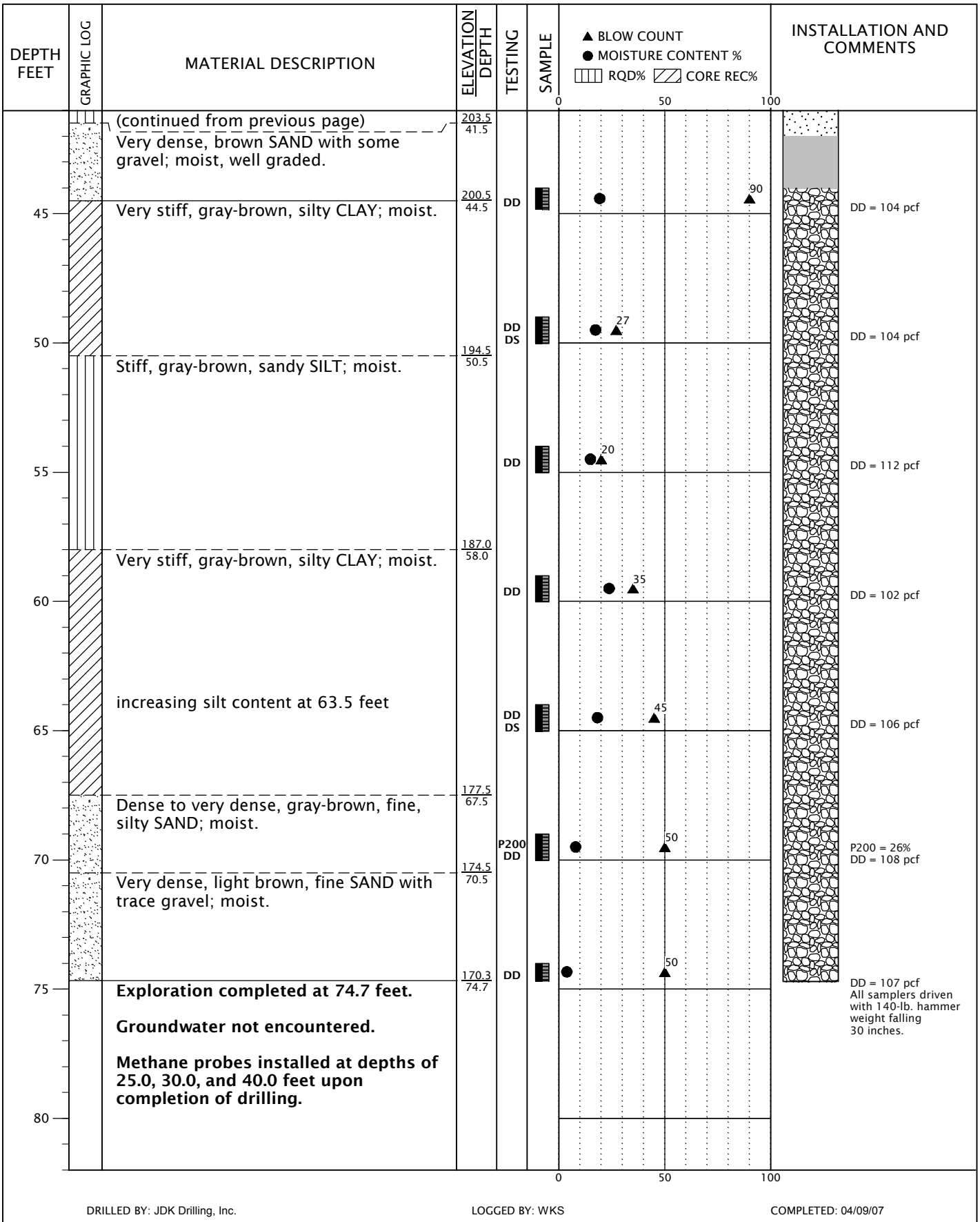
MERUELO-11-01

BORING B-1

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-1



DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/09/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

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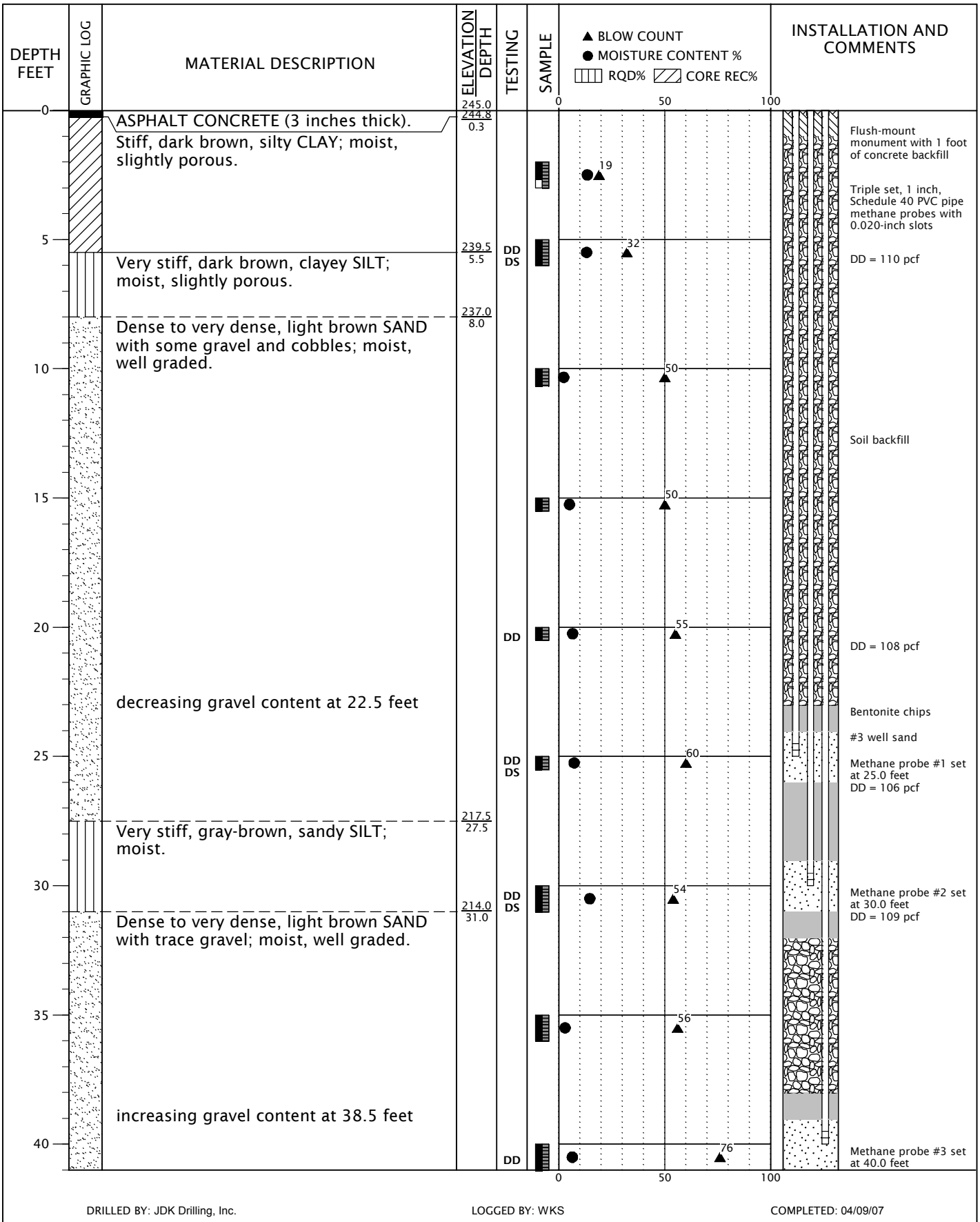
MAY 2007

BORING B-1
(continued)

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-1

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/09/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

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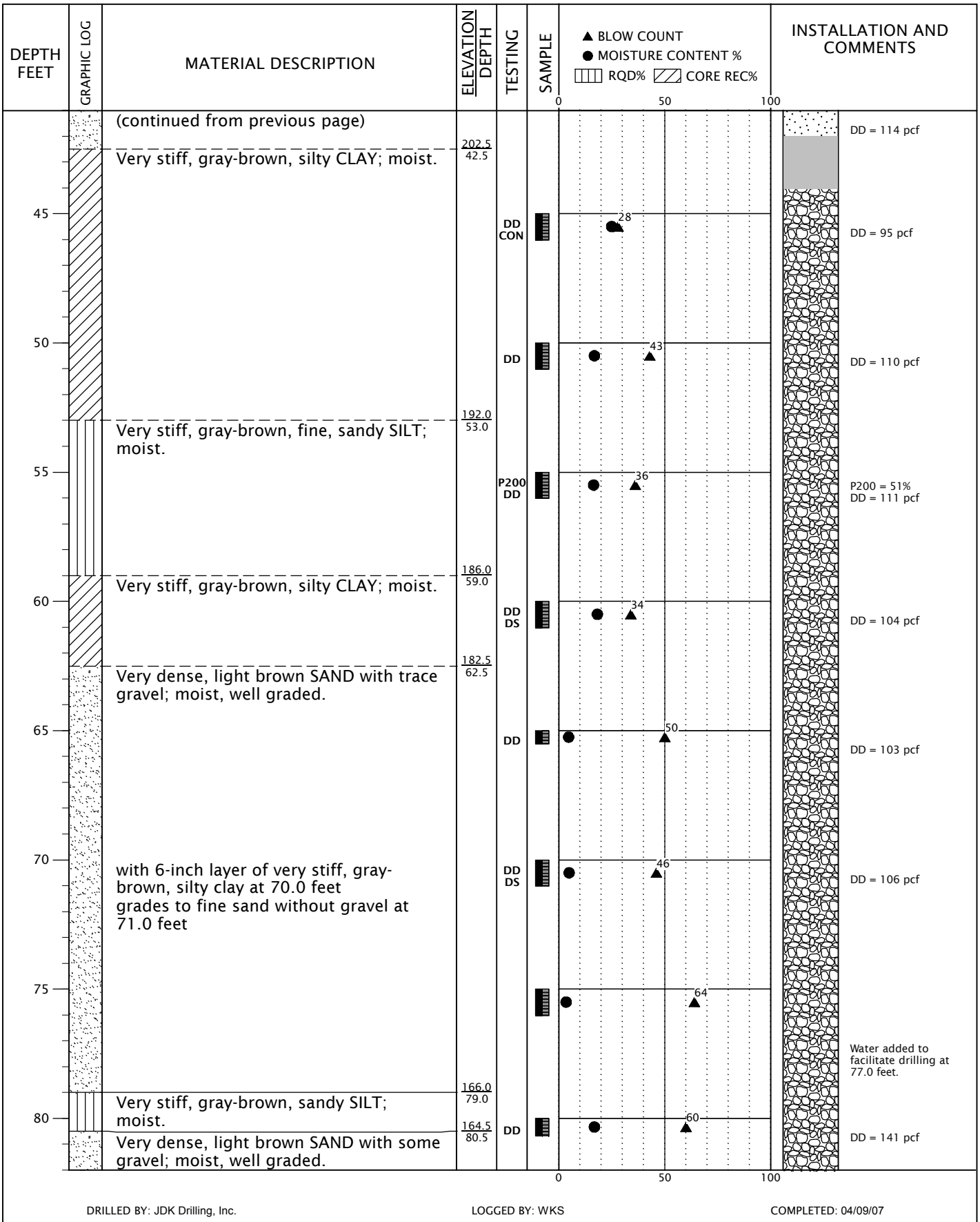
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BORING B-2

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-2

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/09/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

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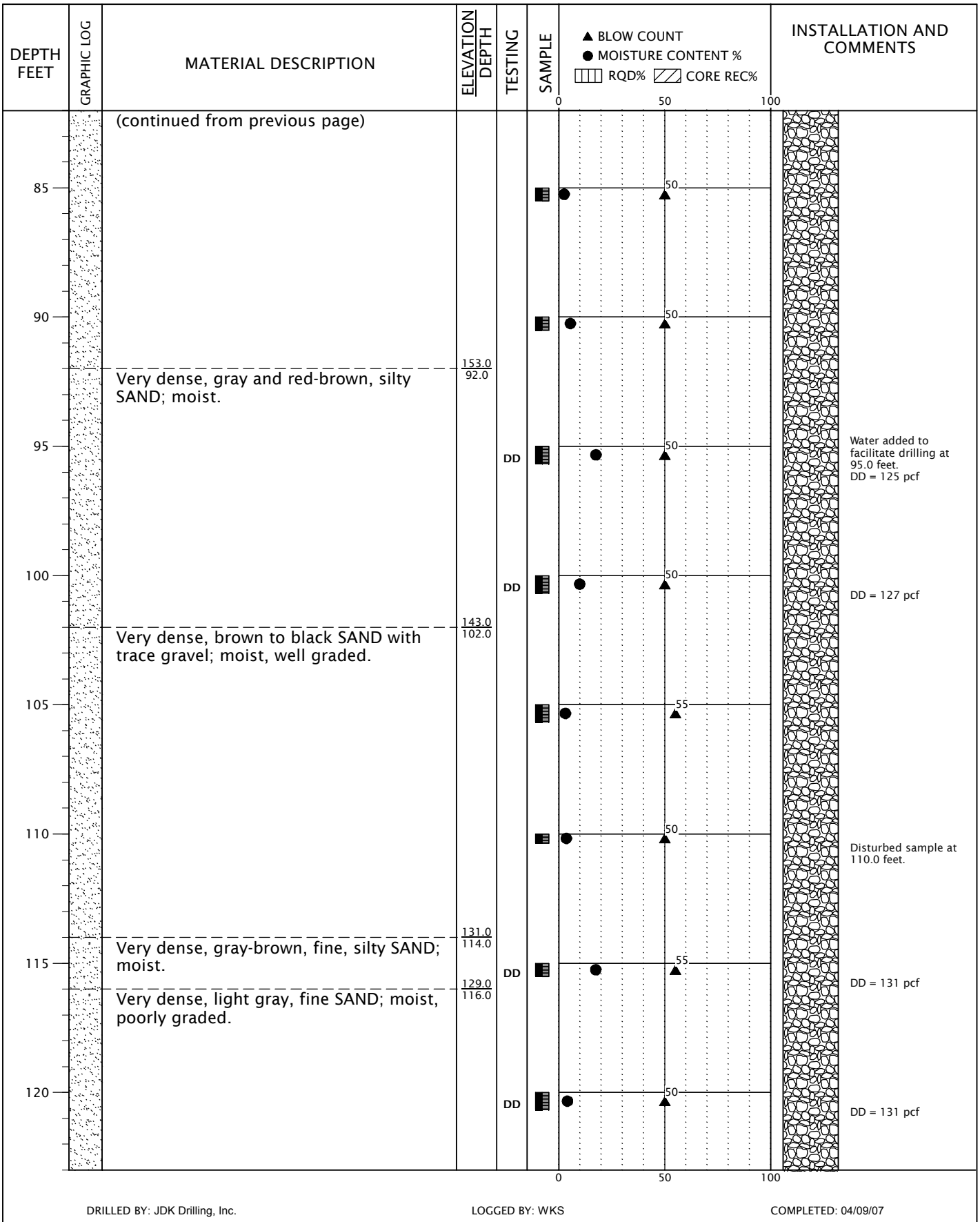
MERUELO-11-01

BORING B-2
(continued)

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-2



DRILLED BY: JDK Drilling, Inc.

LOGGED BY: WKS

COMPLETED: 04/09/07

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8.0 in

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BORING B-2
(continued)

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PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-2

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▥ RQD% ▨ CORE REC%	INSTALLATION AND COMMENTS
		(continued from previous page)				0 50 100	
125		**Exploration completed at 125.5 feet.**	119.5 / 125.5	DD		50	DD = 134 pcf All samplers driven with 140-lb. hammer weight falling 30 inches.
		Groundwater not encountered.					
		Methane probes installed at depths of 25.0, 30.0, and 40.0 feet upon completion of drilling.					
130							
135							
140							
145							
150							
155							
160						0 50 100	

DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/09/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

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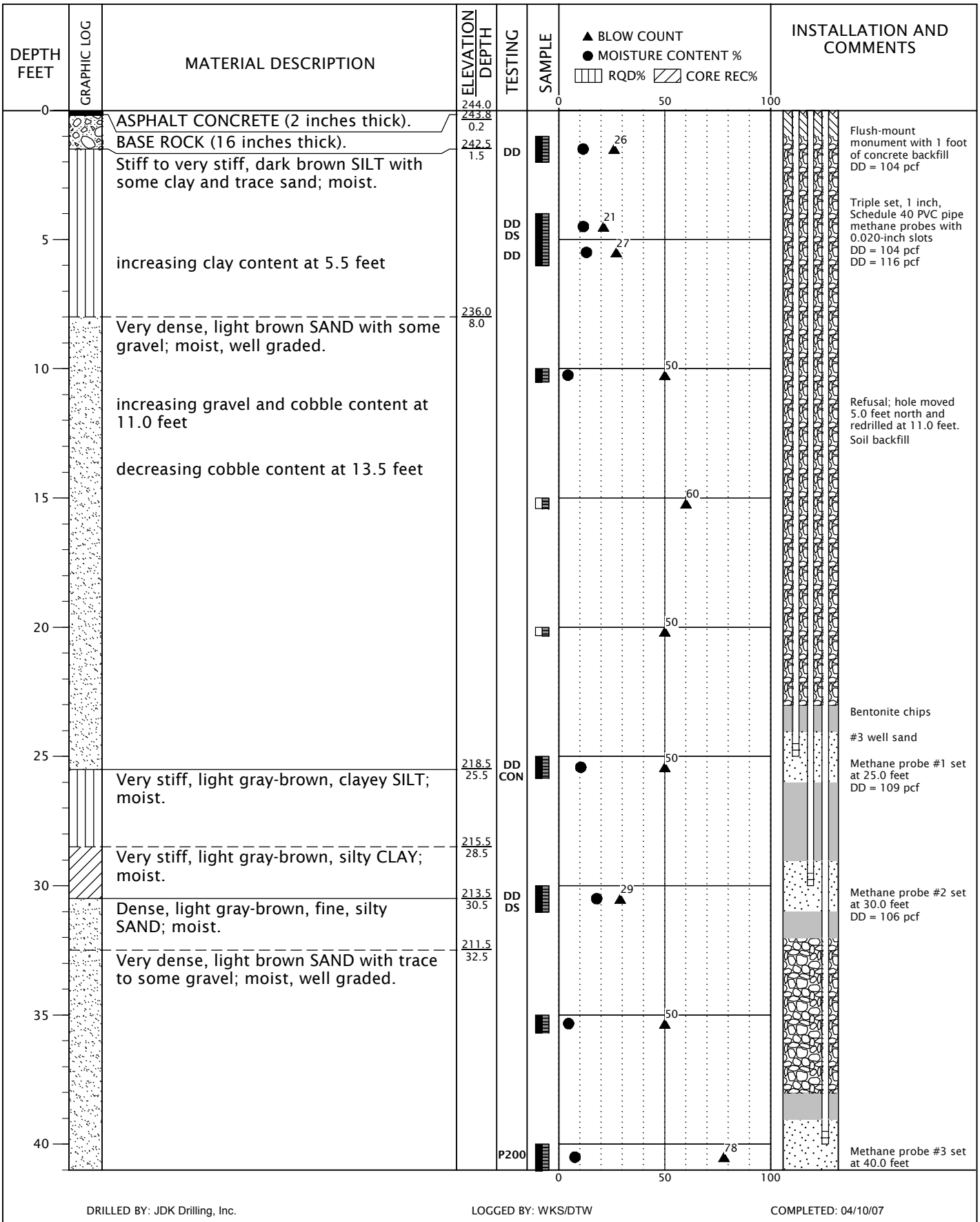
BORING B-2
(continued)

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-2

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



DRILLED BY: JDK Drilling, Inc.

LOGGED BY: WKS/DTW

COMPLETED: 04/10/07

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 8.0 in

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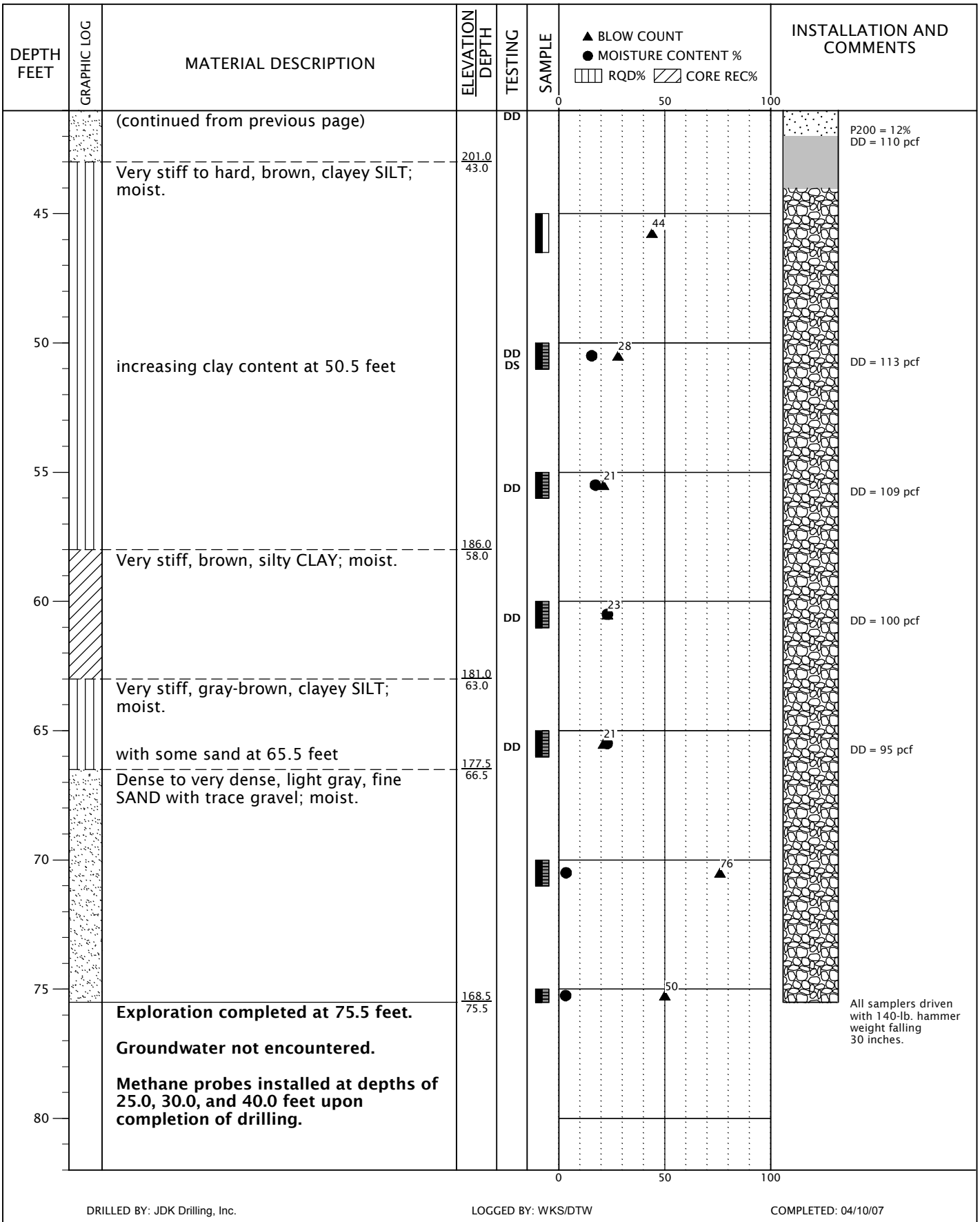
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BORING B-3

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-3

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS/DTW COMPLETED: 04/10/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

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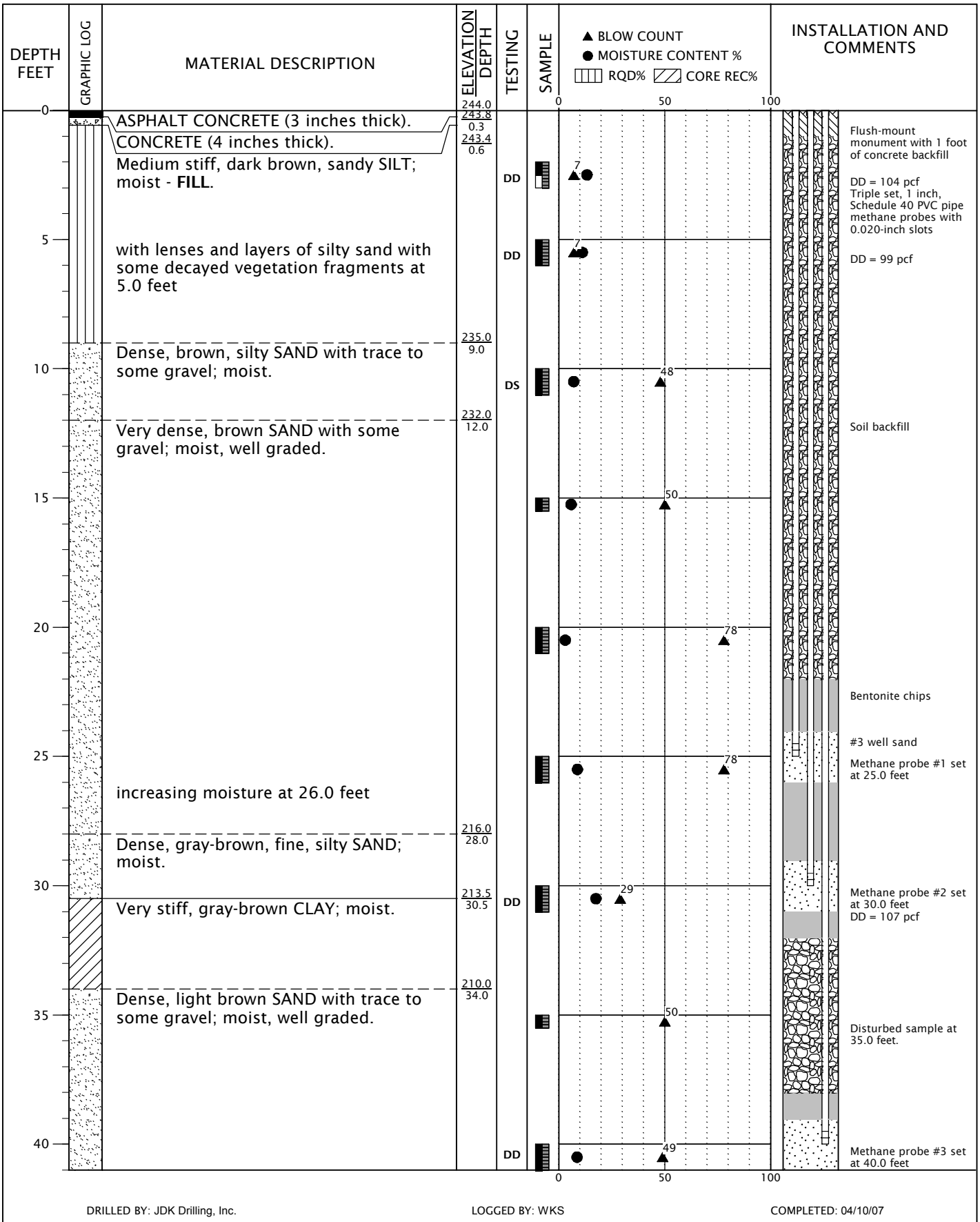
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MAY 2007

BORING B-3
(continued)

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-3



DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/10/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/17/07:KYK

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BORING B-4

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PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-4

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▥ RQD% ▨ CORE REC% (0 — 50 — 100)	INSTALLATION AND COMMENTS
		(continued from previous page)		CON			DD = 109 pcf
45		Hard, gray-brown, silty CLAY; moist.	198.5 / 45.5			40	
		Very stiff, gray-brown, sandy SILT; moist.	195.0 / 49.0				
50				DD		50	DD = 116 pcf
		Medium dense to dense, gray-brown, fine, clayey SAND; moist.	191.0 / 53.0				
55				DD		35	DD = 111 pcf
		Very stiff, gray-brown, silty CLAY; moist.	187.5 / 56.5				
60		with some sand at 61.0 feet		DD		33	DD = 134 pcf
		Very stiff, gray-brown, sandy SILT; moist.	182.0 / 62.0				
65				DD		56	DD = 136 pcf
		Dense, light brown and gray, fine, silty SAND; moist.	176.0 / 68.0				
70				DD		36	DD = 143 pcf
		Very dense to dense, light brown SAND with trace gravel; moist, well graded.	173.0 / 71.0				
75						76 60	
		Exploration completed at 76.3 feet.	167.7 / 76.3				All samplers driven with 140-lb. hammer weight falling 30 inches.
		Groundwater not encountered.					
80		**Methane probes installed at depths of 25.0, 30.0, and 40.0 feet upon completion of drilling.**					

DRILLED BY: JDK Drilling, Inc. LOGGED BY: WKS COMPLETED: 04/10/07

BORING METHOD: hollow-stem auger (see report text) BORING BIT DIAMETER: 8.0 in

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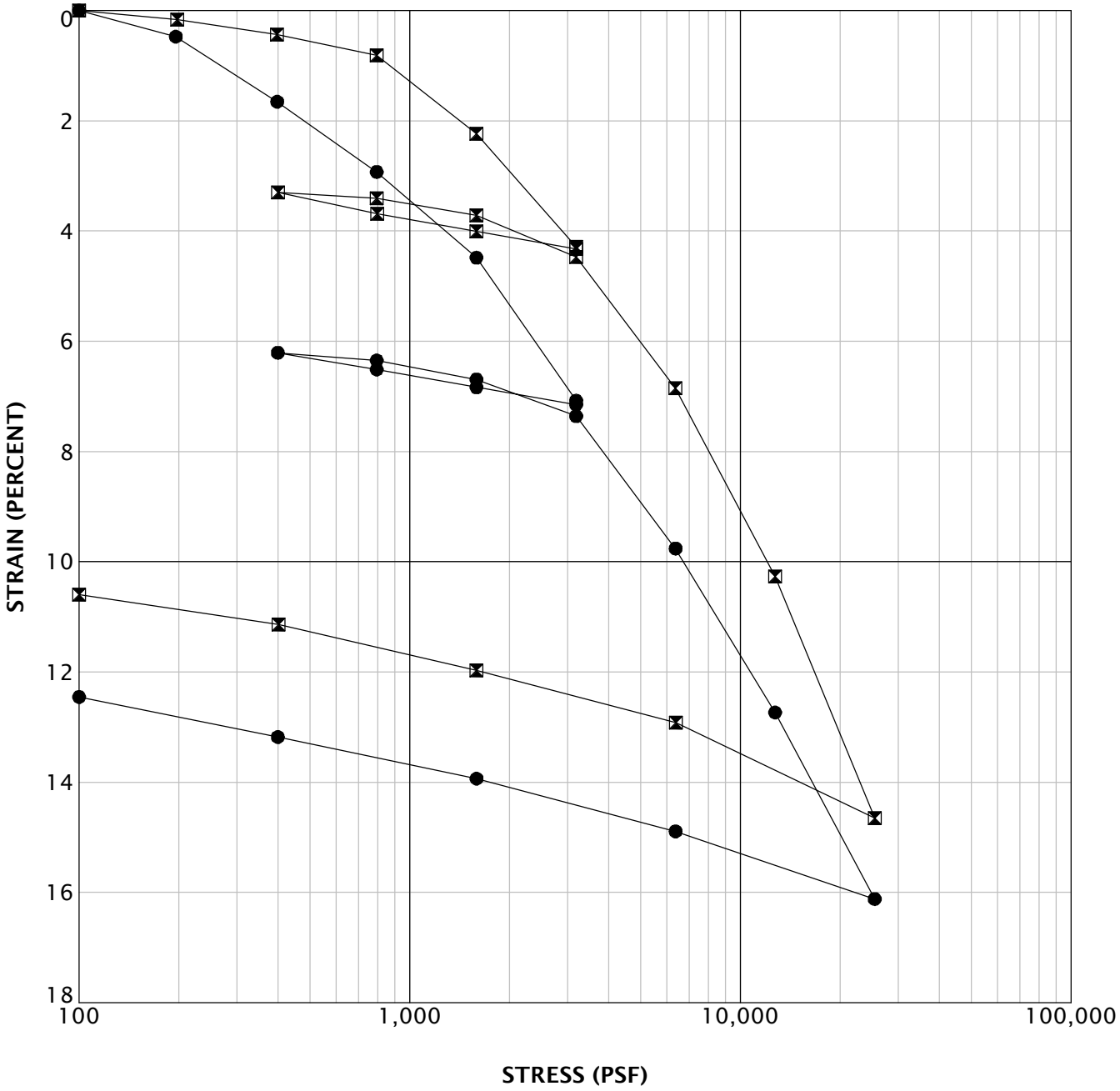
BORING B-4
(continued)

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-4

BORING LOG MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/17/07:KYK



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	USCS	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	WATER ADDED AT (PSF)
●	B-1	29.0	CL	20.6	101	3200
⊠	B-2	45.0	CL	24.9	95	3200

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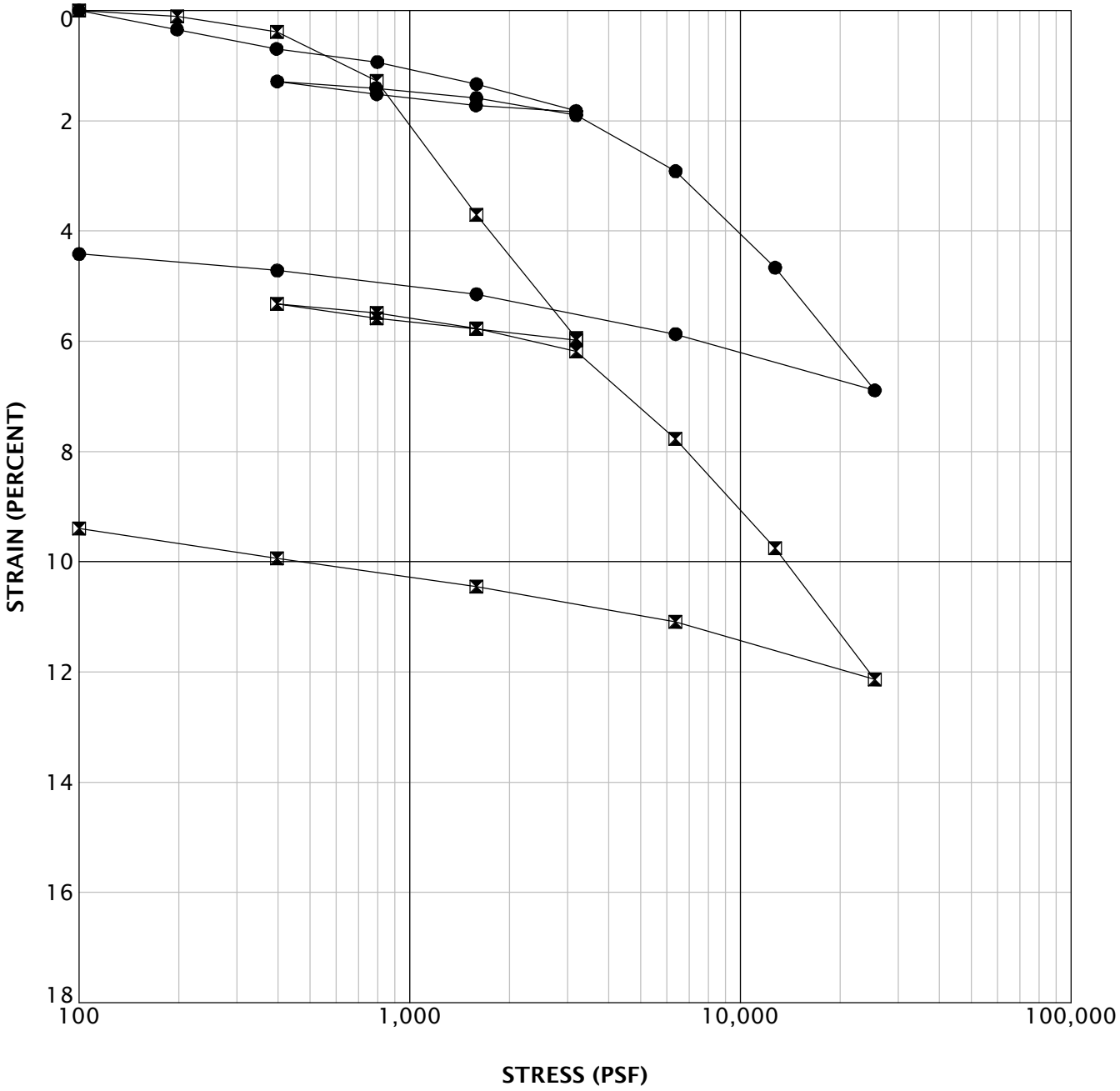
CONSOLIDATION TEST RESULTS

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-5

CONSOL_STRAIN_100K_H20_ADDED_USCS - ANAH MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	USCS	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	WATER ADDED AT (PSF)
●	B-3	25.0	SW	10.3	109	3200
⊠	B-4	40.0	SW	8.6	109	3200

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MERUELO-11-01

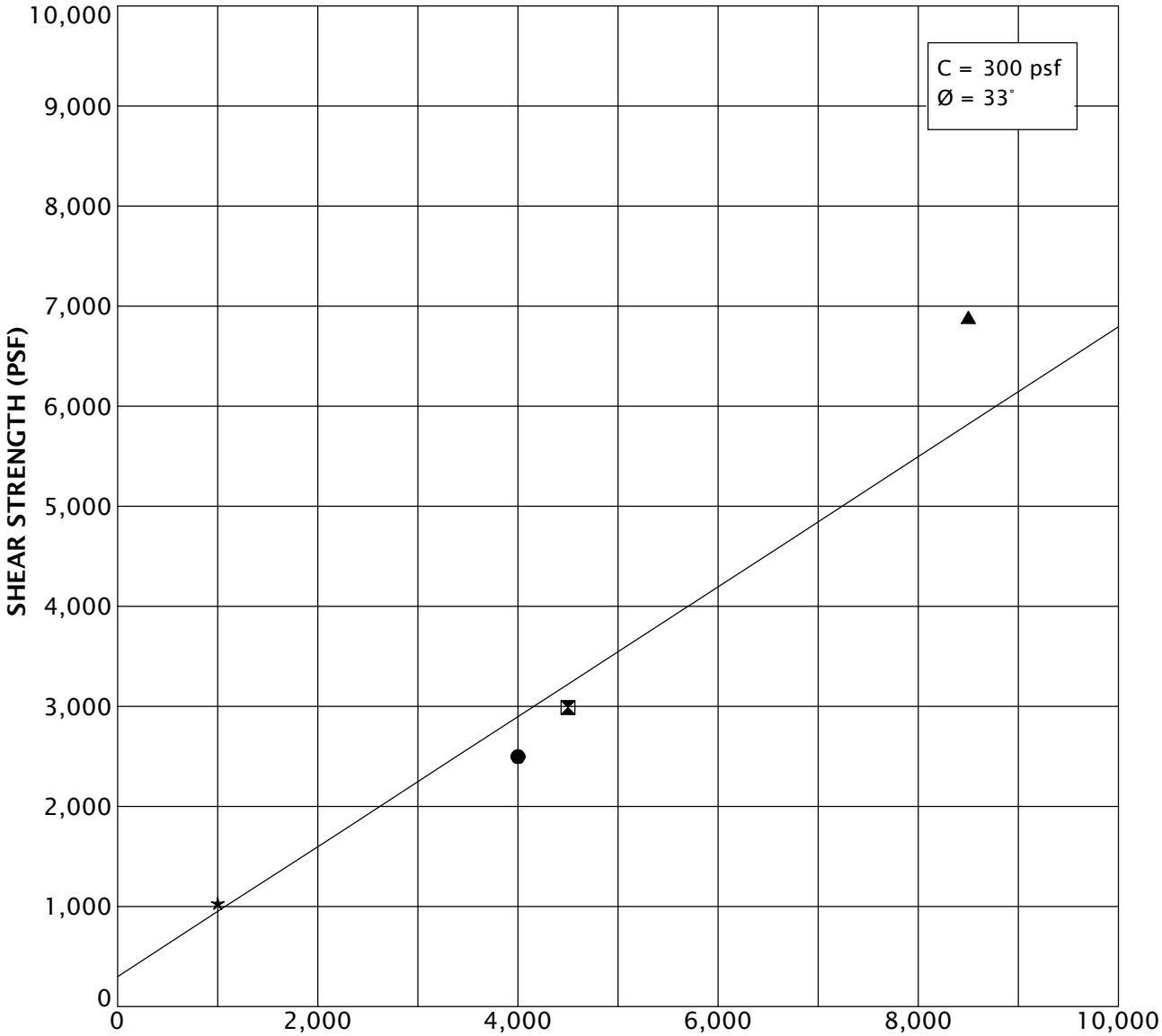
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CONSOLIDATION TEST RESULTS
(continued)

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-5

CONSOL_STRAIN_100K_H20_ADDED_USCS - ANAH MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	USCS	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SOAKED
●	B-1	34.0	SP	5.8	95	YES
⊠	B-2	25.0	SW	7.2	104	YES
▲	B-2	70.0	SW	4.8	106	YES
★	B-4	10.0	SW	4.6	109	YES

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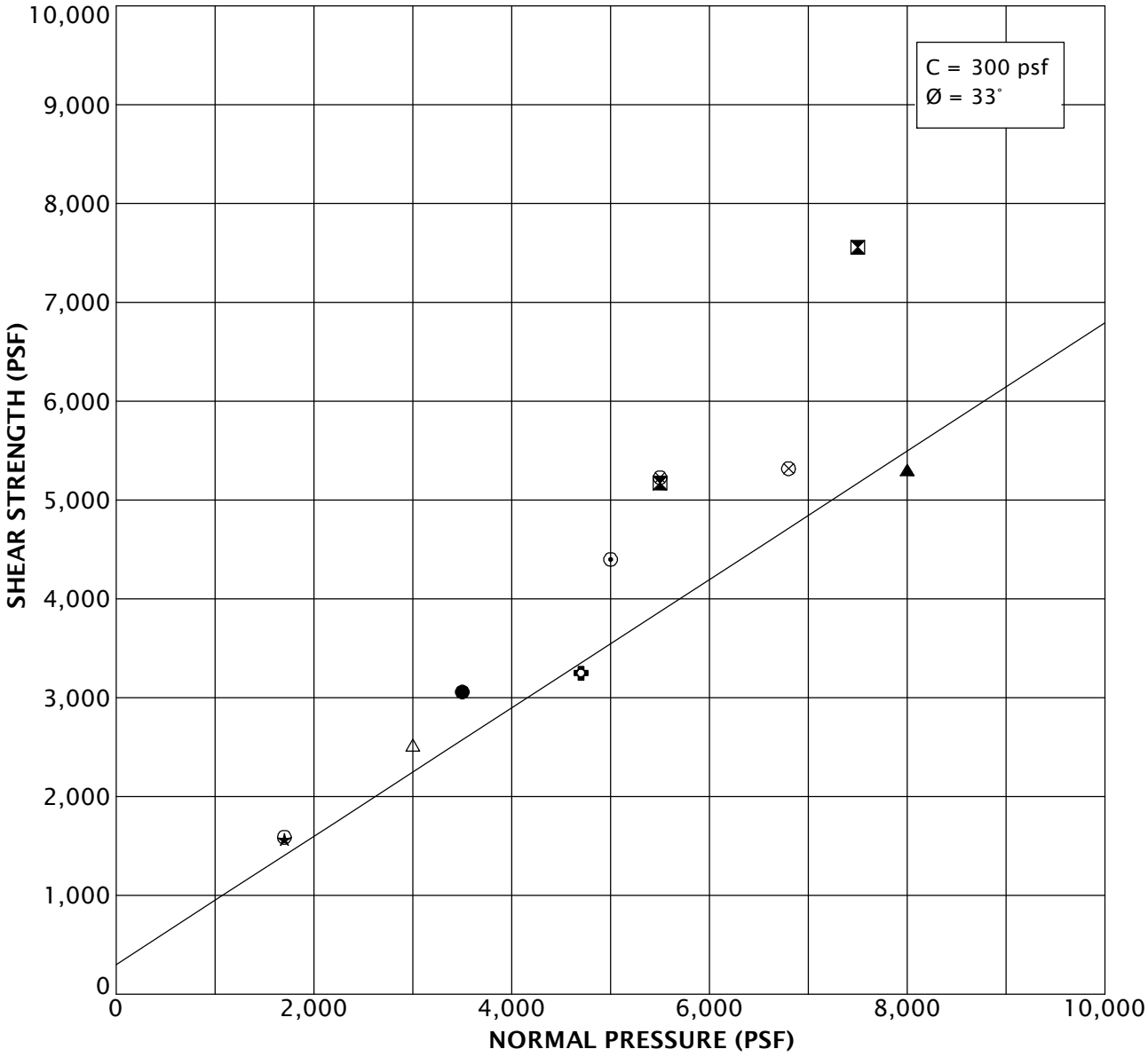
DIRECT SHEAR TEST RESULTS (COARSE-GRAINED SOILS)

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-6

DIRECT_SHEAR_FAIL_ENV_USCS_TYPE_TITLE_4 MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	USCS	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SOAKED
●	B-1	29.0	CL	17.7	104	YES
⊠	B-1	49.0	CL	17.3	104	YES
▲	B-1	64.0	CL	18.2	106	YES
★	B-2	5.0	CL	13.1	111	YES
⊙	B-2	30.0	ML	15.2	111	YES
✿	B-2	60.0	CL	18.2	104	YES
○	B-3	4.0	ML	11.5	107	YES
△	B-3	30.0	CL	20.9	104	YES
⊗	B-3	50.0	ML	15.6	111	YES

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DIRECT SHEAR TEST RESULTS (FINE-GRAINED SOILS)

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-7

DIRECT_SHEAR_FAIL_ENV_USCS_TYPE_TITLE_9 MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT (PERCENT)	PLASTIC LIMIT (PERCENT)	PLASTICITY INDEX (PERCENT)
B-1	1.0	244.0	20.7	104						
B-1	4.0	241.0	14.1	117						
B-1	9.0	236.0	6.6							
B-1	29.0	216.0	20.6	101						
B-1	34.0	211.0	5.8	95						
B-1	39.0	206.0	6.1							
B-1	44.0	201.0	19.2	104						
B-1	49.0	196.0	17.3	104						
B-1	54.0	191.0	14.9	112						
B-1	59.0	186.0	23.7	102						
B-1	64.0	181.0	18.2	106						
B-1	69.0	176.0	7.9	108						
B-1	69.5	175.5					26			
B-1	74.0	171.0	3.7	107						
B-2	2.0	243.0	13.4							
B-2	5.0	240.0	13.1	110						
B-2	10.0	235.0	2.3							
B-2	15.0	230.0	5.0							
B-2	20.0	225.0	6.5	108						
B-2	25.0	220.0	7.2	106						
B-2	30.0	215.0	14.6	109						
B-2	35.0	210.0	2.9							
B-2	40.0	205.0	6.3	114						
B-2	45.0	200.0	24.9	95						
B-2	50.0	195.0	16.8	110						
B-2	55.0	190.0	16.4	111						
B-2	55.5	189.5					51			

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MERUELO-11-01

SUMMARY OF LABORATORY DATA

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-8

LAB SUMMARY - ANAHEIM MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT (PERCENT)	PLASTIC LIMIT (PERCENT)	PLASTICITY INDEX (PERCENT)
B-2	60.0	185.0	18.2	104						
B-2	65.0	180.0	4.6	103						
B-2	70.0	175.0	4.8	106						
B-2	75.0	170.0	3.4							
B-2	80.0	165.0	16.7	141						
B-2	85.0	160.0	2.5							
B-2	90.0	155.0	5.4							
B-2	95.0	150.0	17.5	125						
B-2	100.0	145.0	9.8	127						
B-2	105.0	140.0	3.1							
B-2	110.0	135.0	3.5							
B-2	115.0	130.0	17.4	131						
B-2	120.0	125.0	4.0	131						
B-2	125.0	120.0	3.1	134						
B-3	1.0	243.0	11.4	104						
B-3	4.0	240.0	13.0	103						
B-3	5.0	239.0	13.0	116						
B-3	10.0	234.0	4.3							
B-3	25.0	219.0	10.3	109						
B-3	30.0	214.0	17.8	106						
B-3	35.0	209.0	4.6							
B-3	40.0	204.0	7.6	110						
B-3	40.5	203.5					12			
B-3	50.0	194.0	15.5	113						
B-3	55.0	189.0	17.2	109						
B-3	60.0	184.0	22.9	100						
B-3	65.0	179.0	22.8	95						

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MERUELO-11-01

SUMMARY OF LABORATORY DATA
(continued)

MAY 2007

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

FIGURE A-8

LAB SUMMARY - ANAHEIM MERUELO-11-01-BORING_LOGS.GPJ GEODESIGN.GDT PRINT DATE: 5/16/07:KYK

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT (PERCENT)	PLASTIC LIMIT (PERCENT)	PLASTICITY INDEX (PERCENT)
B-3	70.0	174.0	3.4							
B-3	75.0	169.0	3.2							
B-4	2.0	242.0	13.3	104						
B-4	5.0	239.0	11.1	99						
B-4	10.0	234.0	7.0							
B-4	15.0	229.0	5.8							
B-4	20.0	224.0	3.0							
B-4	25.0	219.0	8.7							
B-4	30.0	214.0	17.5	107						
B-4	40.0	204.0	8.6	109						
B-4	50.0	194.0	14.1	116						
B-4	55.0	189.0	15.6	111						
B-4	60.0	184.0	18.8	134						
B-4	65.0	179.0	14.0	136						
B-4	70.0	174.0	13.3	143						
B-4	76.0	168.0	3.1							

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SUMMARY OF LABORATORY DATA
(continued)

PROPOSED RESIDENTIAL APARTMENT TOWER
LOS ANGELES, CA

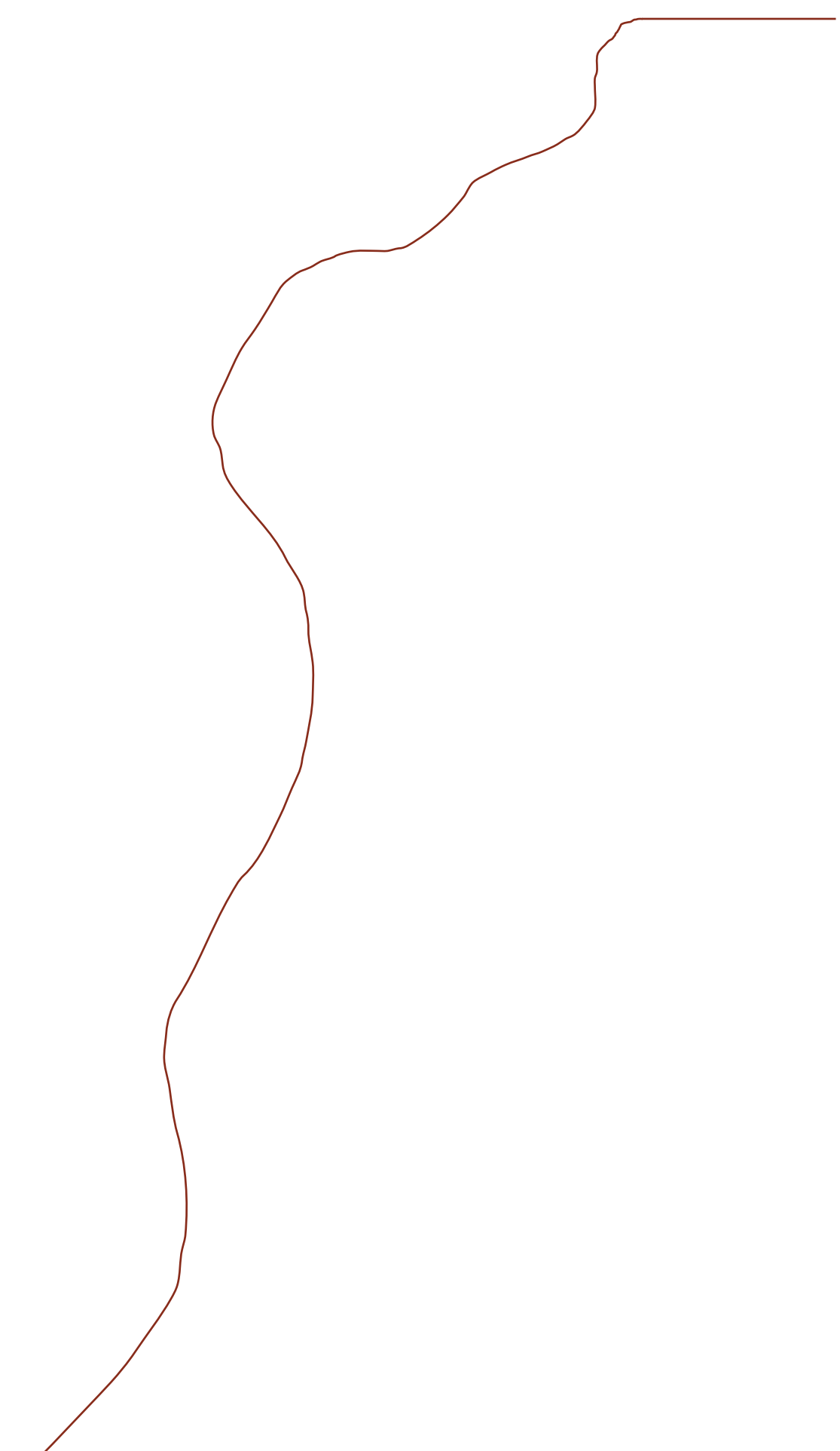
FIGURE A-8

Table 1 - Laboratory Tests on Soil Samples

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12-Apr-07

Sample ID			2 @2.5 CL	4 @ 20.5-25.5' SW
Resistivity		**Units**		
as-received		ohm-cm	3,080	22,800
saturated		ohm-cm	2,280	4,400
pH			7.0	7.7
Electrical Conductivity		mS/cm	0.06	0.10
Chemical Analyses				
Cations				
calcium	Ca^{2+}	mg/kg	29	27
magnesium	Mg^{2+}	mg/kg	8.1	9.4
sodium	Na^{1+}	mg/kg	55	65
potassium	K^{1+}	mg/kg	6.3	10
Anions				
carbonate	CO_3^{2-}	mg/kg	ND	ND
bicarbonate	HCO_3^{1-}	mg/kg	116	146
flouride	F^{1-}	mg/kg	2.8	1.7
chloride	Cl^{1-}	mg/kg	1.9	17
sulfate	SO_4^{2-}	mg/kg	12	85
phosphate	PO_4^{3-}	mg/kg	4.0	ND
Other Tests				
ammonium	NH_4^{1+}	mg/kg	ND	0.6
nitrate	NO_3^{1-}	mg/kg	ND	ND
sulfide	S^{2-}	qual	na	na
Redox		mV	na	na

Electrical conductivity in millisiemens/cm and chemical analysis were made on a 1:5 soil-to-water extract.
mg/kg = milligrams per kilogram (parts per million) of dry soil.
Redox = oxidation-reduction potential in millivolts
ND = not detected
na = not analyzed



F-3 Paleontological Resources Assessment Report

1045 OLIVE PROJECT, CITY OF LOS ANGELES, CALIFORNIA

Paleontological Resources Assessment Report

Prepared for
1045 Olive, LLC
2200 Biscayne Boulevard
Miami, Florida 33137

August 2018

ESA

1045 OLIVE PROJECT, CITY OF LOS ANGELES, CALIFORNIA

Paleontological Resources Assessment Report

Prepared for:
1045 Olive, LLC
2200 Biscayne Boulevard
Miami, Florida 33137

August 2018

Prepared by:
ESA

Principal Investigator and Report Author:
Alyssa Bell, Ph.D.

Project Manager:
Sara Dietler, B.A.

Project Location:
Hollywood (CA) USGS 7.5-minute Topographic Quad
Township 1 South, Range 13 West, unsectioned

Acreage: Approx. 0.96 acres

Assessor Parcel Numbers: 6129-002-029
and 6129-002-030
]

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EXECUTIVE SUMMARY

Environmental Science Associates (ESA) has been retained by Crescent Heights–1045 Olive, LLC, (Applicant), to conduct a Paleontological Resources Assessment in support of an Environmental Impact Report (EIR), pursuant to the statutes of the California Environmental Quality Act (CEQA) for the 1045 Olive Project (Project), located in the City of Los Angeles. The Project would replace five existing single story commercial buildings with a 61-level residential tower atop a nine-level podium structure for a total of 70 floors on a 0.96-acre site (Project Site). The City of Los Angeles (City) is the lead agency for the Project pursuant to the California Environmental Quality Act (CEQA).

The 0.96-acre property proposed for development is located within Downtown Los Angeles at 1045 South Olive Street (Project Site). It is bounded by South Grand Avenue to the northeast, West Olympic Boulevard to the northwest, Olive Street to the southeast, and West 11th Street to the southwest. Specifically, the Project Site is located in an unsectioned portion of Township 1 South, Range 13 West, of the Hollywood 7.5-minute USGS topographic quadrangle.

The surficial geology of the Project Site consists of Holocene-aged younger Quaternary alluvium. A paleontological records search for the Project was conducted by the Natural History Museum of Los Angeles County (LACM) on November 30, 2017. The results indicate that while no fossil localities are known to exist within the Project Site, significant fossil vertebrate remains can be found within older Quaternary alluvium deposits, which are present in the subsurface in the general area. The three closest fossil localities in these sediments known to the LACM (LACM 1023, 1755, and 2032) were found approximately 0.2 to 3.1 miles away from the Project Site and produced fossil specimens of a variety of Ice Age animals such as mammoth and ground sloths at depths from 20 to 43 feet below surface. A review of geologic mapping and scientific literature indicates that the younger Quaternary alluvium that characterizes the surficial geology of the Project Site is too young to preserve fossil resources at the surface; however, the age of the sediments increases with depth, such that deeper layers may preserve fossil resources. Therefore, the sediments in the Project Site have low-to-high paleontological sensitivity with sensitivity increasing at greater excavation depths. Given that the Project would involve excavation with maximum depths of approximately 64 feet below ground surface (bgs), there is potential to find significant fossil resources at the Project Site. Accordingly, ESA provides recommendations to address this potential. These recommendations are provided in the *Conclusions and Recommendations* section at the close of this Paleontological Resources Assessment Report (Report).

INTRODUCTION AND PROJECT DESCRIPTION

Introduction

Environmental Science Associates (ESA) has been retained by Crescent Heights–1045 Olive, LLC, (Applicant), to conduct a Paleontological Resources Assessment for the 1045 Olive Project (Project) in support of an Environmental Impact Report (EIR) in the City of Los Angeles. The City of Los Angeles (City) is the lead agency for the Project pursuant to the California Environmental Quality Act (CEQA). ESA personnel involved in the preparation of this Paleontological Resources Assessment Report (Report) are as follows: Monica Strauss, M.A., R.P.A., project director; Sara Dietler, B.A., cultural resources project manager; Alyssa Bell, Ph.D., report author and Principal Investigator; and Jessie Lee, GIS specialist. Resumes of key personnel are included in **Appendix A**.

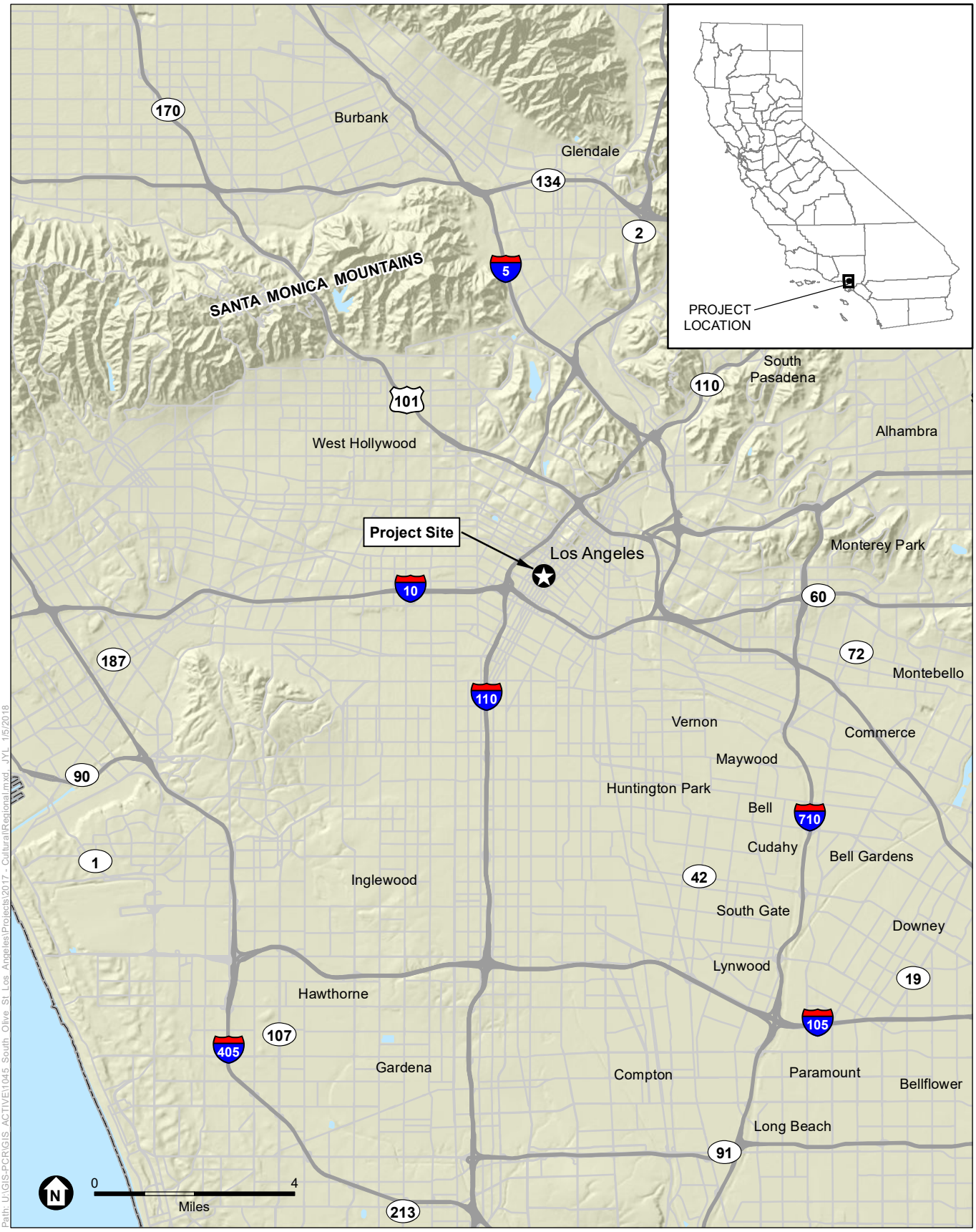
Project Location

The 0.96-acre Project Site is located within the Downtown area in the South Park community of the City of Los Angeles (**Figure 1**). The Project Site is located in an unsectioned portion of Township 1 South, Range 13 West of the Los Angeles, CA United States Geological Survey 7.5' topographic quadrangle map. The Project Site comprises the city block bounded by South Grand Avenue, West Olympic Boulevard, Olive Street, and West 11th Street (**Figure 2**). The Project Site is improved with five vernacular commercial buildings constructed between 1911 and 1947.

Project Description

The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial (restaurant/retail) uses. A 61-story tower would sit atop a nine level podium structure (Podium) for a total of 70 floors above grade, up to 810 feet in height. The Project would also have six subterranean levels. Approximately 103,380 square feet of open space would be provided, including a ground level public Plaza with landscaping and public art (Plaza). Open space and recreation facilities for residents would be located on the 8th Floor cut-out Terrace and larger 10th Floor Terrace, within mid-building cut-out areas on the upper floor levels and on a Tower Rooftop Terrace and within private balconies.

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances from the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley. Vehicle parking would be provided within the six (6) subterranean parking levels and in eight (8) levels of above-grade parking within the Podium. The Project would require approximately 80,520 cubic yards (cy) of soil removal from the Project Site with maximum excavation depths of approximately 64 feet. Shallow earthwork would be required for repaving and alley improvements.



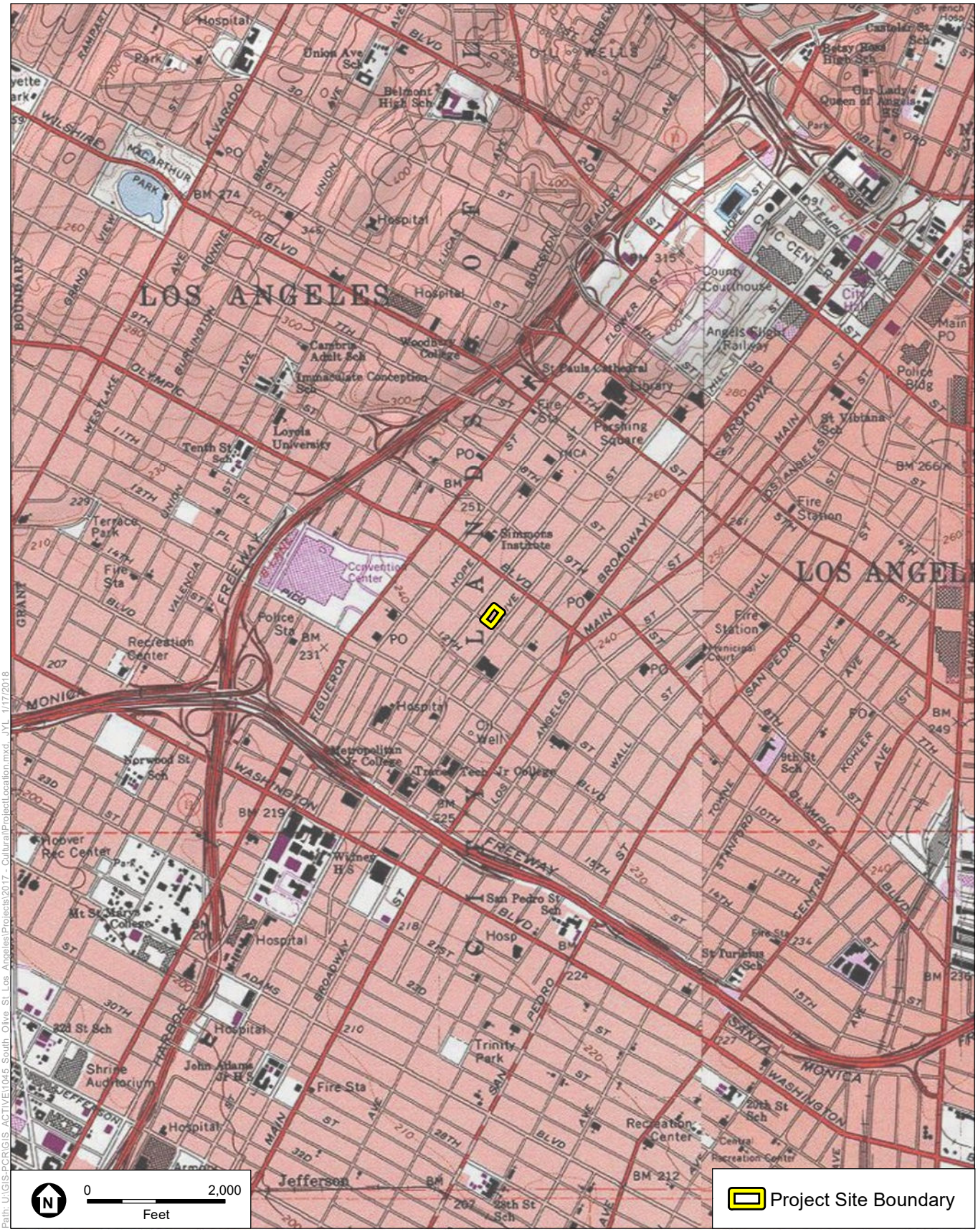
SOURCE: ESRI

1045 Olive Project Cultural Resources Assesment

Figure 1

Regional Location Map

ESA



SOURCE: USGS 7.5' Topo Quad Hollywood 1978, 1982

1045 Olive Project Cultural Resources Assessment

Figure 2

Project Location Map

ESA

REGULATORY FRAMEWORK
State and Local Regulations

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value that are afforded protection under state laws and regulations. The following section summarizes the applicable federal and state laws and regulations, as well as professional standards provided by the Society of Vertebrate Paleontology (SVP).

State Regulations

California Environmental Quality Act

The State CEQA Guidelines (Title 14, Chapter 3 of the California Code of Regulations, Section 15000 *et seq*.), are prescribed by the Secretary of Resources to be followed by state and local agencies in California in their implementation of the CEQA. Appendix G of the State CEQA Guidelines includes an Environmental Checklist Form with questions that may be used by public agencies in their assessment of impacts on the environment. The question within Appendix G that relates to paleontological resources states: "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" The City of Los Angeles uses this question as its threshold of significance for determining whether impacts of paleontological resources are significant. CEQA protects paleontological resources by requiring an assessment of a project's potential paleontological impacts.

.

Public Resources Code Section 5097.5 and Section 30244

Other state requirements for paleontological resource management are included in PRC Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

Local Regulations

City of Los Angeles – General Plan

The Conservation Element of the City of Los Angeles General Plan recognizes paleontological resources in Section 3: "Archeological and Paleontological" (II-3), specifically the La Brea Tar Pits, and identifies protection of paleontological resources as an objective (II-5). The General Plan identifies site protection as important, stating, "Pursuant to CEQA, if a land development project is within a potentially significant paleontological area, the developer is required to contact a bona fide paleontologist to arrange for assessment of the potential impact and mitigation of potential disruption of or damage to the site. If significant paleontological resources are uncovered during project execution, authorities are to be notified and the designated

paleontologist may order excavations stopped, within reasonable time limits, to enable assessment, removal or protection of the resources" (City of Los Angeles, 2001).

Society for Vertebrate Paleontology

The SVP has established standard guidelines (SVP, 1995, 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation[1]. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological resource-specific Laws, Ordinances, Regulations, and Standards (LORS) accept and use the professional standards set forth by the SVP.

As defined by the SVP (1995:26), significant nonrenewable paleontological resources are:

> Fossils and fossiliferous deposits here restricted to vertebrate fossils and their taphonomic and associated environmental indicators. This definition excludes invertebrate or paleobotanical fossils except when present within a given vertebrate assemblage. Certain invertebrate and plant fossils may be defined as significant by a project paleontologist, local paleontologist, specialists, or special interest groups, or by lead agencies or local governments.

As defined by the SVP (1995:26), significant fossiliferous deposits are:

> A rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways, or nests and middens which provide datable material and climatic information). Paleontologic resources are considered to be older than recorded history and/or older than 5,000 years BP [before present].

Based on the significance definitions of the SVP (1995), all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

[1] http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx. Accessed January 3, 2017

A geologic unit known to contain significant fossils is considered to be "sensitive" to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either directly or indirectly disturb or destroy fossil remains. Paleontological sites indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case (SVP, 1995).

Fossils are contained within surficial sediments or bedrock, and are therefore not observable or detectable unless exposed by erosion or human activity. Therefore, without to natural erosion or human-caused exposure, paleontologists cannot know either the quality or quantity of fossils. As a result, even in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce significant fossils elsewhere within the same geologic unit (both within and outside of the study area), a similar geologic unit, or based on whether the unit in question was deposited in a type of environment that is known to be favorable for fossil preservation. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if the fossils are significant, that successful mitigation and salvage efforts may be undertaken.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the SVP (2010:1-2) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.).

- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.

- **Undetermined Potential.** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

- **No Potential.** Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within the study area.

Paleontological Resources Significance Criteria

Numerous paleontological studies have developed criteria for the assessment of significance for fossil discoveries (e.g. Eisentraut and Cooper, 2002; Murphey and Daitch, 2007; Scott and Springer, 2003, etc.). In general, these studies assess fossils as significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;

2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;

3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;

4. The fossils demonstrate unusual or spectacular circumstances in the history of life; or

5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

In summary, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important (Eisentraut and

Cooper, 2002; Murphey and Daitch, 2007; Scott and Springer, 2003). Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003, Scott et al. 2004).

METHODS AND RESULTS

Archival Research

The Project Site was the subject of thorough background research and analysis. The research included a paleontological records search conducted by the Natural History Museum of Los Angeles County (LACM), as well as geologic map and literature reviews conducted by ESA paleontologist Alyssa Bell, Ph.D. The Project Site has also been the subject of a geotechnical study (GeoDesign, 2017). This study was used to further characterize the subsurface geological setting within the Project Site and supplement the archival research.

Geologic Setting

The Project Site is located in the Los Angeles Basin, a structural depression approximately 50 miles long and 20 miles wide in the northernmost Peninsular Ranges Geomorphic Province (Ingersoll and Rumelhart, 1999). The Los Angeles basin developed as a result of tectonic forces and the San Andreas fault zone, with subsidence occurring 18 – 3 million years ago (Mya) (Critelli et al., 1995). While sediments dating back to the Cretaceous (66 million years ago) are preserved in the basin, continuous sedimentation began in the middle Miocene (around 13 million years ago) (Yerkes et al., 1965). Since that time, sediments have been eroded into the basin from the surrounding highlands, resulting in thousands of feet of accumulation (Yerkes et al., 1965). Most of these sediments are marine, as they eroded from surrounding marine formations, until the sea level dropped in the Pleistocene Epoch and deposition of the alluvial sediments that compose the uppermost units in the Los Angeles Basin began.

The Los Angeles Basin is subdivided into four structural blocks, with the Project Site located in the Central Block, where sediments range from 32,000 to 35,000 feet thick (Yerkes et al., 1965). The Central Block is wedge-shaped, extending from the Santa Monica Mountains in the northwest, where it is about 10 miles wide, to the San Joaquin Hills to the southeast, where it widens to around 20 miles across (Yerkes et al., 1965).

Geologic Map & Literature Review

Geologic mapping by Dibblee and Ehrenspeck (1991) indicates that the surface of the Project Site is covered with Holocene-aged younger Quaternary alluvium (mapped as Qa in **Figure 3**). The alluvial sediments were deposited on the ancient floodplain of the Los Angeles River and consist of well-sorted silts and sands, interbedded with stream channel deposits of sands and gravels (Dibblee and Ehrenspeck, 1991).

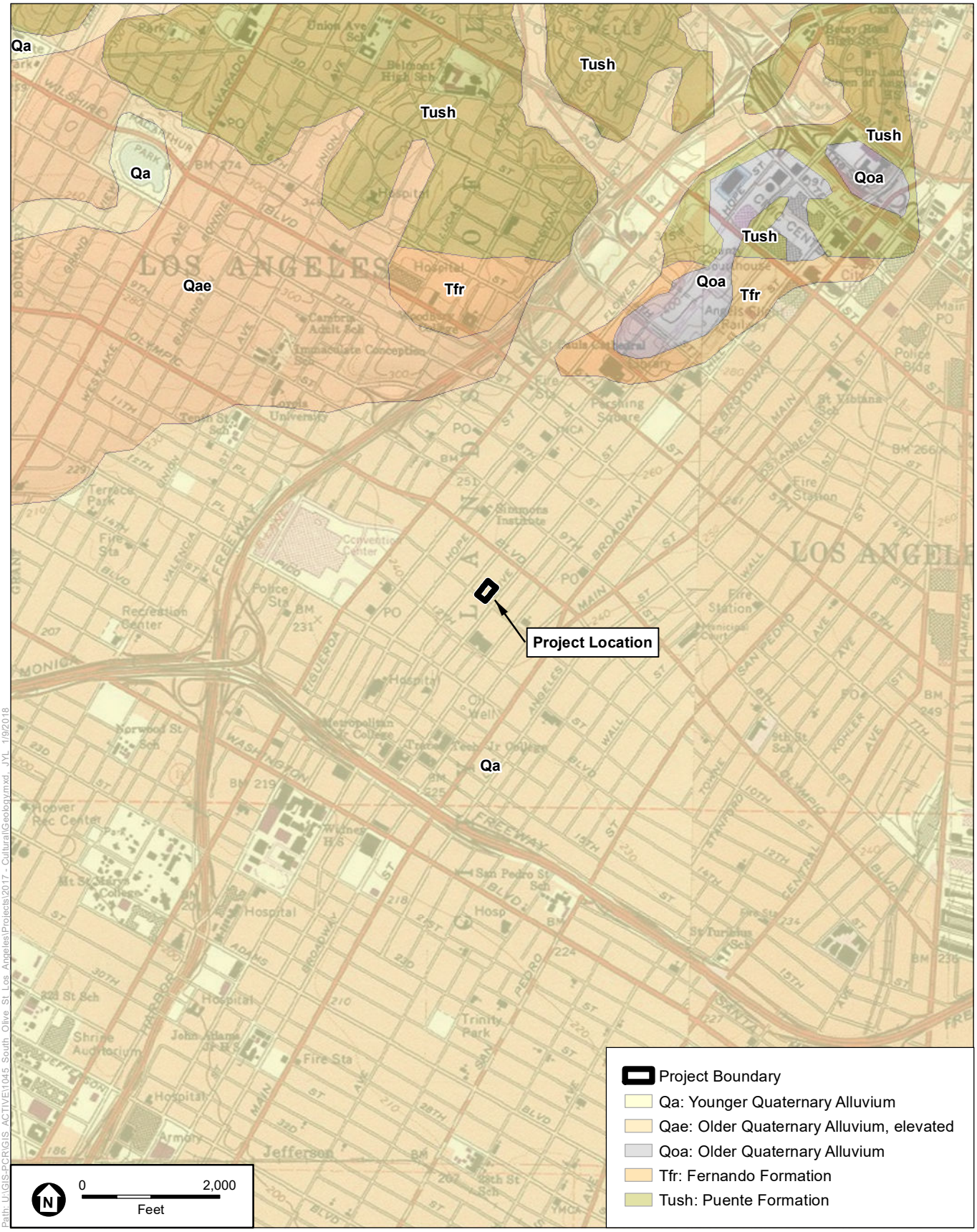
Geotechnical analysis of the Project Site indicates that artificial fill is anticipated to be shallow, with depths of 7 to 9.5 feet below ground surface (bgs) recorded in borings at the Project Site (GeoDesign, 2017). Below the artificial fill is the Holocene-aged younger Quaternary alluvium, as mapped by Dibblee and Ehrenspeck (1991), referred to as "Holocene alluvium" in the geotech report (GeoDesign, 2017). Beneath the younger alluvium, the Project Site is underlain by

Pleistocene-aged older Quaternary Alluvium (mapped as Qae and Qoa in **Figure 3**), referred to as "Pleistocene alluvium" in the geotech report (GeoDesign, 2017), and the Pliocene-aged Fernando Formation (mapped as Tfr in **Figure 3**). The nearest outcrops of older alluvium to the Project Site are to the north where 7th Street crosses the Harbor Freeway (I-110), roughly 0.6 miles away (Dibblee and Ehrenspeck, 1991). The depth at which younger alluvium transitions to older alluvium has not been determined in the Project area. To the north and northeast of the Project area, along the Harbor Freeway and Hollywood Freeway (I-101), a study correlating well and boring logs found that the depths of the older alluvium are highly variable, ranging from 10 – 200 feet bgs (Yerkes et al., 1977). The Fernando Formation is a marine and non-marine semi-friable, massively bedded sandstone that crops out northeast of the Project Site along 6th Street near Pershing Square, roughly 0.6 miles from the Project Site (Dibblee and Ehrenspeck, 1989). The Fernando Formation has been identified as occurring between 225 - 230 feet bgs in the project area (Yerkes et al., 1977).

The Holocene-aged younger Quaternary alluvium is relatively recent in age in the upper layers and, as such, is not old enough to contain fossil remains, which the SVP defines as over 5,000 years old (SVP, 2010). However, these sediments increase in age with depth, such that while the surficial sediments are too young to preserve fossils, the underlying older Quaternary alluvium dates to the late Holocene or Pleistocene Epoch and therefore may preserve fossil resources. These sediments have a rich fossil history in Los Angeles (Brattstrom and Sturn, 1959; Steadman, 1980) and throughout southern California (Jefferson 1991a and b, Miller 1971, Scott and Cox 2008). The most common fossils include the bones of mammoth, bison, horse, lion, cheetah, wolf, camel, antelope, peccary, mastodon, capybara, and giant ground sloth, as well as small animals such as rodents and lizards (Graham and Lundelius, 1994). In addition to illuminating the striking differences between Southern California in the Pleistocene and today, this abundant fossil record has been vital in studies of extinction (e.g. Sandom, et al., 2014; Scott, 2010), ecology (e.g. Connin et al., 1998), and climate change (e.g. Roy et al., 1996).

LACM Records Search

On November 16, 2017, ESA requested a database search from the LACM for records of fossil localities in and around the Project Site. The purpose of the museum records search was to: (1) determine whether any previously recorded fossil localities occur in the Project Site, (2) assess the potential for disturbance of these localities during construction, and (3) evaluate the paleontological sensitivity within the Project Site and vicinity. The records search returned no known localities within the Project Site, however a number of vertebrate fossils are known from similar sedimentary deposits in downtown Los Angeles (McLeod, 2017). These are summarized here.



SOURCE: Dibblee Geological Foundation

1045 S. Olive Street

Figure 3

Geology

ESA

Late Holocene- and Pleistocene-aged older alluvium (Qoa) underlies the surficial younger alluvium on the Project Site and vicinity. These sediments have yielded fossils of numerous Ice Age animals in the Los Angeles area. The closest locality known to the LACM is approximately 0.18 miles southeast of the Project Site at the intersection of Hill Street and 12th Street, where a fossil horse (*Equus*) was recovered from 43 feet bgs (McLeod, 2017). Around 3 miles northeast of the Project Site near the intersection of Mission Road and Daly Street around the Golden State Freeway (I-5), fossil specimens of pond turtle, (*Clemmys mamorata*), ground sloth (*Paramylodon harlani*), mastodon (*Mammut americanum*), mammoth (*Mammuthus imperator*), horse (*Equus*), and camel (*Camelops*) were recovered from a depth of 20-35 feet below the surface (McLeod, 2017). Just north of this locality, 3.13 miles northeast of the Project Site, near the intersection of Workman Street and Alhambra Avenue, excavations for a storm drain recovered fossil specimens of turkey (*Meleagris californicus*), sabre-toothed cat (*Smilodon fatalis*), horse (*Equus*), and deer (*Odocoileus*) at an unstated depth (McLeod, 2017).

The results of the database search are included as **Appendix B** to this report.

Paleontological Sensitivity Analysis

The review of the scientific literature and geologic mapping, as well as the records search from LACM, were used to assign paleontological sensitivities following the guidelines of the SVP (1995, 2010) to the geologic units present at the surface and subsurface of the Project Site that would be subject to ground-disturbing activities:

- **Younger Quaternary Alluvium (Qa) –** Surficial sediments; **low-to-high sensitivity**, increasing with depth. While the shallow layers of this unit are too young to preserve fossil resources (i.e., <5,000 years old), these sediments increase in age with depth and may preserve fossils in deeper layers. These potential fossils can include a wide variety of Ice Age animals, as reviewed above.

- **Older Quaternary Alluvium (Qoa, Qae) –** Subsurface, **high sensitivity.** A wide variety of Ice Age fossils are known to have been found in these sediments across the Los Angeles Basin, as reviewed above, including multiple specimens belonging to ten taxa known from within 0.18 miles of the Project Site (McLeod, 2017).

The exact depth at which the alluvium becomes old enough to preserve fossils (i.e., >5,000 years old) is unknown at the Project Site, as stated above. The closest study to identify the depth of this transition correlated well and boring logs from northwest and north of the Project Site, along U.S. Highways 110 and 101 in downtown Los Angeles (Yerkes et al., 1977). This study found that the depth to older alluvial sediments was highly variable, ranging from 10 to 200 feet bgs (Yerkes et al., 1977). The LACM records search indicated that fossils have been recovered at depths of as little as 20 feet in the area, based on resources found a few blocks away from the Project Site (LACM 1755; McLeod, 2017). Given the lack of definitive information on the depth of the transition to high sensitivity sediments at the Project Site, an estimated depth of 15 feet bgs is assumed for purposes of this study using the depths from Yerkes et al. (1977) and the LACM fossil localities (McLeod, 2017).

It should be noted that while the Fernando Formation is present in the subsurface of the Project Site, it occurs between 225-230 feet bgs in the area (Yerkes et al., 1977), and therefore would not be affected by construction activities associated with the Project, where excavation is expected to reach maximum depths of approximately 64 feet bgs.

CONCLUSIONS AND RECOMMENDATIONS

As a result of this study, the surficial sediments of the Project Site identified as younger Quaternary alluvium are assigned low paleontological sensitivity, as they are too young to preserve fossils. However, the Late Holocene – Pleistocene older alluvium, present at an undetermined depth in the subsurface of the Project Site, has high paleontological sensitivity. Based upon the depth to the older alluvium to the north and northeast of the Project Site (as little as 10 feet bgs; Yerkes et al., 1977) and the depth at which fossils have been found within 0.18-3.13 miles of the Project Site (as little as 20 feet bgs; McLeod, 2017), it is estimated that the transition from low to high sensitivity sediments occurs at ground 15 feet bgs. The depth of 15 feet is derived from the records search of the LACM (McLeod, 2017) and well and boring log correlations (Yerkes et al., 1977). Substantial excavation within the Project Site during construction for subterranean parking, deep excavation for excavation shoring, and ancillary uses or improvements is planned at depths up to 64 feet bgs, which would impact older alluvium determined to have a high sensitivity for fossils, as per the guidelines of the SVP (2010). This classification indicates a high potential for fossils to be present in the subsurface.

The following recommendations would serve to protect potentially unique paleontological resources or unique geological features, should they be encountered:

1. A qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP, 2010) (Qualified Paleontologist) shall be retained prior to the approval of demolition or grading permits. The Qualified Paleontologist shall provide technical and compliance oversight of all work as it relates to paleontological resources, shall attend the Project kick-off meeting and Project progress meetings on a regular basis, and shall report to the Project Site in the event potential paleontological resources are encountered.

2. The Qualified Paleontologist shall conduct construction worker paleontological resources sensitivity training at the Project kick-off meeting prior to the start of ground disturbing activities (including vegetation removal, pavement removal, etc.). In the event construction crews are phased, additional training shall be conducted for new construction personnel. The training session shall focus on the recognition of the types of paleontological resources that could be encountered within the Project Site and the procedures to be followed if they are found. Documentation shall be retained by the Qualified Paleontologist demonstrating that the appropriate construction personnel attended the training.

3. Paleontological resources monitoring shall be performed by a qualified paleontological monitor (meeting the standards of the SVP, 2010) under the direction of the Qualified Paleontologist. Paleontological resources monitoring shall be conducted for all ground disturbing activities that exceed 15 feet in depth in

previously undisturbed older Alluvial sediments which have high sensitivity for encountering paleontological resources. However, depending on the conditions encountered, full-time monitoring within these sediments can be reduced to part-time inspections or ceased entirely if determined adequate by the Qualified Paleontologist. The surficial Alluvium has low paleontological sensitivity and so work in the upper 15 feet of the Project Site does not require monitoring. The Qualified Paleontologist shall spot check the excavation on an intermittent basis and recommend whether the depth of required monitoring should be revised based on his/her observations. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils or potential fossils. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries.

4. Any significant fossils collected during project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. The Qualified Paleontologist shall prepare a final monitoring and mitigation report for submittal to the City in order to document the results of the monitoring effort and any discoveries. If there are significant discoveries, fossil locality information and final disposition will be included with the final report which will be submitted to the appropriate repository and the City.

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APPENDIX A
Personnel Qualifications



EDUCATION

Ph.D., Vertebrate Paleontology; University of Southern California

M.S., Environmental Microbiology; University of Tennessee

B.A. with honors, Ecology and Systematics; William Jewell College & Homerton College, Cambridge University

10 YEARS EXPERIENCE

Alyssa Bell, PhD

Paleontologist

Dr. Alyssa Bell has supervised and peformed field work, authored project reports, and provided scientific and compliance direction and quality control for paleontological projects throughout Southern California. Dr. Bell has accumulated a wealth of field experience, working with crews from a variety of institutions on field sites in California, Arizona, New Mexico, South Dakota, and Utah, and has led her own expeditions in Montana. She has performed all manner of investigations from surveys and assessments to monitoring and fossil idenfitication over the last 15 years as a part of her academic pursuits and professional consultation, with the last three years being exclusively professional endeavors.

In addition to consulting, Dr. Bell serves as a postdoctoral fellow at the Dinosaur Institute of the Natural History Museum of Los Angeles County (LACM). There she is involved in pursuing her own research into fossil birds as well as working with the Institute's field projects and museum-wide education and outreach initiatives. She has also published peer-reviewed articles and book chapters and given numerous presentations at scientific conferences on both her paleontological and microbiological research.

Relevant Experience

ICHA Area 10 (PA 10-2 & 10-4) Archaeological and Paleontological Monitoring, Irvine, CA. *Principal Investigator & Project Paleontologist.* Dr. Bell managed the curatorial process for fossils collected during monitoring of pre-construction activities at the University of California, Irvine, and authored the final report.

Suncrest Reactive Power Support Project, San Diego County, CA. *Principal Investigator.* Dr. Bell authored the paleontological assessment for the Proponent's Environmental Assessment (PEA) in support for a dynamic reactive power support facility and associated 230-kilovolt (kV) transmission line near Alpine, California. The application for Certificate of Public Convenience and Necessary was filed in summer 2015 and the PEA was deemed complete in December 2015.

Washington National Archaeological and Paleontological Monitoring (Access Culver City), Culver City, CA. *Principal Investigator & Project Paleontologist.* Dr. Bell managed the curatorial process for fossils collected during monitoring of pre-construction activities at the Washington national site in Culver City, CA and authored the final report.

OTO Hotels Santa Monica Archaeological and Paleontological Service, Santa Monica, CA. *Principal Investigator.* Dr. Bell supervised paleontological monitoring and mitigation services during construction excavations and grading. Services included implementation of a paleontological mitigation monitoring program and reporting.

Sacred Heart Specific Plan Environmental Impact Report (EIR), La Canada Flintridge, CA. *Principal Investigator.* Dr. Bell prepared paleontological studies and

developed monitoring & mitigation recommendations for the Sacred Heart development project.

Sixth & Bixel Paleontological Monitoring Services Project, Los Angeles, CA. *Principal Investigator & Project Paleontologist.* Dr. Bell supervised paleontological monitoring of preconstruction activities in support of a development project encompassing two parcels in downtown Los Angeles. During these activities, monitors identified and recovered numerous significant vertebrate fossils. Dr. Bell supervised the excavation of fossilized whale remains discovered on-site, and oversaw the collection and curation of all fossil specimens.

Natural and Cultural Support for the Gordon Mull Subdivision EIR, Glendora, CA. *Principal Investigator.* Dr. Bell collected the necessary data to prepare the technical sections and mitigation recommendations to support an EIR prepared by another firm to address the Gordon Mull Subdivision in the city of Glendora. The project is proposes to redevelop a 71-acre, 19-lot located in the San Gabriel Foothills.

Lake Elsinore Lakeshore Town Center Permitting, Riverside County, CA. *Principal Investigator.* Dr. Bell provided paleontological studies and developed monitoring and mitigation recommendations for the Lake Elsinore Town Center project in Riverside County.

San Pedro Plaza Park - Phase III Archaeological Monitor, Los Angeles, CA. *Principal Investigator.* Dr. Bell identified fossils during the mitigation measurement-required archaeological monitoring of earthmoving activities in San Pedro Park Plaza. She is also responsible for curation of the fossil material and authorship of the paleontological section of the final report.

City of Hope Specific Plan and EIR, Duarte, CA. *Principal Investigator.* Dr. Bell provided paleontological resource studies for the City of Hope Specific Plan Project.

Blythe Solar Power Project, Units 1 & 2, Riverside County, CA. *Project Paleontologist.* Dr. Bell supervised paleontological monitoring of preconstruction activities for a solar photo-voltaic cell power-generating facility outside the city of Blythe. As a part of her role, she provided oversight and management of paleontological monitors and development of the final monitoring report.

Industrial Project Environmental Impact Report, Colton, CA. *Principal Investigator.* Dr. Bell provided a paleontological resources study for a six-acre industrial project site at the southwest corner of Agua Mansa Road and Rancho Avenue in the city of Colton.

Mojave Solar Project Paleontological Reporting, San Bernardino County, CA. *Principal Investigator.* Dr. Bell managed curation of fossil materials and authored the final report of paleontological monitoring services provided for construction activities in support of a solar field development project in San Bernardino County.

El Camino Real Bridge Replacement Environmental Services, Atascadero, CA. *Principal Investigator.* Dr. Bell provided environmental services, including preparation of all California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) documentation, technical studies, and permitting, for the replacement of the El Camino Real Bridge over Santa Margarita Creek in Atascadero.



Sara Dietler

Archaeologist

EDUCATION

B.A., Anthropology, San Diego State University

19 YEARS EXPERIENCE

CERTIFICATIONS/ REGISTRATION

California BLM Permit, Principal Investigator, Statewide

Nevada BLM Permit, Paleontology, Field Agent, Statewide

PROFESSIONAL AFFILIATIONS

Society for American Archaeology (SAA)

Society for California Archaeology (SCA)

Sara is a senior archaeology and paleontology lead with 20 years of experience in cultural resources management in Southern California. As a senior project manager, she manages technical studies including archaeological and paleontological assessments and surveys, as well as monitoring and fossil salvage for many clients, including public agencies and private developers. She is a cross-trained paleontological monitor and supervisor, familiar with regulations and guidelines implementing the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and the Society of Vertebrate Paleontology guidelines. She has extensive experience providing oversight for long-term monitoring projects throughout the Los Angeles Basin for archaeological, Native American, and paleontological monitoring compliance projects and provides streamlined management for these disciplines.

Relevant Experience

Los Angeles Unified School District (LAUSD) Central Los Angeles High School #9; Los Angeles, CA. *Senior Project Archaeologist & Project Manager*. Sara conducted on-site monitoring and investigation of archaeological sites exposed as a result of construction activities. During the data recovery phase in connection with a 19th century cemetery located on-site, she participated in locating of features, feature excavation, mapping, and client coordination. She organized background research on the cemetery, including genealogical, local libraries, city and county archives, other local cemetery records, internet, and local fraternal organizations. Sara advised on the lab methodology and setup and served as project manager. Sara was a contributing author and editor for the published monograph, which was published as part of a technical series, “Not Dead but Gone Before: The Archaeology of Los Angeles City Cemetery.”

Downtown Cesar Chavez Median Project, City of Los Angeles, CA. *Project Manager*. Sara assisted the City of Los Angeles Department of Public Works Bureau of Engineering with a Local Assistance Project requiring consultations with Caltrans cultural resources. Responsible for Caltrans coordination, serving as contributing author and report manager for required ASR, HPSR, and HRER prepared for the project.

Elysian/USC Water Recycling Project Initial Study/Environmental Assessment, Los Angeles, CA. *Project Manager.* Sara worked on the Initial Study/Mitigated Negative Declaration and an Environmental Assessment/Finding of No Significant Impact to construct recycled water pipelines for irrigation and other industrial uses serving Los Angeles Department of Water and Power customers in downtown Los Angeles, including Elysian Park. The U.S. Environmental Protection Agency is the federal lead agency.

APPENDIX B
Record Search Results (Confidential)

APPENDIX G

Greenhouse Gas Emissions Documentation & ELDP Materials

G-1 Greenhouse Gas Technical Appendix

1045 OLIVE PROJECT

Greenhouse Gas Technical Appendix

Prepared for
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2200 Biscayne Boulevard
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September 2019

ESA

1045 OLIVE PROJECT

Greenhouse Gas Technical Appendix

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Acronyms and Abbreviations

Acronym	Description
AR4	(Intergovernmental Panel on Climate Change) Fourth Assessment Report
BAAQMD	Bay Area Air Quality Management District
Btu	British thermal unit
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	Commercial End-Use Survey
CH_4	Methane
City	City of Los Angeles
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
EIR	Environmental Impact Report
EMFAC	on-road vehicle emissions factor model
GHG	Greenhouse Gas
GWP	Global Warming Potential
hp	horsepower
HQTA	high-quality transit area
IPCC	Intergovernmental Panel on Climate Change
kW	Kilowatt
LADWP	Los Angeles Department of Water and Power
LEED	Leadership and Energy and Environmental Design
$MTCO_2e$	Metric ton of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
N_2O	Nitrous Oxide
NOP	Notice of Preparation
OFFROAD	off-road emissions factor model
PDF	Project design feature
RASS	Residential Appliance Saturation Survey
SAR	(Intergovernmental Panel on Climate Change) Second Assessment Report
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
TPA	transit priority area
USEPA	United States Environmental Protection Agency
USGBC	United States Green Building Code
VMT	Vehicle miles travelled

1045 OLIVE PROJECT
Greenhouse Gas Emissions Methodology

1. Introduction

ESA conducted a comprehensive greenhouse gas (GHG) emissions analysis and report for the 1045 Olive Project (Project). Emissions associated with construction and operation of the Project were quantified. This technical report describes the methodology used to estimate GHG emissions from existing uses and the Project. Methodology for emissions reductions from project design features (PDFs) and mitigation measures are also described herein. This section describes the methodology used to calculate emissions resulting from Project construction and operational activities to evaluate greenhouse gas impacts. Detailed modeling calculations and supporting files are provided in **Exhibits A** through **D** of this Technical Appendix.

2. Methodology

This section describes the methodology used to calculate GHG emissions resulting from Project construction and operational activities and to evaluate GHG impacts. The GHG emissions evaluated include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Not all GHGs possess the same ability to induce climate change; as a result, GHG contributions are commonly quantified in the units of equivalent mass of carbon dioxide (CO_2e). Mass emissions are calculated by converting pollutant specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value.[1] These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. Construction activities would generate GHG emissions from equipment usage, truck hauling and worker vehicle commutes. Long-term operational activities would generate GHG emissions through vehicle trips, energy usage, water demand, solid waste and wastewater generation, and area source emissions such as landscaping equipment.

1 GWPs and associated CO2e values were developed by the Intergovernmental Panel on Climate Change (IPCC), and published in its Second Assessment Report (SAR) in 1996. Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's SAR. The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The California Air Resources Board (CARB) has begun reporting GHG emission inventories for California using the GWP values from the IPCC AR4.

2.1 Project Construction Emissions

Construction of the Project has the potential to generate GHG emissions through the use of heavy-duty construction equipment, such as excavators and forklifts, and through vehicle trips generated from workers and haul trucks traveling to and from the Project Site. Mobile source emissions, primarily CO_2, would result from the use of construction equipment such as dozers and loaders. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions.

Construction GHG impacts were assessed based on the incremental increase in emissions compared to baseline conditions. Under CEQA, the baseline environmental setting for an Environmental Impact Report (EIR) is generally established at or around the time that the Notice of Preparation (NOP) for the EIR is published. The Project Site currently contains five commercial buildings totaling 35,651 square feet and an approximately 5,952 square-foot paved parking and hardscape area, for a total of 41,603 square feet. These existing uses would be demolished and removed to allow for development of the Project.

Project construction activities that would have the potential to create GHG emissions include vehicle trips generated by construction workers, vendor trucks, and haul trucks traveling to and from the Project Site. The Project's GHG emissions during construction have been estimated by assuming a conservative scenario for construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source emissions factors. The emissions have been estimated using the California Emissions Estimator Model (CalEEMod) (Version 2016.3.2) software, an emissions inventory software program recommended by the SCAQMD. The input values used in this analysis were adjusted to be Project-specific based on equipment types and the construction schedule. Haul truck trip estimates were based on excavation volumes obtained from the Applicant and 14 cubic yards soil capacity haul trucks; cement truck trip estimates were based on mat foundation volumes obtained from the Applicant and 10 cubic yards concrete capacity concrete trucks; worker trip estimates were provided by the Applicant; and vendor truck trip estimates were based on calculation methodologies in CalEEMod. CalEEMod is based on outputs from the CARB off-road emissions factor (OFFROAD) and on-road emissions factor (EMFAC) models, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles. These values were applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity.

Construction phasing would include demolition of the existing buildings and associated parking, site clearing, grading, excavation, subterranean parking and building construction. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,410 cubic yards of demolition debris that would need to be hauled away (asphalt, interior and exterior building demolition, and general construction debris). Concrete trucks would be used to deliver building foundation materials to the Project Site. Emissions from these on-road heavy-duty truck activities were estimated by construction phase using the CARB EMFAC2017 model.

Detailed Project construction phasing, equipment list, and emissions calculations are provided in **Exhibit A** of this Technical Appendix. The Project may commence construction activities at a

later date than shown in the emissions modeling files in **Exhibit A**. If this occurs, construction GHG emissions would be lower than those analyzed herein due to the use of a more energy-efficient and cleaner burning construction vehicle fleet mix, pursuant to State regulations that require vehicle fleet operators to phase-in less polluting heavy-duty equipment. As a result, should Project construction commence at a later date than analyzed herein, GHG emissions and associated GHG impacts would be lower than the impacts disclosed in the Project's Draft EIR.

2.1.1 Emissions from Construction Equipment

Construction of the Project would result GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from construction equipment during the construction phase. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road emissions factors using CalEEMod. The output values used in this analysis are adjusted to be Project-specific based on equipment types and the construction schedule. These values were then applied to the same construction equipment and phasing assumptions used in the criteria pollutant analysis to generate GHG emissions values for each construction year.

Construction equipment emissions will vary with engine model years in which newer equipment will emit fewer pollutants. The CalEEMod model uses an emission rate for equipment, which represents an average model year for available equipment unless the specific emissions standards are applied to the equipment. The proposed Project would incorporate into the Project design the use of standardized and environmentally protective construction equipment consistent with state regulations (Title 13 California Code of Regulations [CCR] Section 2449) and SCAQMD Air Quality Management Plan (AQMP) control strategies to control emissions (refer to the discussion of PDFs discussed below). CalEEMod calculates the exhaust emissions based on the CARB OFFROAD methodology using the equation presented below.

Construction Off-Road Equipment:

$$Emissions_{Diesel}\ [MTCO_2e] = \sum_i (EF \times Pop \times AvgHP \times Load \times Activity \times GWP)_i \div 10^6$$

Where:

$MTCO_2e$	=	Metric tons of carbon dioxide equivalents
EF	=	Emission factor from OFFROAD [g/bhp-hr]
Pop	=	Population [quantity of same equipment type]
AvgHP	=	Maximum rated average horsepower [hp]
Load	=	Load Factor [dimensionless]
Activity	=	Hours of operation [hours]
GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
10^6	=	Conversion factor [g/MT]
i	=	Summation Index

The CalEEMod software provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. The emission forecasts provided reflect a specific set of

conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Construction equipment lists for each phase of activity were provided by the applicant and/or applicant's construction contractor(s) and architect(s). The amount of construction equipment used and the duration of construction activity could have a substantial effect upon the amount of construction emissions, concentrations and the resulting impacts occurring at any one time. As such, the emission forecasts provided reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner.

2.1.2 Emissions from On-Road Trips

Construction generates on-road vehicle exhaust from personal vehicles for worker and vendor commuting, and trucks for soil and material hauling. These emissions are based on the number of trips and vehicle miles traveled (VMT) along with emission factors from EMFAC. Emissions for GHGs were obtained from EMFAC in units of grams per VMT. The emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors from EMFAC as follows:

Construction On-Road Trips:

$$Emissions_{pollutant}\ [MTCO_2e] = \sum_i (VMT \times EF_{pollutant} \times GWP)_i \div 10^6$$

Where: $Emissions_{pollutant}$ = emissions from vehicles for each pollutant [g]
VMT = vehicle miles traveled [miles]
$EF_{pollutant}$ = emission factor for each pollutant [g/mile]
GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
10^6 = Conversion factor [g/MT]
i = Summation Index

2.2 Project Operational Emissions

Operation of the Project has the potential to generate GHG emissions through vehicle trips traveling to and from the Project Site. In addition, emissions would result from area sources on-site such as building natural gas combustion from water heaters, building electricity demand, water demand, solid waste and wastewater generation, and landscaping equipment. GHG emissions would also be generated by point sources including an emergency generator. The Project is not expected to contain any large stationary combustion equipment such as large boilers or combustion turbines.

The Project's operational GHG emissions were estimated using the CalEEMod software for natural gas combustion from building heating and cooking and landscaping equipment. For mobile sources, the estimated vehicle trips and VMT were provided for the Project uses in the Transportation Study[2] and supplemental VMT conversion data are provided in **Exhibit C** of this Technical Appendix. The EMFAC2017 model was run in the emissions mode (also referred to as

[2] The Mobility Group, 1045 Olive Project Transportation Study, 2019. Provided in Appendix N of this Draft EIR.

the "Burden" mode) and used to generate Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile. These emission factors were then applied to the annual VMT to obtain annual mobile source GHG emissions. The Project's annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic analysis prepared for the Project.[3] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the Project site uses. The VMT calculations for the Project Site uses are provided in **Exhibit C** of this Technical Appendix.

After circulation of the Project Notice of Preparation (NOP) and Los Angeles Department of Transportation (LADOT) approval of the Project Transportation Study, on July 30, 2019, the City updated its travel demand model and transportation impact thresholds based on VMT pursuant to State CEQA Guidelines Section 15064.3. Therefore, the Project Transportation Study also includes a VMT analysis of the Project's impacts based on the recently adopted methodology, which differs from the Project's Environmental Leadership Development Project (ELDP) analysis pursuant to Assembly Bill 900. The VMT analysis using the recently adopted methodology, which is included in Appendix N-4 of the Project's Draft EIR, results in lower VMT than the ELDP analysis. As a conservative approach, the VMT analysis from the ELDP analysis is used for operational mobile source GHG impacts.

Natural gas and electricity usage factors in CalEEMod are based on the California Energy Commission (CEC) 2002 Commercial End-Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) data adjusted to reflect more recent Title 24 improvements.

Stationary sources would include on-site emergency generator capacity, estimated at approximately 708 kilowatts (950 horsepower). The emergency generator would result in emissions during maintenance and testing operations. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470. Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470. For the purposes of estimating annual GHG emissions, it is estimated that the emergency generators would operate for up to 50 hours in a year for maintenance and testing purposes.

Operational GHG emissions impacts were assessed based on the incremental increase in emissions compared to baseline conditions. Under CEQA, the baseline environmental setting for an EIR is generally established at or around the time that the NOP for the EIR is published. As discussed previously, the Project Site currently contains five commercial buildings totaling 35,651 square feet and an approximately 5,952 square-foot paved parking and hardscape area, for a total of 41,603 square feet. These existing uses would be demolished and removed to allow for development of the Project. Therefore, the net change in operational emissions is based on the difference between the existing Project Site emissions and the emissions of the Project Site at full buildout. Detailed Project operational emissions calculations are provided in **Exhibit C** of this Technical Appendix.

[3] The Mobility Group, 1045 Olive Project Transportation Study, 2019. Provided in Appendix N of this Draft EIR.

2.2.1 Emissions from Area Sources (Hearths and Landscaping Equipment)

Area source emissions were calculated using CalEEMod default assumptions for the Project land uses. Area sources of GHG emissions include hearths and landscape maintenance equipment. Emissions associated with natural gas and electricity usage are discussed in the building energy use section below.

Hearths (Fireplaces)

The Project would not include natural gas-fired fireplaces in the residential uses as per Project Design Feature AQ-PDF-1. Therefore, emissions from hearths (fireplaces) are not included in the Project's emissions calculations.

Landscaping Equipment

Emissions from existing uses include equipment used to maintain landscaping, such as lawnmowers and trimmers. The CalEEMod software uses landscaping equipment emission factors from the CARB OFFROAD emissions factor model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*.[4] The CalEEMod software assumes that landscaping equipment operates for 250 days per year in the South Coast Air Basin.

Landscaping Equipment

Annual Emissions [$MTCO_2e$] = $(\sum_i (Units \times EF_{LE} \times A_{LE} \times GWP)_i) \div 10^6$

Where: Units = Number of land use units (same land use type) [DU or sqft]
EF_{LE} = Emission factor [grams [g] / DU or sqft / day]
A_{LE} = Landscaping equipment operating days per year [day/year]
GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
10^6 = Conversion factor [g/MT]
i = Summation index

2.2.2 Emissions from Building Energy Usage (Natural Gas)

With regard to energy usage, the consumption of fossil fuels to provide heating and hot water generates GHG emissions. The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the Project were obtained from the CalEEMod software, which provides statewide emission factors. Future fuel consumption rates are estimated based on specific square footage of the Project land uses. Energy usage (on-site natural gas consumption) for the Project is calculated within CalEEMod using the CEC CEUS and RASS data sets.[5] These data sets provide energy intensities of different land uses throughout

4 California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, June 13, 2003, http://www.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_act.pdf. Accessed January 2019.

5 California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed March 2018.

the state and different climate zones. However, since the data from the CEUS is from 2002 and the RASS data is similarly from an earlier time period, the CalEEMod software incorporates correction factors to account for compliance with the Title 24 Building Standards Code. The correction factors are applied only to the new building construction.

Natural gas-related emissions of GHGs associated with operation of the Project are based on the size of the Project land uses, and the natural gas demand factors for the land uses. Natural gas GHG emissions are generally calculated as follows:

Natural Gas:

Annual Emissions [$MTCO_2e$] = ($\sum_i$ (Units × D_{NG} × EF_{NG} × GWP)$_i$) ÷ 2204.62

Where: Units = Number of land use units (same type) [DU or 1000 sqft]
D_{NG} = Natural gas combustion factor [MMBtu/DU or 1000 sqft/year]
EF_{NG} = Emission factor [lbs/MMBtu]
GWP = Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
2204.6 = Conversion factor [pounds/MT]
i = Summation index

2.2.3 Emissions from Building Energy Usage (Electricity)

The generation of electricity in California is achieved through the combustion of fossil fuels, primarily natural gas, using steam boilers, internal combustion engines, and combustion turbines. A portion of the electricity in California is imported from outside the state and is derived from the combustion of coal and other non-gaseous fossil fuels. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The electricity generation occurs off-site; therefore, electricity use results in GHG emissions that are considered to be indirect.

Emissions of the Project's GHGs are based on the size of the Project land uses, the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. This assessment also includes electricity-related GHG emissions from the parking lot, which would include lighting electricity. Annual electricity GHG emissions in units of $MTCO_2e$ are calculated as follows:

Electricity:

Annual Emissions [$MTCO_2e$] = ($\sum_i$ (Units × D_E × EF_E × GWP)$_i$) ÷ 2204.6

Where: Units = Number of land use units (same land use type) [1000 sqft]
D_E = Electrical demand factor [megawatt-hour (MWh)/1000 sqft/year]
EF_E = GHG emission factor [pounds per megawatt-hour (MWh)]
GWP = Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
2204.6 = Conversion factor [pounds/MT]
i = Summation index

Since the Project would also be required to meet the Title 24 standards in effect at the time of building permit application (potentially the 2019 standards if adopted at the time of building permit application), this analysis conservatively applies the 2016 Title 24 Building Standards Code for the Project.

The Los Angeles Department of Water and Power (LADWP) provides electric service to the Project Site. While not required by CEQA, the Project would voluntarily meet the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act (the Act). This Act requires, among other things, that the Project achieve no net increase in GHG emissions. According to CARB staff, for projects that would voluntarily meet the requirements of the Act, "[i]f an applicant would like to use an EF [emission factor] that represents the state's Renewable Portfolio Standard (RPS) law and growth in electricity demand, the EF of 595 [pounds] CO_2/MWh may be used."[6] According to CARB staff, the "EF represents a 'marginal' supply profile for new generation that will be added to the grid in the years 2020 and beyond, and is consistent with the methodology used in state emission rule impact assessments."[7] Therefore, consistent with the CARB staff recommendation, a CO_2 intensity factor of 595 pounds of CO_2 per MWh was used for electricity emissions for the Project initial operational year. Emission factors for CH_4 and N_2O were obtained from CalEEMod.[8]

2.2.4 Emissions from Mobile Sources

The Project's VMT was based on the trip generation rates and trip distances for each land use as provided in the Project Transportation Study that was prepared for the Project's ELDP analysis pursuant to Assembly Bill 900, which was based on CalEEMod VMT factors,[9] which then estimates the total VMT. In general, VMT estimates consider the following factors described below.

Trip Type

The trip type breakdown describes the purpose of the trip generated at each land use. For example, the trip type breakdown indicates the percentage of trips generated at single family home for work, for shopping, and for other purposes. Multiplying the total trips for a land use by trip type breakdown percentage yields trips of a given trip type. Two sets of trip type breakdown are used in CalEEMod – residential breakdown and commercial breakdown.

Residential trip type: These include home-work (H-W), home-shop (H-S), or home-other (H-O). A home-work trip represents the trip from the home to the workplace. A home-shop trip represents the trip from the home to a land use where shopping takes place (generally retail). A home-other represents all other types of trips generated from the resident such as school,

6 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017. This document is provided at the end of Appendix G of this Draft EIR.

7 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017. This document is provided at the end of Appendix G of this Draft EIR.

8 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed January 2017.

9 The Mobility Group, 1045 Olive Project Transportation Study, 2019. Provided in Appendix N of the Project's Draft EIR.

entertainment, etc. The trip type breakdown is from district supplied information or the 1999 Caltrans Statewide Travel Survey is used as default or specific information obtained from the various air quality management and air pollution control districts.

Commercial trip type: These include commercial-customer (C-C), commercial-work (C-W) and commercial-nonwork (C-NW). A commercial-customer trip represents a trip made by someone who is visiting the commercial land use to partake in the services offered by the Site. The commercial-work trip represents a trip made by someone who is employed by the commercial land use sector. The commercial-nonwork trip represents a trip associated with the commercial land use other than by customers or workers. An example of C-NW trips includes trips made by delivery vehicles of goods associated with the land use.

Primary Trip Length

In CalEEMod, each trip type has a primary trip length associated with it. These trip lengths are based on the location and urbanization selected on the project characteristic screen. These values were supplied by the districts or use a default average for the state. Each district (or county) also assigns trip lengths for urban and rural settings.

Pass-by and Diverted Trips

Trip link types further describe the characteristics of the trip attracted to each land use, whether it's a primary trip, a diverted link trip, or a pass-by trip. For example, a commercial customer pass-by trip could be a person going from home to shop on his/her way to work. In addition, a commercial customer diverted-link trip could be a person going from home to work, and on its way making a diversion to shop. Pass-by trips generate virtually no additional running emissions but could generate additional resting and startup emissions. Diverted trips generate less running emissions compared to primary trips, and can also generate additional resting and startup emissions.

Mobile Source Emission Factors

Mobile source emissions were calculated outside of CalEEMod using the EMFAC2017 model. EMFAC was used to generate emission factors, in pounds per mile, for the South Coast Air Basin's motor vehicle fleet mix. Using the annual VMT and emission factors, annual GHG emissions were estimated.

Emissions from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the Project Site. The emissions were calculated using a representative motor vehicle fleet mix for the South Coast Air Basin for the opening year of the Project. As discussed above, all vehicle types would visit the Project Site; therefore, the use of the motor vehicle fleet mix for the South Coast Air Basin is an appropriate modeling parameter. Mobile source emissions are generally calculated as follows:

Mobile Source:

$$\text{Emissions } [MTCO_2e] = \left(\sum_i (VMT \times EF_{Pollutant} \times GWP)_i \right) \div 2204.6$$

Where: VMT = Vehicle miles traveled
$EF_{Pollutant}$ = EMFAC Fleet emissions factor [pounds per mile]
GWP = Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
2204.6 = Conversion factor [pounds/MT]
i = Summation index

2.2.5 Emissions from Stationary Sources

Stationary sources included diesel-fueled emergency generator, estimated to be up to approximately a 708 kilowatt (kW) in size, that would be installed at the Project Site. The generator emissions were based on emission factors from SCAQMD's Rule 1470 and USEPA.

Emissions associated with periodic maintenance and testing of the emergency generator (approximately rated at 708 kilowatts (950 horsepower) for the Project are estimated separately outside of the CalEEMod software. The emergency generator emissions are calculated based on compliance with SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) mandated emission limits and operating hour constraints. As discussed previously, Rule 1470 applies to stationary compression ignition engine greater than 50 brake horsepower and sets limits on emissions and operating hours. In general, new stationary emergency standby diesel-fueled engines greater than 50 brake horsepower are not permitted to operate more than 50 hours per year for maintenance and testing. In general, stationary-source emergency generator emissions are calculated as follows:

Stationary Source Emergency Generator:

$$Emissions_{Diesel}\,[MTCO_2e] = \left(\sum_i (EF \times Pop \times HP \times Load \times Activity \times GWP)_i \right) \div 10^6$$

Where: EF = Emission factor [g/bhp-hr]
Pop = Population [quantity of same equipment type]
HP = Maximum rated horsepower [hp]
Load = Load Factor [dimensionless]
Activity = Hours of operation [hours per day, hours per year]
GWP = Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
10^6 = Conversion factor [g/MT]
i = Summation index

2.2.6 Emissions from Restaurant Charbroiling

There are no GHG emissions associated with charbroiling. Therefore, GHG emissions are not required to be estimated for charbroiling.

2.2.7 Solid Waste Decomposition Emissions

The Project would generate solid waste from day-to-day operational activities, which generally consists of product packaging, landscape clippings, furniture, clothing, bottles, food scraps, newspapers, plastic, and other items routinely disposed of in trash bins. A portion of the waste is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to

local landfills for disposal. Waste that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the Project are calculated using the CalEEMod software. The emissions are based on the size of the Project land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Waste:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_W \times EF_W \times GWP)_i \right) \div 1.1023$$

Where:

Units	=	Number of land use units (same land use type) [1000 sqft]
D_W	=	Waste disposal rate [tons/1000 sqft/year]
EF_W	=	GHG emission factor [tons/ton waste]
GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
1.1023	=	Conversion factor [tons/MT]
i	=	Summation index

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of 76 percent, according to the most recent data available.[10] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery) are statewide averages and are used in this assessment. Solid waste emissions are constant for the two Project scenarios.

2.2.8 Water Demand and Wastewater Generation and Treatment Emissions

Water and wastewater generated from the land uses under the Project would require energy to supply, distribute and treat. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The electricity generation occurs off-site; therefore, the electricity use from water and wastewater results in GHG emissions that are considered to be indirect. Wastewater also results in emissions of GHGs from wastewater treatment systems (e.g., septic, aerobic, or lagoons) as well as from solids that are digested either through an anaerobic digester or with co-generation from combustion of digester gas.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in

[10] City of Los Angeles, Department of Public Works, LA Sanitation, Zero Waste Progress Report, March 2013, https://bioenergyproducers.files.wordpress.com/2016/11/la-zero-waste-report.pdf. Accessed January 2018.

CalEEMod for the type of wastewater treatment and water usage rates. Calculation formulas are described in detail in the *California Emissions Estimator Model User's Guide, Appendix A*.[11] Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod as follows for indoor and outdoor water demand:

Water Supply, Treatment, and Distribution; Wastewater Treatment (electricity):

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_W \times (EI_W \div 1000) \times EF_W \times GWP)_i \right) \div 2204.62$$

Where:

Units	=	Number of land use units (same land use type) [1000 sqft]
D_W	=	Water demand factor [million gallons (Mgal)/1000 sqft/year]
EI_W	=	Electricity intensity factor [kilowatt-hours (kWh)/Mgal]
1000	=	Conversion factor [kWh/MWh]
EF_W	=	GHG emission factor [pounds/MWh]
GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
2204.6	=	Conversion factor [pounds/MT]
i	=	Summation index

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report *Refining Estimates of Water-Related Energy Use in California*, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[12] The same electricity GHG emissions factors discussed above for building electricity are used for water and wastewater energy usage.

As stated in the *User's Guide*, the GHGs emitted from each type of wastewater treatment are based on the CARB's *Local Government Operations Protocol* (LGOP),[13] which are in turn based on USEPA methodologies.[14] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas. Refer to Section IV.O.2, *Water Supply*, of the Project's Draft EIR for the estimated water usage rate for the existing Project Site and the Project.

2.3 No Implementation of Emissions Reduction Measures (NIERM) Scenario Emissions

The emissions reduction measures discussed within CARB's Climate Change Scoping Plan, SCAG's 2016-2040 RTP/SCS, the City's Green New Deal, the LA Green Building Code are applicable to the Project. In addition, the Project would voluntarily meet the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act (the Act) and provide or obtain GHG emission offsets as required to achieve no net increase in GHG emissions. These plans and policies are intended to reduce GHG emissions in order to meet the targets of the States

11 California Air Pollution Control Officers Association, California Emissions Estimator Model User's Guide, 2017.

12 California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, 2006.

13 California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, 2008.

14 United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, 2008.

GHG reduction mandates under AB 32 and SB 32. In order to demonstrate the efficacy of the measures required under these applicable GHG reduction plans and policies in reducing the Project's incremental contribution of GHG emission, and thereby provide further justification that the Project is consistent with plans adopted for the reduction or mitigation of GHG emissions, this analysis compares the Project's GHG emissions to the emissions that would have been generated by the Project in the absence of GHG emission reduction Project features and characteristics (the no implementation of emission reduction measures or "NIERM" scenario). This approach mirrors the concepts used in CARB's Climate Change Scoping Plan for achieving the State's GHG emissions reductions goals in Assembly Bill 32 and Senate Bill 32, as codified in Health and Safety Code Division 25.5. This methodology is used to assess the Project's consistency with the applicable GHG reduction plans and policies and to demonstrate the efficacy of the measures contained therein, but it is not used as a threshold of significance.

Evaluating the Project's reduction in GHG emissions against the NIERM scenario requires providing a quantitative estimate of GHG emissions based on the specific circumstances of the Project in the context of relevant State activities and mandates. This requires the following three GHG emissions inventories:

- Baseline, existing environmental setting, GHG emissions;
- NIERM scenario GHG emissions; and
- "As proposed" Project GHG emissions with Project Design Features and Project Characteristics.

The analysis in this section includes potential GHG emissions under the NIERM scenario and from the Project at buildout based on State actions and mandates expected to be in force by the Project's anticipated opening year of 2023 (e.g., Pavley I and II Standards, implementation of California's Statewide Renewables Portfolio Standard beyond current levels of renewable energy, and the California LCFS). Measures identified in the Climate Change Scoping Plan that have not been approved or for which regulations have not yet been adopted were not credited in this analysis (e.g., implementation of Mobile Source Strategy-Cleaner Technology and Fuels). Similarly, emissions reductions related to cap-and-trade were not included in this analysis. By not speculating on potential regulatory conditions, the analysis takes a conservative approach that likely overestimates the Project's GHG emissions at buildout.

The NIERM scenario is used to enable a comparison with Project-generated GHG emissions under the "as proposed" scenario. The NIERM scenario does not consider site-specific conditions or Project Design Features. As an example, GHG emissions from water and wastewater due to the energy needed for supply, treatment and distribution under the NIERM scenario do not account for Project Design Feature AQ-PDF-1, which would incorporate features that would reduce Project indoor water usage by a minimum of 40 percent and outdoor water usage by a minimum of 50 percent. Instead, the NIERM scenario considers the Project without water use reduction features. Mobile source emissions under the NIERM scenario were calculated based on the VMT from the Project Transportation Study prepared by The Mobility Group without taking into account trip distance reductions due to the Project Site-specific characteristics, including, pass-by trips, residential and job densities, neighborhood and site walkability and connectivity, and

proximity to public transit and job centers.[15] GHG emissions related to energy use under the NIERM scenario were calculated based on complying with the minimum performance level required under Title 24.

By contrast, the "as proposed" scenario emissions calculations for the Project include credits or reductions for applicable regulatory requirements and for the Project Design Features and Project Characteristics set forth in Section 3 below, such as reductions in energy, solid waste generation, and water demand. In addition, as mobile source GHG emissions are directly dependent on the number of vehicle trips and VMT, a decrease in the number of Project-generated trips and VMT as a result of Project Design Features and land use characteristics would provide a proportional reduction in mobile source GHG emissions.

2.4 Existing Operational Emissions

Existing operational emissions were estimated primarily using CalEEMod using the same methodologies as discussed above for Project operations. For mobile sources, the vehicle trips were provided for the existing uses in the Project's Transportation Impact Study.[16] Using the trip data for the existing uses, CalEEMod was used to estimate the VMT. The EMFAC2017 model was used to obtain the vehicle fleet emission factors for the existing uses in the year of 2017, which represents the baseline year. Mobile source emissions are the product of the estimated VMT and the emission factors.

Other sources of emissions from existing uses include building energy (natural gas combustion and electricity demand), which were calculated using CalEEMod using historical energy data to account for compliance with prior Title 24 building energy standards given the age of the existing buildings. Solid waste and waster demand and wastewater generation emissions were estimated within CalEEMod using a similar methodology as discussed for the Project. Detailed existing operational emissions calculations are provided in **Exhibit B** of this Technical Appendix.

2.5 Comparison of Project Characteristics to Applicable Plans and Policies

The Project's GHG emissions are also evaluated by assessing the Project's consistency with applicable state, regional, and local GHG reduction strategies such as the CARB's Climate Change Scoping Plan, SB 375, and the City's Green New Deal. These plans and policies are intended to reduce GHG emissions in accordance with California's near-term and long-term climate policies and goals.

The State CEQA Guidelines encourage lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. As discussed previously, the City has established goals and actions to reduce the emission of GHGs from both public and private activities in the Green New Deal. While the City does not have a

[15] The Mobility Group, 1045 S Olive Project – Transportation Study, 2019. This document is provided at the end of Appendix G of this Draft EIR.

[16] The Mobility Group, 1045 Olive Project Transportation Study, 2019. Provided in Appendix N of the Project's Draft EIR.

programmatic mitigation plan to tier from, such as a Greenhouse Gas Emissions Reduction Plan as recommended in the relevant amendments to the State CEQA Guidelines, the City has adopted the Green New Deal and LA Green Building Code, which encourage and require applicable projects to implement energy efficiency measures. Thus, if a project is designed in accordance with these policies and regulations, it would result in a less than significant impact, because it would be consistent with the overarching State regulations on GHG reduction codified under Health and Safety Code Division 25.5.

3. Project Characteristics

The Project is an urban "infill" project, as it would replace existing commercial and manufacturing uses on underutilized parcels located in Downtown Los Angeles with a high-density, mixed-use development. The Project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services. The Project's new housing and job growth would be located in a high-quality transit area (HQTA), which the Southern California Association of Governments (SCAG) defines as an area within a half mile of a well-serviced transit stop,[17] and a transit priority area (TPA), which the City defines as an area means an area within one-half mile of a major transit stop that is existing or planned.[18] The Project's Urban location setting and its land use characteristics, as identified by the California Air Pollution Control Officers Association (CAPCOA), of Increased Density, Location Efficiency, Increased Land Use Diversity and Mixed-Uses, Increased Destination Accessibility, Increased Transit Accessibility, Improve Design of Development, and Provide Pedestrian Network Improvements demonstrate that the Project developed at the Project Site would result in reduced vehicle trips, VMT, and associated transportation-related GHG emissions, as well as air pollutant emissions, compared to the statewide and South Coast Air Basin averages for land use development vehicle trips, VMT, and associated emissions. Refer to the CAPCOA guidance on mitigating or reducing emissions from land use development projects, *Quantifying Greenhouse Gas Mitigation Measures*, for further information on VMT reductions from urban land use characteristics.[19]

The Project would be designed to meet the standards for the USGBC LEED standards through the incorporation of green building techniques and other sustainability features such as low albedo color paving and drought-tolerant landscaping. Key Project Design Features that would contribute to energy efficiencies include stormwater retention; use of high efficiency fixtures and appliances, water conservation features; recycling of solid wastes, and not including the use of natural gas fireplaces in the residential units. The Project would also provide bicycle parking and preferred parking for fuel efficient or electric vehicles.

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17 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, 2016, page 8, http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf. Accessed June 2018.

18 City of Los Angeles, Department of City Planning, Zoning Information File ZI NO. 2451 Transit Priority Areas (TPAs)/Exemptions to Aesthetics and Parking within TPAs Pursuant to CEQA, https://files.alston.com/files/docs/ZI%202451-TPA-Aesthetics-and-Parking.pdf. Accessed October 2018.

19 California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, (2010), http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf. Accessed August 2018.

The following Project Design Features (PDFs) would be incorporated into the Project:

AQ-PDF-1: Green Building Features: (refer to Section IV.B, *Air Quality*, of the Project's Draft EIR for additional details). This Project Design Feature requires the Project to incorporate energy and water efficiency designs that achieve the equivalent of the USGBC LEED Gold Certification level for new buildings, which would minimize building energy demand and associated GHG emissions.

GHG-PDF-1: GHG Emission Offsets: The Project will provide or obtain GHG emission offsets as required as described in the Project's Environmental Leadership Development Project certification and related documentation pursuant to the *Jobs and Economic Improvement Through Environmental Leadership Act*. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall commit to entering into one or more contracts to purchase carbon credits from a recognized and reputable carbon registry (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

WS-PDF-1: Water Conservation Features (refer to Section IV.O.2, *Water Supply*, of the Project's Draft EIR for additional details). This Project Design Feature requires the Project implement water conservation features that are in addition to those required by codes and ordinances, which would minimize building water demand and associated GHG emissions.

4. Emissions Summaries

4.1 Project Construction Emissions

The results of the construction GHG emissions calculations are presented in **Table 1,** *Estimated Construction Greenhouse Gas Emissions*.

TABLE 1
ESTIMATED CONSTRUCTION GREENHOUSE GAS EMISSIONS

Emission Source	CO_2e (Metric Tons) [a,b,c]
Construction Year 1	1,212
Construction Year 2	1,629
Construction Year 3	2,564
Construction Year 4	1,425
Total	6,830
Amortized Over 30 Years	228

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Exhibit A of this Technical Report.

[b] CO_2e emissions are calculated using the global warming potential values from the Intergovernmental Panel on Climate Change Fourth Assessment Report.

[c] The analysis conservatively assumes the NIERM construction emissions are the same as the Project, since it is a comparable project of the same size and land uses with similar construction activities. Construction GHG emissions are amortized over 30 years and included in the operational GHG emissions.

Source: ESA, 2019.

Emission Source	CO_2e (Metric Tons) [a,b,c]

4.2 Existing Site Operational Emissions

Existing operational emissions for the Project Site are presented in **Table 2,** *Estimated Existing Project Site GHG Emissions*. Details regarding the calculation of the existing Project Site emissions are provided in **Exhibit B** of this Technical Report.

TABLE 2
ESTIMATED EXISTING PROJECT SITE GREENHOUSE GAS EMISSIONS

Emissions Sources	Project CO_2e (Metric Tons per Year) [a,b]
Existing Operational	
On Road Mobile Sources	330
Area	<1
Energy (Electricity and Natural Gas)	81
Water Conveyance and Wastewater Treatment	30
Solid Waste	5
Existing Total Emissions	**446**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Exhibit A of this Technical Report.
[b] CO_2e emissions are calculated using the global warming potential values from the IPCC AR4. Although the IPCC has released AR5 with updated GWPs, CARB reports the Statewide GHG inventory using the AR4 GWPs, which is consistent with international reporting standards.

SOURCE: ESA, 2019.

4.3 Project Operational Emissions

The Project's maximum annual net GHG emissions resulting from motor vehicles, energy (i.e., electricity, natural gas), water conveyance, and waste sources were calculated based on the expected opening year in 2023. The maximum opening year GHG emissions from operation of the Project are shown in **Table 3**, *Estimated Combined Amortized Construction and Operational NIERM Scenario and Project Scenario Opening Year GHG Emissions*. Details regarding the calculation of the Project operational emissions are provided in **Exhibits C and D** of this Technical Report.

TABLE 3
ESTIMATED COMBINED AMORTIZED CONSTRUCTION AND OPERATIONAL NIERM AND PROJECT SCENARIO OPENING YEAR GHG EMISSIONS

Emissions Sources	Project CO_2e (Metric Tons per Year) [a]		
	Project NIERM Scenario - Without GHG Reduction Characteristics, Features, and Measures [b]	Proposed Project [b]	Percent Reduction
Project Opening Year			
Electricity [c]	1,898	1,875	1%
Natural Gas [c]	582	582	-
Mobile Sources	9,083	5,908	35%
Solid Waste	226	226	-
Water and Wastewater	444	254	43%
Area [d]	206	14	93%
Emergency Generator	19	19	-
CO_2 Sequestration [e]	-	(5)	-
Operational Subtotal	**12,458**	**8,873**	**29%**
Existing Site (see Table IV.F-3)	(446)	(446)	-
Total Net Operational	**12,012**	**8,427**	**30%**
Amortized Construction Emissions	228	228	-
Total Net Emissions	**12,239**	**8,654**	**29%**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Exhibits C and D of this Technical Report.

[b] CO_2e emissions are calculated using the global warming potential values from the Intergovernmental Panel on Climate Change Fourth Assessment Report.

[c] The Project's building energy GHG emissions is intended to reflect a conservative analysis. Emissions from electricity generation only take into account the carbon intensity at buildout year, but does not take into account decreasing carbon intensity required by the State's Renewables Portfolio Standard for future years. It is recognized that the Renewables Portfolio Standard requires utilities, including LADWP, to supply 60 percent renewable energy by 2030 and to plan for 100 percent renewable energy by 2045 (SB 100). Furthermore, the Project would achieve LEED Gold; however, the analysis conservatively does not account for optional points in the LEED energy and atmosphere category for exceeding the Title 24 building energy standards. Should the Project obtain optional points in the LEED energy and atmosphere category, its building energy demand and associated GHG emissions would be reduced below the reported GHG emissions shown in this table.

[d] Area sources include fireplaces and landscaping equipment for the Project NIERM Scenario. Proposed Project Scenario area source emissions do not include fireplace emissions in accordance with AQ-PDF-1.

[e] Carbon sequestration from trees and vegetation is modeled within CalEEMod based on the Project's increase in the net new number of trees that would be planted and the net increase in vegetated landscaping relative to the existing Project Site. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover at the Project Site, which would sequester CO_2 from the growing of these new trees, native plants, shrubs, perennials, and ground-cover.

Source: ESA, 2019.

Exhibit A
Project Construction Emissions

ESA

A-1 Summary of Assumptions

1045 Olive Street Project last update: 6/24/2019
Air Quality and Greenhouse Gas Assessment

Table 1: CalEEMod Land Use Inputs

Land Use	CalEEMod Land Use Type	Units [a]			
Existing Uses to be Demolished/Removed					
Four Commercial Buildings	General Office	35.65	gross ksf	35,651	gross sf
Paved Parking Area	Parking Lot	5.95	gross ksf	5,952	gross sf
Total Existing Uses to be Demolished/Removed				***41,603***	***gross sf***
Project					
High Rise	High-Rise Apartment	794	DU	739,246	sf
Commerical Uses	General Office	12.50	ksf	12,504	sf
Total Floor Area		751.78	ksf	751,777	sf
Open Space					
Publically Accessible Plaza Area	City Park	2.73	ksf	2,728	sf
Common OS (Exterior) for Project Residents	General Office	37.93	ksf	37,927	sf
Common OS (Interior) for Project Residents	General Office	23.03	ksf	23,025	sf
Private Balcony Space for Project Residents	Other Non-asphalt surfaces	39.70	ksf	39,700	sf
Total Open Space		103.38	ksf	103,380	sf
Total Parking	Enclosed Parking with Elevator	891	spaces	426,458	sf
Bicycle Parking	N/A	891	bicyle spaces		
Trees	N/A	130	(with just over 0.2 acres of planting area)		
Lot Area		0.96	acres		

Notes:

a. Square footage values may be rounded up to provide a conservative analysis.

Table 2: Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

								Calculated in EMFAC2017 (outside of CalEEMod)									
CalEEMod Construction Phase	**Start Date**	**End Date**	**No. Work Days**	**Site Prep/ Demo (CY)**	**Truck Capacity (CY)**	**Truck Total One-Way Trips**	**Max Daily One-Way Trips**	**Soil/ Material Export (CY)**	**Soil/ Material Import (CY)**	**Soil/ Material Haul Truck Capacity (CY)**	**Soil/ Material Haul Truck Total One-Way Trips**	**Max Daily One-Way Trips**	**Concrete Mat Volume (CY)**	**Concrete Truck Capacity (CY)**	**Concrete Truck Total One-Way Trips**	**Concrete Truck Daily One-Way Trips**	**Vendor One-Way Trips/Max Day [a]**	**Worker One-Way Trips/Max Day [b]**
Project																		
Demolition	4/1/2019	4/30/2019	26	3,410	10	682	26										6	12
Site Preparation	4/1/2019	4/30/2019	26					520	-	20	52	30						38
Grading/Excavation	4/1/2019	7/31/2019	105					80,000	-	14	11,429	260					6	132
Drainage/Utilities/Trenching	7/1/2019	9/30/2019	79														6	50
Foundations	6/1/2019	12/31/2021	810															350
Continuous Concrete Pour (approx. 1 day during Foundations) (Calculated in EMFAC2017 - outside of CalEEMod)	1 day		1										12,148	10	1,215	1,215		350
Building Construction	7/1/2020	9/30/2022	705														174	738
Paving	5/1/2022	6/30/2022	53															50
Architectural Coating	10/1/2020	9/30/2022	626															62

Notes:

a. Vendor trucks trips for demolition, grading, and drainage/utilities/trenching represent water trucks. Vendor truck trips for building construction are based on CalEEMod defaults.

b. Worker trips provided by Project contractor representative.

Sources: 1045 Olive, LLC 2017. ODA Architecture, LLC 2017.

Table 3: Off-Road Heavy-Duty Construction Equipment

ıction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	Max Expected Hours of Operation/Day Per Equipment	Max Expected Hours of Operation/Week Per Equipment	Emissions Tier Rating
Demolition	Air Compressor	1	10	60	
	Concrete/Industrial Saws	1	10	60	Tier 4 Final
	Jackhammers	1	10	60	
	Loaders	1	10	60	Tier 4 Final
	Sweeper/Scrubbers	1	6	36	
Site Preparation	Concrete/Industrial Saws	1	10	60	Tier 4 Final
	Excavator	1	10	60	Tier 4 Final
Grading/Excavation	Backhoes	1	10	60	Tier 4 Final
	Bore/Drill Rigs	1	10	60	Tier 4 Final
	Excavators	2	10	60	Tier 4 Final
	Loaders	1	10	60	Tier 4 Final
	Sweeper/Scrubbers	1	6	36	
Drainage/Utilities/Trenching	Backhoes	1	10	60	Tier 4 Final
	Sweeper/Srubbers	1	10	60	
Foundations	Backhoes	1	10	60	Tier 4 Final
	Cranes (Electric)	1	6	36	
	Forklifts	1	10	60	Tier 4 Final
	Sweeper/Scrubbers	1	6	36	Tier 4 Final
Building Construction	Cranes (Electric)	2	6	36	
	Forklifts	2	10	60	Tier 4 Final
	Sweeper/Scrubbers	1	6	36	
Paving	Backhoes	1	10	60	Tier 4 Final
	Signal Boards	1	10	60	
	Paver	1	10	60	Tier 4 Final
Architectural Coating	Air Compressor	1	10	60	
	Forklifts	1	10	60	Tier 4 Final

Sources: 1045 Olive, LLC 2017. ODA Architecture, LLC 2017.

Construction Assumptions - Demolition

Description: Surface parking and two-story multi-family structure

Demolition Schedule				**Notes**
Start Date	4/1/2019			
End Date	4/30/2019			
Work Days	26			

Demolition Quantities				**Notes**
Land Use	**Amount**	***Units***		
Residential Building	35.7	*KSF*		Estimate from Google Earth, two story multi-family
Hardscape Demo	6.0	*KSF*		Information from Client

Hardscape Demolition Volume				**Notes**
Total Area(KSF)	6.0			
Thickness (ft)	0.5	*feet*		
Debris Volume (CY)	110	*(rounded, estimated)*		

Building Demolition Volume				**Notes**
Total Area (KSF)	35.7			
Floor Height (ft)	10			Assumed
Building Volume (ft3)	356,510			
Building Volume (CY)	13,200			
Debris Volume (CY)	3,300	*(rounded, estimated)*		Rounded, 1 CY building volume = 0.25 CY waste volume

Total Debris (CY)	3,410			
Effective Building Floor Area (KSF)	**37.0**		<-------	**ENTER VALUE INTO CALEEMOD**
Truck Size (CY)	10			
Total Trucks	340	*total trucks*		
Daily Trucks	10	*trucks/day*		
Total One-Way Trips	**680**	*total trips*	<-------	**ENTER VALUE INTO CALEEMOD**

A-2 CalEEMod Output Files

1045 Olive Street Project - Construction

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Construction Phase - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

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Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Trips and VMT - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" provided in this Appendix. Soil/material haul trucks, vendor trucks and concrete pour trucks (1-day) calculated outside CalEEMod using EMFAC.

Demolition - Demo Debris: 3,410 cy (estimated equivalent to 37,000 sf building floor area)

Grading - Site Prep: 520 cy export; Grading: 80,000 cy export.

Construction Off-road Equipment Mitigation - Electric cranes and air compressors; Tier 4 equipment (>50 hp); Water/Stablizers on exposed and unpaved areas (61% PM control); Limit vehicle speeds to 15 mph on unpaved roads.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	499,009.00	498,991.00
tblArchitecturalCoating	ConstArea_Residential_Interior	1,497,028.00	1,496,973.00
tblAreaCoating	Area_Residential_Exterior	499009	498991
tblAreaCoating	Area_Residential_Interior	1497028	1496973
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	CNG
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	626.00
tblConstructionPhase	NumDays	100.00	810.00
tblConstructionPhase	NumDays	100.00	705.00
tblConstructionPhase	NumDays	10.00	26.00
tblConstructionPhase	NumDays	2.00	105.00
tblConstructionPhase	NumDays	5.00	52.00
tblConstructionPhase	NumDays	1.00	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	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	0.96
tblGrading	AcresOfGrading	0.00	0.96
tblGrading	MaterialExported	0.00	80,000.00
tblGrading	MaterialExported	0.00	520.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00

tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	8.02	0.10
tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00

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tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblTripsAndVMT	HaulingTripNumber	168.00	0.00
tblTripsAndVMT	HaulingTripNumber	65.00	0.00
tblTripsAndVMT	HaulingTripNumber	10,000.00	0.00
tblTripsAndVMT	VendorTripNumber	174.00	0.00
tblTripsAndVMT	VendorTripNumber	174.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	38.00
tblTripsAndVMT	WorkerTripNumber	15.00	132.00
tblTripsAndVMT	WorkerTripNumber	793.00	350.00
tblTripsAndVMT	WorkerTripNumber	5.00	50.00
tblTripsAndVMT	WorkerTripNumber	793.00	738.00
tblTripsAndVMT	WorkerTripNumber	159.00	62.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4589	2.6851	4.0093	8.4600e-003	0.4794	0.1525	0.6319	0.1246	0.1411	0.2657	0.0000	760.8418	760.8418	0.1116	0.0000	763.6325
2020	1.1529	3.2153	6.7051	0.0164	1.2679	0.1727	1.4405	0.3367	0.1595	0.4962	0.0000	1,470.8670	1,470.8670	0.1266	0.0000	1,474.0326
2021	2.5274	4.4852	9.7922	0.0249	1.9722	0.2330	2.2052	0.5238	0.2163	0.7402	0.0000	2,235.7949	2,235.7949	0.1829	0.0000	2,240.3669
2022	1.5850	2.0515	4.8430	0.0128	1.0399	0.1026	1.1425	0.2762	0.0957	0.3719	0.0000	1,146.5287	1,146.5287	0.0897	0.0000	1,148.7715
Maximum	**2.5274**	**4.4852**	**9.7922**	**0.0249**	**1.9722**	**0.2330**	**2.2052**	**0.5238**	**0.2163**	**0.7402**	**0.0000**	**2,235.7949**	**2,235.7949**	**0.1829**	**0.0000**	**2,240.3669**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2890	0.7310	4.0680	8.4600e-003	0.4649	0.0420	0.5069	0.1224	0.0390	0.1614	0.0000	719.7484	719.7484	0.0999	0.0000	722.2461
2020	0.9407	0.9111	6.0887	0.0164	1.2679	0.0460	1.3139	0.3367	0.0425	0.3793	0.0000	1,334.2967	1,334.2967	0.0866	0.0000	1,336.4615
2021	2.2093	1.1819	8.6310	0.0249	1.9722	0.0547	2.0269	0.5238	0.0506	0.5744	0.0000	1,990.7124	1,990.7124	0.1206	0.0000	1,993.7271
2022	1.4292	0.5063	4.1862	0.0128	1.0399	0.0209	1.0608	0.2762	0.0194	0.2956	0.0000	1,007.7682	1,007.7682	0.0577	0.0000	1,009.2106
Maximum	**2.2093**	**1.1819**	**8.6310**	**0.0249**	**1.9722**	**0.0547**	**2.0269**	**0.5238**	**0.0506**	**0.5744**	**0.0000**	**1,990.7124**	**1,990.7124**	**0.1206**	**0.0000**	**1,993.7271**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	14.96	73.22	9.37	0.00	0.30	75.24	9.44	0.17	75.27	24.72	0.00	10.00	10.00	28.59	0.00	10.04

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2019	6-30-2019	1.3479	0.3308
2	7-1-2019	9-30-2019	1.1706	0.4506
3	10-1-2019	12-31-2019	0.6117	0.2292
4	1-1-2020	3-31-2020	0.5493	0.2100
5	4-1-2020	6-30-2020	0.5376	0.1982
6	7-1-2020	9-30-2020	1.3372	0.5163
7	10-1-2020	12-31-2020	1.9354	0.9219
8	1-1-2021	3-31-2021	1.7451	0.8525
9	4-1-2021	6-30-2021	1.7287	0.8263
10	7-1-2021	9-30-2021	1.7477	0.8353
11	10-1-2021	12-31-2021	1.7838	0.8715
12	1-1-2022	3-31-2022	1.1582	0.6363
13	4-1-2022	6-30-2022	1.3056	0.6591
14	7-1-2022	9-30-2022	1.1603	0.6269
		Highest	1.9354	0.9219

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	4/1/2019	4/30/2019	6	26	
2	Site Preparation	Site Preparation	4/1/2019	4/30/2019	6	26	
3	Grading	Grading	4/1/2019	7/31/2019	6	105	
4	Foundations/Concrete Pour	Building Construction	6/1/2019	12/31/2021	6	810	
5	Drainage/Utilities/Trenching	Trenching	7/1/2019	9/30/2019	6	79	
6	Building Construction	Building Construction	7/1/2020	9/30/2022	6	705	
7	Architectural Coating	Architectural Coating	10/1/2020	9/30/2022	6	626	
8	Paving	Paving	5/1/2022	6/30/2022	6	52	

Acres of Grading (Site Preparation Phase): 0.96

Acres of Grading (Grading Phase): 0.96

Acres of Paving: 0.2

Residential Indoor: 1,496,973; Residential Outdoor: 498,991; Non-Residential Indoor: 110,184; Non-Residential Outdoor: 36,728; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	10.00	78	0.48
Demolition	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Sweepers/Scrubbers	1	6.00	64	0.46
Demolition	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Site Preparation	Concrete/Industrial Saws	1	10.00	81	0.73
Site Preparation	Excavators	1	10.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Bore/Drill Rigs	1	10.00	221	0.50

Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Excavators	2	10.00	158	0.38
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Sweepers/Scrubbers	1	6.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Foundations/Concrete Pour	Cranes	1	6.00	231	0.29
Foundations/Concrete Pour	Forklifts	1	10.00	89	0.20
Foundations/Concrete Pour	Sweepers/Scrubbers	1	6.00	64	0.46
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	10.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Forklifts	2	10.00	89	0.20
Building Construction	Sweepers/Scrubbers	1	6.00	64	0.46
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	1	10.00	78	0.48
Architectural Coating	Forklifts	1	10.00	89	0.20
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	1	10.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Signal Boards	1	10.00	6	0.82
Paving	Tractors/Loaders/Backhoes	1	10.00	97	0.37

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	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	132.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	4	350.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	2	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	738.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	62.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0182	0.0000	0.0182	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1602	0.1570	2.4000e-004		0.0110	0.0110		0.0107	0.0107	0.0000	21.0285	21.0285	3.2200e-003	0.0000	21.1090
Total	**0.0199**	**0.1602**	**0.1570**	**2.4000e-004**	**0.0182**	**0.0110**	**0.0292**	**2.7600e-003**	**0.0107**	**0.0134**	**0.0000**	**21.0285**	**21.0285**	**3.2200e-003**	**0.0000**	**21.1090**

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	7.8000e-004	6.5000e-004	7.0800e-003	2.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.7000e-004	0.0000	1.6432	1.6432	6.0000e-005	0.0000	1.6447
Total	**7.8000e-004**	**6.5000e-004**	**7.0800e-003**	**2.0000e-005**	**1.7100e-003**	**2.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.6432**	**1.6432**	**6.0000e-005**	**0.0000**	**1.6447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.1000e-003	0.0000	7.1000e-003	1.0800e-003	0.0000	1.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4200e-003	0.0312	0.1202	2.4000e-004		2.1800e-003	2.1800e-003		2.0200e-003	2.0200e-003	0.0000	15.4965	15.4965	2.7500e-003	0.0000	15.5653
Total	**4.4200e-003**	**0.0312**	**0.1202**	**2.4000e-004**	**7.1000e-003**	**2.1800e-003**	**9.2800e-003**	**1.0800e-003**	**2.0200e-003**	**3.1000e-003**	**0.0000**	**15.4965**	**15.4965**	**2.7500e-003**	**0.0000**	**15.5653**

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	7.8000e-004	6.5000e-004	7.0800e-003	2.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.7000e-004	0.0000	1.6432	1.6432	6.0000e-005	0.0000	1.6447
Total	**7.8000e-004**	**6.5000e-004**	**7.0800e-003**	**2.0000e-005**	**1.7100e-003**	**2.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.6432**	**1.6432**	**6.0000e-005**	**0.0000**	**1.6447**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4000e-004	0.0000	5.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1019	0.1132	1.9000e-004		5.8300e-003	5.8300e-003		5.6600e-003	5.6600e-003	0.0000	16.2718	16.2718	3.0000e-003	0.0000	16.3468
Total	**0.0117**	**0.1019**	**0.1132**	**1.9000e-004**	**5.4000e-004**	**5.8300e-003**	**6.3700e-003**	**6.0000e-005**	**5.6600e-003**	**5.7200e-003**	**0.0000**	**16.2718**	**16.2718**	**3.0000e-003**	**0.0000**	**16.3468**

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	2.4700e-003	2.0600e-003	0.0224	6.0000e-005	5.4100e-003	5.0000e-005	5.4600e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2036	5.2036	1.8000e-004	0.0000	5.2081
Total	**2.4700e-003**	**2.0600e-003**	**0.0224**	**6.0000e-005**	**5.4100e-003**	**5.0000e-005**	**5.4600e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2036**	**5.2036**	**1.8000e-004**	**0.0000**	**5.2081**

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					2.1000e-004	0.0000	2.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	8.8800e-003	0.1264	1.9000e-004		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	16.2718	16.2718	3.0000e-003	0.0000	16.3468
Total	**2.0500e-003**	**8.8800e-003**	**0.1264**	**1.9000e-004**	**2.1000e-004**	**2.7000e-004**	**4.8000e-004**	**2.0000e-005**	**2.7000e-004**	**2.9000e-004**	**0.0000**	**16.2718**	**16.2718**	**3.0000e-003**	**0.0000**	**16.3468**

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	2.4700e-003	2.0600e-003	0.0224	6.0000e-005	5.4100e-003	5.0000e-005	5.4600e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2036	5.2036	1.8000e-004	0.0000	5.2081
Total	**2.4700e-003**	**2.0600e-003**	**0.0224**	**6.0000e-005**	**5.4100e-003**	**5.0000e-005**	**5.4600e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2036**	**5.2036**	**1.8000e-004**	**0.0000**	**5.2081**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0300e-003	0.0000	5.0300e-003	7.4000e-004	0.0000	7.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0944	0.9986	0.9448	1.8000e-003		0.0522	0.0522		0.0481	0.0481	0.0000	161.6695	161.6695	0.0512	0.0000	162.9483
Total	**0.0944**	**0.9986**	**0.9448**	**1.8000e-003**	**5.0300e-003**	**0.0522**	**0.0573**	**7.4000e-004**	**0.0481**	**0.0488**	**0.0000**	**161.6695**	**161.6695**	**0.0512**	**0.0000**	**162.9483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0347	0.0289	0.3146	8.1000e-004	0.0759	6.7000e-004	0.0766	0.0202	6.2000e-004	0.0208	0.0000	72.9977	72.9977	2.5100e-003	0.0000	73.0604
Total	**0.0347**	**0.0289**	**0.3146**	**8.1000e-004**	**0.0759**	**6.7000e-004**	**0.0766**	**0.0202**	**6.2000e-004**	**0.0208**	**0.0000**	**72.9977**	**72.9977**	**2.5100e-003**	**0.0000**	**73.0604**

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					1.9600e-003	0.0000	1.9600e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0322	0.1886	1.1816	1.8000e-003		0.0107	0.0107		0.0101	0.0101	0.0000	161.6693	161.6693	0.0512	0.0000	162.9481
Total	**0.0322**	**0.1886**	**1.1816**	**1.8000e-003**	**1.9600e-003**	**0.0107**	**0.0127**	**2.9000e-004**	**0.0101**	**0.0104**	**0.0000**	**161.6693**	**161.6693**	**0.0512**	**0.0000**	**162.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0347	0.0289	0.3146	8.1000e-004	0.0759	6.7000e-004	0.0766	0.0202	6.2000e-004	0.0208	0.0000	72.9977	72.9977	2.5100e-003	0.0000	73.0604
Total	**0.0347**	**0.0289**	**0.3146**	**8.1000e-004**	**0.0759**	**6.7000e-004**	**0.0766**	**0.0202**	**6.2000e-004**	**0.0208**	**0.0000**	**72.9977**	**72.9977**	**2.5100e-003**	**0.0000**	**73.0604**

3.5 Foundations/Concrete Pour - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0991	1.0130	0.6944	1.1000e-003		0.0618	0.0618		0.0568	0.0568	0.0000	98.8387	98.8387	0.0313	0.0000	99.6205
Total	**0.0991**	**1.0130**	**0.6944**	**1.1000e-003**		**0.0618**	**0.0618**		**0.0568**	**0.0568**	**0.0000**	**98.8387**	**98.8387**	**0.0313**	**0.0000**	**99.6205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1604	0.1337	1.4539	3.7400e-003	0.3509	3.0900e-003	0.3540	0.0932	2.8400e-003	0.0961	0.0000	337.3377	337.3377	0.0116	0.0000	337.6277
Total	**0.1604**	**0.1337**	**1.4539**	**3.7400e-003**	**0.3509**	**3.0900e-003**	**0.3540**	**0.0932**	**2.8400e-003**	**0.0961**	**0.0000**	**337.3377**	**337.3377**	**0.0116**	**0.0000**	**337.6277**

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	0.0261	0.1982	0.5378	1.1000e-003		0.0147	0.0147		0.0136	0.0136	0.0000	63.2776	63.2776	0.0200	0.0000	63.7781
Total	**0.0261**	**0.1982**	**0.5378**	**1.1000e-003**		**0.0147**	**0.0147**		**0.0136**	**0.0136**	**0.0000**	**63.2776**	**63.2776**	**0.0200**	**0.0000**	**63.7781**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1604	0.1337	1.4539	3.7400e-003	0.3509	3.0900e-003	0.3540	0.0932	2.8400e-003	0.0961	0.0000	337.3377	337.3377	0.0116	0.0000	337.6277
Total	**0.1604**	**0.1337**	**1.4539**	**3.7400e-003**	**0.3509**	**3.0900e-003**	**0.3540**	**0.0932**	**2.8400e-003**	**0.0961**	**0.0000**	**337.3377**	**337.3377**	**0.0116**	**0.0000**	**337.6277**

3.5 Foundations/Concrete Pour - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1546	1.5767	1.1621	1.8900e-003		0.0933	0.0933		0.0858	0.0858	0.0000	165.8893	165.8893	0.0537	0.0000	167.2306
Total	**0.1546**	**1.5767**	**1.1621**	**1.8900e-003**		**0.0933**	**0.0933**		**0.0858**	**0.0858**	**0.0000**	**165.8893**	**165.8893**	**0.0537**	**0.0000**	**167.2306**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2537	0.2045	2.2619	6.2100e-003	0.6021	5.1300e-003	0.6073	0.1599	4.7300e-003	0.1647	0.0000	561.2321	561.2321	0.0177	0.0000	561.6743
Total	**0.2537**	**0.2045**	**2.2619**	**6.2100e-003**	**0.6021**	**5.1300e-003**	**0.6073**	**0.1599**	**4.7300e-003**	**0.1647**	**0.0000**	**561.2321**	**561.2321**	**0.0177**	**0.0000**	**561.6743**

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	0.0429	0.3224	0.9216	1.8900e-003		0.0235	0.0235		0.0217	0.0217	0.0000	106.1987	106.1987	0.0344	0.0000	107.0574
Total	**0.0429**	**0.3224**	**0.9216**	**1.8900e-003**		**0.0235**	**0.0235**		**0.0217**	**0.0217**	**0.0000**	**106.1987**	**106.1987**	**0.0344**	**0.0000**	**107.0574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2537	0.2045	2.2619	6.2100e-003	0.6021	5.1300e-003	0.6073	0.1599	4.7300e-003	0.1647	0.0000	561.2321	561.2321	0.0177	0.0000	561.6743
Total	**0.2537**	**0.2045**	**2.2619**	**6.2100e-003**	**0.6021**	**5.1300e-003**	**0.6073**	**0.1599**	**4.7300e-003**	**0.1647**	**0.0000**	**561.2321**	**561.2321**	**0.0177**	**0.0000**	**561.6743**

3.5 Foundations/Concrete Pour - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1372	1.4122	1.1324	1.8800e-003		0.0791	0.0791		0.0728	0.0728	0.0000	165.3789	165.3789	0.0535	0.0000	166.7161
Total	**0.1372**	**1.4122**	**1.1324**	**1.8800e-003**		**0.0791**	**0.0791**		**0.0728**	**0.0728**	**0.0000**	**165.3789**	**165.3789**	**0.0535**	**0.0000**	**166.7161**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2357	0.1835	2.0714	5.9900e-003	0.6002	4.9500e-003	0.6052	0.1594	4.5600e-003	0.1640	0.0000	541.6793	541.6793	0.0159	0.0000	542.0778
Total	**0.2357**	**0.1835**	**2.0714**	**5.9900e-003**	**0.6002**	**4.9500e-003**	**0.6052**	**0.1594**	**4.5600e-003**	**0.1640**	**0.0000**	**541.6793**	**541.6793**	**0.0159**	**0.0000**	**542.0778**

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	0.0379	0.2896	0.9144	1.8800e-003		0.0192	0.0192		0.0178	0.0178	0.0000	105.8838	105.8838	0.0342	0.0000	106.7399
Total	**0.0379**	**0.2896**	**0.9144**	**1.8800e-003**		**0.0192**	**0.0192**		**0.0178**	**0.0178**	**0.0000**	**105.8838**	**105.8838**	**0.0342**	**0.0000**	**106.7399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2357	0.1835	2.0714	5.9900e-003	0.6002	4.9500e-003	0.6052	0.1594	4.5600e-003	0.1640	0.0000	541.6793	541.6793	0.0159	0.0000	542.0778
Total	**0.2357**	**0.1835**	**2.0714**	**5.9900e-003**	**0.6002**	**4.9500e-003**	**0.6052**	**0.1594**	**4.5600e-003**	**0.1640**	**0.0000**	**541.6793**	**541.6793**	**0.0159**	**0.0000**	**542.0778**

3.6 Drainage/Utilities/Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2378	0.2123	2.8000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	25.0473	25.0473	7.9200e-003	0.0000	25.2454
Total	**0.0256**	**0.2378**	**0.2123**	**2.8000e-004**		**0.0176**	**0.0176**		**0.0162**	**0.0162**	**0.0000**	**25.0473**	**25.0473**	**7.9200e-003**	**0.0000**	**25.2454**

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	9.8900e-003	8.2500e-003	0.0897	2.3000e-004	0.0216	1.9000e-004	0.0218	5.7500e-003	1.8000e-004	5.9200e-003	0.0000	20.8038	20.8038	7.2000e-004	0.0000	20.8217
Total	**9.8900e-003**	**8.2500e-003**	**0.0897**	**2.3000e-004**	**0.0216**	**1.9000e-004**	**0.0218**	**5.7500e-003**	**1.8000e-004**	**5.9200e-003**	**0.0000**	**20.8038**	**20.8038**	**7.2000e-004**	**0.0000**	**20.8217**

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	0.0160	0.1305	0.2142	2.8000e-004		0.0102	0.0102		9.3800e-003	9.3800e-003	0.0000	25.0473	25.0473	7.9200e-003	0.0000	25.2454
Total	**0.0160**	**0.1305**	**0.2142**	**2.8000e-004**		**0.0102**	**0.0102**		**9.3800e-003**	**9.3800e-003**	**0.0000**	**25.0473**	**25.0473**	**7.9200e-003**	**0.0000**	**25.2454**

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	9.8900e-003	8.2500e-003	0.0897	2.3000e-004	0.0216	1.9000e-004	0.0218	5.7500e-003	1.8000e-004	5.9200e-003	0.0000	20.8038	20.8038	7.2000e-004	0.0000	20.8217
Total	**9.8900e-003**	**8.2500e-003**	**0.0897**	**2.3000e-004**	**0.0216**	**1.9000e-004**	**0.0218**	**5.7500e-003**	**1.8000e-004**	**5.9200e-003**	**0.0000**	**20.8038**	**20.8038**	**7.2000e-004**	**0.0000**	**20.8217**

3.7 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0982	1.0330	0.6015	1.1400e-003		0.0565	0.0565		0.0520	0.0520	0.0000	99.8254	99.8254	0.0323	0.0000	100.6325
Total	**0.0982**	**1.0330**	**0.6015**	**1.1400e-003**		**0.0565**	**0.0565**		**0.0520**	**0.0520**	**0.0000**	**99.8254**	**99.8254**	**0.0323**	**0.0000**	**100.6325**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2691	0.2170	2.3999	6.5900e-003	0.6389	5.4500e-003	0.6443	0.1697	5.0200e-003	0.1747	0.0000	595.4678	595.4678	0.0188	0.0000	595.9369
Total	**0.2691**	**0.2170**	**2.3999**	**6.5900e-003**	**0.6389**	**5.4500e-003**	**0.6443**	**0.1697**	**5.0200e-003**	**0.1747**	**0.0000**	**595.4678**	**595.4678**	**0.0188**	**0.0000**	**595.9369**

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	0.0197	0.1540	0.3472	1.1400e-003		0.0116	0.0116		0.0107	0.0107	0.0000	39.7546	39.7546	0.0129	0.0000	40.0761
Total	**0.0197**	**0.1540**	**0.3472**	**1.1400e-003**		**0.0116**	**0.0116**		**0.0107**	**0.0107**	**0.0000**	**39.7546**	**39.7546**	**0.0129**	**0.0000**	**40.0761**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2691	0.2170	2.3999	6.5900e-003	0.6389	5.4500e-003	0.6443	0.1697	5.0200e-003	0.1747	0.0000	595.4678	595.4678	0.0188	0.0000	595.9369
Total	**0.2691**	**0.2170**	**2.3999**	**6.5900e-003**	**0.6389**	**5.4500e-003**	**0.6443**	**0.1697**	**5.0200e-003**	**0.1747**	**0.0000**	**595.4678**	**595.4678**	**0.0188**	**0.0000**	**595.9369**

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1744	1.8412	1.1514	2.2500e-003		0.0967	0.0967		0.0890	0.0890	0.0000	197.7445	197.7445	0.0640	0.0000	199.3433
Total	**0.1744**	**1.8412**	**1.1514**	**2.2500e-003**		**0.0967**	**0.0967**		**0.0890**	**0.0890**	**0.0000**	**197.7445**	**197.7445**	**0.0640**	**0.0000**	**199.3433**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4970	0.3869	4.3676	0.0126	1.2656	0.0104	1.2761	0.3362	9.6100e-003	0.3458	0.0000	1,142.1695	1,142.1695	0.0336	0.0000	1,143.0098
Total	**0.4970**	**0.3869**	**4.3676**	**0.0126**	**1.2656**	**0.0104**	**1.2761**	**0.3362**	**9.6100e-003**	**0.3458**	**0.0000**	**1,142.1695**	**1,142.1695**	**0.0336**	**0.0000**	**1,143.0098**

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	0.0342	0.2734	0.6835	2.2500e-003		0.0187	0.0187		0.0173	0.0173	0.0000	78.7544	78.7544	0.0255	0.0000	79.3912
Total	**0.0342**	**0.2734**	**0.6835**	**2.2500e-003**		**0.0187**	**0.0187**		**0.0173**	**0.0173**	**0.0000**	**78.7544**	**78.7544**	**0.0255**	**0.0000**	**79.3912**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4970	0.3869	4.3676	0.0126	1.2656	0.0104	1.2761	0.3362	9.6100e-003	0.3458	0.0000	1,142.1695	1,142.1695	0.0336	0.0000	1,143.0098
Total	**0.4970**	**0.3869**	**4.3676**	**0.0126**	**1.2656**	**0.0104**	**1.2761**	**0.3362**	**9.6100e-003**	**0.3458**	**0.0000**	**1,142.1695**	**1,142.1695**	**0.0336**	**0.0000**	**1,143.0098**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1157	1.2011	0.8378	1.6800e-003		0.0615	0.0615		0.0566	0.0566	0.0000	147.8491	147.8491	0.0478	0.0000	149.0445
Total	**0.1157**	**1.2011**	**0.8378**	**1.6800e-003**		**0.0615**	**0.0615**		**0.0566**	**0.0566**	**0.0000**	**147.8491**	**147.8491**	**0.0478**	**0.0000**	**149.0445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3484	0.2613	3.0086	9.1100e-003	0.9462	7.5600e-003	0.9537	0.2513	6.9600e-003	0.2583	0.0000	823.8745	823.8745	0.0227	0.0000	824.4417
Total	**0.3484**	**0.2613**	**3.0086**	**9.1100e-003**	**0.9462**	**7.5600e-003**	**0.9537**	**0.2513**	**6.9600e-003**	**0.2583**	**0.0000**	**823.8745**	**823.8745**	**0.0227**	**0.0000**	**824.4417**

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	0.0225	0.1821	0.5080	1.6800e-003		0.0113	0.0113		0.0105	0.0105	0.0000	58.8771	58.8771	0.0190	0.0000	59.3532
Total	**0.0225**	**0.1821**	**0.5080**	**1.6800e-003**		**0.0113**	**0.0113**		**0.0105**	**0.0105**	**0.0000**	**58.8771**	**58.8771**	**0.0190**	**0.0000**	**59.3532**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3484	0.2613	3.0086	9.1100e-003	0.9462	7.5600e-003	0.9537	0.2513	6.9600e-003	0.2583	0.0000	823.8745	823.8745	0.0227	0.0000	824.4417
Total	**0.3484**	**0.2613**	**3.0086**	**9.1100e-003**	**0.9462**	**7.5600e-003**	**0.9537**	**0.2513**	**6.9600e-003**	**0.2583**	**0.0000**	**823.8745**	**823.8745**	**0.0227**	**0.0000**	**824.4417**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0231	0.1749	0.1788	2.7000e-004		0.0121	0.0121		0.0117	0.0117	0.0000	23.4396	23.4396	3.4500e-003	0.0000	23.5257
Total	**0.3661**	**0.1749**	**0.1788**	**2.7000e-004**		**0.0121**	**0.0121**		**0.0117**	**0.0117**	**0.0000**	**23.4396**	**23.4396**	**3.4500e-003**	**0.0000**	**23.5257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	9.1200e-003	0.1008	2.8000e-004	0.0268	2.3000e-004	0.0271	7.1300e-003	2.1000e-004	7.3400e-003	0.0000	25.0129	25.0129	7.9000e-004	0.0000	25.0326
Total	**0.0113**	**9.1200e-003**	**0.1008**	**2.8000e-004**	**0.0268**	**2.3000e-004**	**0.0271**	**7.1300e-003**	**2.1000e-004**	**7.3400e-003**	**0.0000**	**25.0129**	**25.0129**	**7.9000e-004**	**0.0000**	**25.0326**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	4.0300e-003	0.0574	2.7000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	6.6306	6.6306	2.1400e-003	0.0000	6.6842
Total	**0.3440**	**4.0300e-003**	**0.0574**	**2.7000e-004**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**6.6306**	**6.6306**	**2.1400e-003**	**0.0000**	**6.6842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	9.1200e-003	0.1008	2.8000e-004	0.0268	2.3000e-004	0.0271	7.1300e-003	2.1000e-004	7.3400e-003	0.0000	25.0129	25.0129	7.9000e-004	0.0000	25.0326
Total	**0.0113**	**9.1200e-003**	**0.1008**	**2.8000e-004**	**0.0268**	**2.3000e-004**	**0.0271**	**7.1300e-003**	**2.1000e-004**	**7.3400e-003**	**0.0000**	**25.0129**	**25.0129**	**7.9000e-004**	**0.0000**	**25.0326**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0824	0.6289	0.7025	1.0700e-003		0.0409	0.0409		0.0396	0.0396	0.0000	92.8681	92.8681	0.0131	0.0000	93.1948
Total	**1.4415**	**0.6289**	**0.7025**	**1.0700e-003**		**0.0409**	**0.0409**		**0.0396**	**0.0396**	**0.0000**	**92.8681**	**92.8681**	**0.0131**	**0.0000**	**93.1948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0325	0.3669	1.0600e-003	0.1063	8.8000e-004	0.1072	0.0282	8.1000e-004	0.0291	0.0000	95.9546	95.9546	2.8200e-003	0.0000	96.0252
Total	**0.0418**	**0.0325**	**0.3669**	**1.0600e-003**	**0.1063**	**8.8000e-004**	**0.1072**	**0.0282**	**8.1000e-004**	**0.0291**	**0.0000**	**95.9546**	**95.9546**	**2.8200e-003**	**0.0000**	**96.0252**

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	1.3591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0160	0.2272	1.0700e-003		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	26.2707	26.2707	8.5000e-003	0.0000	26.4831
Total	**1.3627**	**0.0160**	**0.2272**	**1.0700e-003**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**26.2707**	**26.2707**	**8.5000e-003**	**0.0000**	**26.4831**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0325	0.3669	1.0600e-003	0.1063	8.8000e-004	0.1072	0.0282	8.1000e-004	0.0291	0.0000	95.9546	95.9546	2.8200e-003	0.0000	96.0252
Total	**0.0418**	**0.0325**	**0.3669**	**1.0600e-003**	**0.1063**	**8.8000e-004**	**0.1072**	**0.0282**	**8.1000e-004**	**0.0291**	**0.0000**	**95.9546**	**95.9546**	**2.8200e-003**	**0.0000**	**96.0252**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0565	0.4289	0.5224	8.0000e-004		0.0262	0.0262		0.0253	0.0253	0.0000	69.4286	69.4286	9.5900e-003	0.0000	69.6684
Total	**1.0725**	**0.4289**	**0.5224**	**8.0000e-004**		**0.0262**	**0.0262**		**0.0253**	**0.0253**	**0.0000**	**69.4286**	**69.4286**	**9.5900e-003**	**0.0000**	**69.6684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0293	0.0220	0.2528	7.7000e-004	0.0795	6.3000e-004	0.0801	0.0211	5.8000e-004	0.0217	0.0000	69.2144	69.2144	1.9100e-003	0.0000	69.2620
Total	**0.0293**	**0.0220**	**0.2528**	**7.7000e-004**	**0.0795**	**6.3000e-004**	**0.0801**	**0.0211**	**5.8000e-004**	**0.0217**	**0.0000**	**69.2144**	**69.2144**	**1.9100e-003**	**0.0000**	**69.2620**

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	1.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7500e-003	0.0119	0.1699	8.0000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	19.6401	19.6401	6.3500e-003	0.0000	19.7989
Total	**1.0188**	**0.0119**	**0.1699**	**8.0000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**19.6401**	**19.6401**	**6.3500e-003**	**0.0000**	**19.7989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0293	0.0220	0.2528	7.7000e-004	0.0795	6.3000e-004	0.0801	0.0211	5.8000e-004	0.0217	0.0000	69.2144	69.2144	1.9100e-003	0.0000	69.2620
Total	**0.0293**	**0.0220**	**0.2528**	**7.7000e-004**	**0.0795**	**6.3000e-004**	**0.0801**	**0.0211**	**5.8000e-004**	**0.0217**	**0.0000**	**69.2144**	**69.2144**	**1.9100e-003**	**0.0000**	**69.2620**

3.9 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0139	0.1344	0.1762	2.8000e-004		6.6200e-003	6.6200e-003		6.1300e-003	6.1300e-003	0.0000	23.7581	23.7581	7.3600e-003	0.0000	23.9422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0139**	**0.1344**	**0.1762**	**2.8000e-004**		**6.6200e-003**	**6.6200e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**23.7581**	**23.7581**	**7.3600e-003**	**0.0000**	**23.9422**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2500e-003	3.9300e-003	0.0453	1.4000e-004	0.0143	1.1000e-004	0.0144	3.7800e-003	1.0000e-004	3.8900e-003	0.0000	12.4040	12.4040	3.4000e-004	0.0000	12.4126
Total	**5.2500e-003**	**3.9300e-003**	**0.0453**	**1.4000e-004**	**0.0143**	**1.1000e-004**	**0.0144**	**3.7800e-003**	**1.0000e-004**	**3.8900e-003**	**0.0000**	**12.4040**	**12.4040**	**3.4000e-004**	**0.0000**	**12.4126**

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	4.9800e-003	0.0252	0.2017	2.8000e-004		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	23.7581	23.7581	7.3600e-003	0.0000	23.9422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9800e-003**	**0.0252**	**0.2017**	**2.8000e-004**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**23.7581**	**23.7581**	**7.3600e-003**	**0.0000**	**23.9422**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2500e-003	3.9300e-003	0.0453	1.4000e-004	0.0143	1.1000e-004	0.0144	3.7800e-003	1.0000e-004	3.8900e-003	0.0000	12.4040	12.4040	3.4000e-004	0.0000	12.4126
Total	**5.2500e-003**	**3.9300e-003**	**0.0453**	**1.4000e-004**	**0.0143**	**1.1000e-004**	**0.0144**	**3.7800e-003**	**1.0000e-004**	**3.8900e-003**	**0.0000**	**12.4040**	**12.4040**	**3.4000e-004**	**0.0000**	**12.4126**

A-3 EMFAC2017 On-Road Truck Emissions

1045 Olive Street Project
On-Road Soil/Material Haul Truck Regional Emissions - Unmitigated

Construction Phase	Start Date	End Date	No. Work Days	Soil/ Material Export (CY) [a]	Soil/ Material Import (CY) [b]	Soil/ Material Haul Truck Capacity (CY)	Soil/ Material Haul Truck Total One-Way Trips	Soil/ Material Haul Truck Daily One-Way Trips	Vendor One-Way Trips/Max Day	Haul or Vendor Days per Phase	One-Way Trip Distance (miles)
Demolition-Haul	4/1/2019	4/30/2019	26	3,410		10	682	30		26	20.0
Demolition-Vendor	4/1/2019	4/30/2019	26						6	26	6.9
Site Preparation	4/1/2019	4/30/2019	26	520	-	20	52	30		2	23.6
Grading/Excavation-Haul	4/1/2019	7/31/2019	105	80,000	-	14	11,429	260		44	21.0
Grading/Excavation-Vendor	4/1/2019	7/31/2019	105						6	105	6.9
Concrete Pour (1-day) [c]	7/1/2019	7/1/2019	1	-	12,148	10	1,215	1,215		1	25.0
Drainage/Utilities/Trenching	7/1/2019	9/30/2019	79						6	79	6.9
Building Construction-Vendor	7/1/2020	12/31/2020	158						174	158	6.9
Building Construction-Vendor	1/1/2021	12/31/2021	313						174	313	6.9
Building Construction-Vendor	1/1/2022	9/30/2022	234						174	234	6.9

Notes:

a. Soil export quantities provided by Project Applicant Team/Contractor Representative.

b. Concrete import quantities provided by Project Applicant Team/Contractor Representative.

c. Assumes this activity would occur at the earliest anticipated date during the Foundation phase.

Sources: 1045 Olive, LLC 2017. ODA Architecture, LLC 2017.

1045 Olive Street Project
On-Road Soil/Material Haul Truck Regional Emissions - Unmitigated

On-Road Truck Regional Running Emissions

Construction Phase	Source	Year	Daily One-Way Truck Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Running Emissions Factor (grams/mile) CO2e	Regional Emissions CO2e (metric tons/year)
Demolition-Haul	T7 Single Construction	2019	30	26.00	10	20	1,615.87	25
Demolition-Vendor	MHDT/HHDT	2019	6	26.00	10	6.9	1,316.96	1
Site Preparation	T7 Single Construction	2019	30	2.00	10	23.6	1,615.87	2
Grading/Excavation-Haul	T7 Single Construction	2019	260	44.00	10	21	1,615.87	388
Grading/Excavation-Vendor	MHDT/HHDT	2019	6	105.00	10	6.9	1,316.96	6
Concrete Pour (1-day) c	T7 Single Construction	2019	1215	1.00	23	25	1,615.87	49
Drainage/Utilities/Trenching	MHDT/HHDT	2019	6	79.00	10	6.9	1,316.96	4
Building Construction-Vendor	MHDT/HHDT	2020	174	158.00	10	6.9	1,293.21	245
Building Construction-Vendor	MHDT/HHDT	2021	174	313.00	10	6.9	1,266.24	476
Building Construction-Vendor	MHDT/HHDT	2022	174	234.00	10	6.9	1,226.98	345

On-Road Truck Idling Emissions

Construction Phase	Source	Year	Daily Number of Trucks	Haul Days per Year (days/year)	Work Hours per Day (hours/day)	Idling Time per Truck (minutes)	Idling Emissions Factor (grams/hour) CO2e	Regional Emissions CO2e (metric tons/year)
Demolition-Haul	T7 Single Construction	2019	30	26	10	15	3,377.69	0.66
Demolition-Vendor	MHDT/HHDT	2019	6	26	10	15	6,637.9767	0.26
Site Preparation	T7 Single Construction	2019	30	2.00	10	15	3,377.69	0.05
Grading/Excavation-Haul	T7 Single Construction	2019	260	44.00	10	15	3,377.69	9.66
Grading/Excavation-Vendor	MHDT/HHDT	2019	6	105	10	15	6,637.9767	1.05
Concrete Pour (1-day) c	T7 Single Construction	2019	1215	1.00	23	20	3,377.69	1.37
Drainage/Utilities/Trenching	MHDT/HHDT	2019	6	79	10	15	6,637.9767	0.79
Building Construction-Vendor	MHDT/HHDT	2020	174	158	10	15	6,828.1970	46.93
Building Construction-Vendor	MHDT/HHDT	2021	174	313	10	15	6,899.5065	93.94
Building Construction-Vendor	MHDT/HHDT	2022	174	234	10	15	6,991.6533	71.17

Total	490

1045 Olive Street Project
On-Road Truck Emission Factors (Aggregate Model Year, Aggregate Speeds)

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

	1	2	3	4	5	22	23	24	25	26	27	28	29
						GREENHOUSE GASES							
Region	**CalYr**	**VehClass**	**MdlYr**	**Speed**	**Fuel**	**CO2_RUNEX**	**CO2_IDLEX**	**CH4_RUNEX**	**CH4_IDLEX**	**N2O_RUNEX**	**N2O_IDLEX**	**CO2e_RUNEX**	**CO2e_IDLEX**
South Coast AQMD	2019	T7 single construction	Aggregated	Aggregated	All	1,543.2536	3,224.4229	0.0129	0.0893	0.2426	0.5068	1,615.87	3,377.69
South Coast AQMD	2019	HHDT	Aggregated	Aggregated	CNG	3,551.5997	4,281.8479	5.5967	1.3544	0.7240	0.8729	3,907.27	4,575.83

Source: California Air Resources Board, EMFAC2017, http://www.arb.ca.gov/emfac/2017/. Accessed September 2019.

Exhibit B
Existing Operational Emissions

ESA

1045 Olive - Existing

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	14.65	1000sqft	0.62	14,653.00	0
Parking Lot	5.95	1000sqft	0.14	5,952.00	0
Strip Mall	5.17	1000sqft	0.20	5,171.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2017
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1132	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity: LADWP, 2016 Final Power Integrated Resource Plan, Table C-1 Year 2015, (December 2016).

Land Use - Existing buildings (15,827 sf is currently vacant and not included).

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Energy Use - Using Historical Data: Y

Water And Wastewater - No landscaping at existing uses; therefore, outdoor water is set at 0 gal/yr.

Solid Waste - CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1. Based on 27 employees and 8.2 lbs/day/employee. Assigned to the retail use.

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.88	0.88
tblLandUse	LotAcreage	0.34	0.62
tblLandUse	LotAcreage	0.12	0.20
tblProjectCharacteristics	CO2IntensityFactor	1227.89	1132
tblSolidWaste	SolidWasteGenerationRate	5.43	40.00
tblSolidWaste	SolidWasteGenerationRate	13.77	0.00
tblWater	OutdoorWaterUseRate	234,714.32	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Energy	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	80.7525	80.7525	2.0600e-003	4.5000e-004	80.9366
Waste						0.0000	0.0000		0.0000	0.0000	8.1196	0.0000	8.1196	0.4799	0.0000	20.1161
Water						0.0000	0.0000		0.0000	0.0000	1.1963	25.2108	26.4071	0.1235	3.0300e-003	30.3994

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Energy	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	80.7525	80.7525	2.0600e-003	4.5000e-004	80.9366
Waste						0.0000	0.0000		0.0000	0.0000	1.9487	0.0000	1.9487	0.1152	0.0000	4.8279
Water						0.0000	0.0000		0.0000	0.0000	1.1963	25.2108	26.4071	0.1235	3.0300e-003	30.3994

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.4370	79.4370	2.0400e-003	4.2000e-004	79.6134
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.4370	79.4370	2.0400e-003	4.2000e-004	79.6134
NaturalGas Mitigated	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3154	1.3154	3.0000e-005	2.0000e-005	1.3233
NaturalGas Unmitigated	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3154	1.3154	3.0000e-005	2.0000e-005	1.3233

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	9411.22	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5022	0.5022	1.0000e-005	1.0000e-005	0.5052
Unrefrigerated Warehouse-No Rail	15239.1	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8132	0.8132	2.0000e-005	1.0000e-005	0.8181
Total		**1.3000e-004**	**1.2100e-003**	**1.0200e-003**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3154**	**1.3154**	**3.0000e-005**	**2.0000e-005**	**1.3233**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	9411.22	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5022	0.5022	1.0000e-005	1.0000e-005	0.5052
Unrefrigerated Warehouse-No Rail	15239.1	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8132	0.8132	2.0000e-005	1.0000e-005	0.8181
Total		**1.3000e-004**	**1.2100e-003**	**1.0200e-003**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3154**	**1.3154**	**3.0000e-005**	**2.0000e-005**	**1.3233**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	5213.95	2.6772	7.0000e-005	1.0000e-005	2.6831
Strip Mall	82529.2	42.3760	1.0900e-003	2.2000e-004	42.4700
Unrefrigerated Warehouse-No Rail	66964.2	34.3839	8.8000e-004	1.8000e-004	34.4602
Total		**79.4370**	**2.0400e-003**	**4.1000e-004**	**79.6134**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	5213.95	2.6772	7.0000e-005	1.0000e-005	2.6831
Strip Mall	82529.2	42.3760	1.0900e-003	2.2000e-004	42.4700
Unrefrigerated Warehouse-No Rail	66964.2	34.3839	8.8000e-004	1.8000e-004	34.4602
Total		**79.4370**	**2.0400e-003**	**4.1000e-004**	**79.6134**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Unmitigated	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004

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	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0720					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Total	**0.0813**	**0.0000**	**3.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**6.4000e-004**	**0.0000**	**0.0000**	**6.8000e-004**

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	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0720					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Total	**0.0813**	**0.0000**	**3.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**6.4000e-004**	**0.0000**	**0.0000**	**6.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4071	0.1235	3.0300e-003	30.3994
Unmitigated	26.4071	0.1235	3.0300e-003	30.3994

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.382955 / 0	2.6819	0.0125	3.1000e-004	3.0873
Unrefrigerated Warehouse-No Rail	3.38781 / 0	23.7252	0.1110	2.7300e-003	27.3120
Total		**26.4071**	**0.1235**	**3.0400e-003**	**30.3994**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.382955 / 0	2.6819	0.0125	3.1000e-004	3.0873
Unrefrigerated Warehouse-No Rail	3.38781 / 0	23.7252	0.1110	2.7300e-003	27.3120
Total		**26.4071**	**0.1235**	**3.0400e-003**	**30.3994**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.9487	0.1152	0.0000	4.8279
Unmitigated	8.1196	0.4799	0.0000	20.1161

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	40	8.1196	0.4799	0.0000	20.1161
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**8.1196**	**0.4799**	**0.0000**	**20.1161**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.6	1.9487	0.1152	0.0000	4.8279
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**1.9487**	**0.1152**	**0.0000**	**4.8279**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

1045 Olive
Draft Environmental Impact Report
Greenhouse Gas Assessment

			GHG Emissions (metric tons/year)			
Scenario	**Year**	**VMT/year**	**CO2**	**CH4**	**N2O**	**CO2e**
			1	*25*	*298*	
Existing Uses	2017	760,945	323.68	0.02	0.02	330.0

Source: ESA 2019

EMFAC2017
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2017, 2020, 2021, 2022, 2023, 2024, 2025
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Sum of emissions [short tons/year]

Row Labels	CH4	CO2	N2O	Grand Total
2017	15.86846681	213894.1595	12.76594156	213922.7939
2020	13.24570066	203483.5335	11.56050389	203508.3397
2021	12.66420943	200182.1698	11.25327182	200206.0873
2022	11.85747905	196030.0563	10.91704756	196052.8308
2023	11.4427634	191383.8482	10.50485759	191405.7958
2024	11.14530176	188566.1528	10.31934928	188587.6174
2025	10.86081859	184356.9155	10.11433618	184377.8907
Grand Total	542240.6767	358652886.3	5742527.665	364937654.6

Emission Factors (Metric Tons/mile)

	CH4	CO2	N2O	Grand Total
2017	3.15571E-08	0.000425364	2.53872E-08	0.000433719
2020	2.5853E-08	0.00039716	2.25639E-08	0.000404531
2021	2.45001E-08	0.000387272	2.17706E-08	0.000394372
2022	2.27883E-08	0.00037674	2.09809E-08	0.000383562
2023	2.1821E-08	0.000364964	2.00325E-08	0.000371479
2024	2.10926E-08	0.000356863	1.95295E-08	0.00036321
2025	2.04049E-08	0.000346362	1.90024E-08	0.000352535

1045 Olive
Air Quality and Greenhouse Gas Assessment

CalEEMod Land Use Trip Rates

Land Use	CalEEMod Land Use	Traffic Memo Trip Rates (Daily)	CALEEMod Trip Rate				Weekend Percentage of Weekday	Weekday VMT	Weekend VMT	261 days Annual Weekday VMT	104 days Annual Weekend VMT	Total Annual VMT
			Weekday	Saturday	Sunday	Weekend Average						
Existing Uses to be Demolished/Removed												
Four Commercial Buildings												
Manufacturing	Manufacturing	3.82	3.82	1.49	0.62	1.055	28%	598	165	156078	17176	
Retail	Strip Mall	44.32	44.32	42.04	20.43	31.235	70%	1758	1239	458838	128853	
							Totals:	**2356**	**1404**	**614916**	**146029**	**760945**

Exhibit C

Project Operational Emissions

ESA

1045 Olive - Project - Los Angeles-South Coast County, Annual

1045 Olive - Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

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	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,468.0891	2,468.0891	0.1032	0.0297	2,479.5074
Waste						0.0000	0.0000		0.0000	0.0000	379.7961	0.0000	379.7961	22.4453	0.0000	940.9287
Water						0.0000	0.0000		0.0000	0.0000	21.0528	351.8400	372.8928	2.1795	0.0546	443.6518

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	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,445.3405	2,445.3405	0.1021	0.0294	2,456.6626
Waste						0.0000	0.0000		0.0000	0.0000	91.1511	0.0000	91.1511	5.3869	0.0000	225.8229
Water						0.0000	0.0000		0.0000	0.0000	12.6317	199.2400	211.8717	1.3071	0.0326	254.2770

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	96.9960
Vegetation Land Change	0.9051
Total	**97.9011**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,866.9737	1,866.9737	0.0910	0.0188	1,874.8589
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,889.7224	1,889.7224	0.0921	0.0191	1,897.7037
NaturalGas Mitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037
NaturalGas Unmitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	848.6081	0.0414	8.5600e-003	852.1922
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,889.7224**	**0.0921**	**0.0191**	**1,897.7037**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	825.8594	0.0403	8.3300e-003	829.3475
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,866.9737**	**0.0910**	**0.0188**	**1,874.8589**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Unmitigated	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245

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	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					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	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.4876**	**0.0947**	**8.2099**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**	**0.0000**	**13.4003**	**13.4003**	**0.0130**	**0.0000**	**13.7245**

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	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					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	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.4876**	**0.0947**	**8.2099**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**	**0.0000**	**13.4003**	**13.4003**	**0.0130**	**0.0000**	**13.7245**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	211.8717	1.3071	0.0326	254.2770
Unmitigated	372.8928	2.1795	0.0546	443.6518

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	296.0011	1.6993	0.0426	351.1857
City Park	0 / 0.0714889	0.2144	1.0000e-005	0.0000	0.2153
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	61.4139	0.3558	8.9200e-003	72.9673
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	15.2634	0.1243	3.0600e-003	19.2835
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**372.8928**	**2.1795**	**0.0546**	**443.6518**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	167.8216	1.0191	0.0255	200.8910
City Park	0 / 0.0357444	0.1072	1.0000e-005	0.0000	0.1076
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	34.8575	0.2134	5.3300e-003	41.7812
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	9.0854	0.0746	1.8400e-003	11.4972
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**211.8717**	**1.3071**	**0.0326**	**254.2770**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	91.1511	5.3869	0.0000	225.8229
Unmitigated	379.7961	22.4453	0.0000	940.9287

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	1772	359.7000	21.2577	0.0000	891.1415
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	99	20.0961	1.1877	0.0000	49.7873
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**379.7961**	**22.4453**	**0.0000**	**940.9287**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	425.28	86.3280	5.1018	0.0000	213.8740
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	23.76	4.8231	0.2850	0.0000	11.9489
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**91.1511**	**5.3869**	**0.0000**	**225.8229**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	97.9011	0.0000	0.0000	97.9011

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	0 / 0.21	0.9051	0.0000	0.0000	0.9051
Total		**0.9051**	**0.0000**	**0.0000**	**0.9051**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	137	96.9960	0.0000	0.0000	96.9960
Total		**96.9960**	**0.0000**	**0.0000**	**96.9960**

1045 Olive
Draft Environmental Impact Report
Greenhouse Gas Assessment

Scenario	Year	VMT/year	GHG Emissions (metric tons/year) CO2	CH4	N2O	CO2e
			1	*25*	*298*	
Project	2023	15,904,642	5,804.62	0.35	0.32	5,908.2

Source: ESA 2019

EMFAC2017
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2017, 2020, 2021, 2022, 2023, 2024, 2025
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Sum of emissions [short tons/year]

Row Labels	CH4	CO2	N2O	Grand Total
2017	15.86846681	213894.1595	12.76594156	213922.7939
2020	13.24570066	203483.5335	11.56050389	203508.3397
2021	12.66420943	200182.1698	11.25327182	200206.0873
2022	11.85747905	196030.0563	10.91704756	196052.8308
2023	11.4427634	191383.8482	10.50485759	191405.7958
2024	11.14530176	188566.1528	10.31934928	188587.6174
2025	10.86081859	184356.9155	10.11433618	184377.8907
Grand Total	542240.6767	358652886.3	5742527.665	364937654.6

Emission Factors (Metric Tons/mile)

	CH4	CO2	N2O	Grand Total
2017	3.15571E-08	0.000425364	2.53872E-08	0.000433719
2020	2.5853E-08	0.00039716	2.25639E-08	0.000404531
2021	2.45001E-08	0.000387272	2.17706E-08	0.000394372
2022	2.27883E-08	0.00037674	2.09809E-08	0.000383562
2023	2.1821E-08	0.000364964	2.00325E-08	0.000371479
2024	2.10926E-08	0.000356863	1.95295E-08	0.00036321
2025	2.04049E-08	0.000346362	1.90024E-08	0.000352535

1045 Olive
Air Quality and Greenhouse Gas Assessment

CalEEMod Land Use Trip Rates

Land Use	CalEEMod Land Use	Traffic Memo Trip Rates (Daily)	CALEEMod Trip Rate				Weekend Percentage of Weekday	Weekday VMT	Weekend VMT	261 days Annual Weekday VMT	104 days Annual Weekend VMT	Total Annual VMT
			Weekday	Saturday	Sunday	Weekend Average						
Project												
High Rise Apartments	High-Rise Apart.	6.65	6.65	6.39	5.86	6.125	92%	38414	35381	10026054	3679657	
Commerical Uses												
High Turnover Restaurant	High-Turnover Rest.	127.15	127.15	158.37	131.84	145.105	114%	3265	3726	852165	387510	
Quality Restaurant	Quality Rest.	89.95	89.95	94.36	72.16	83.26	93%	2685	2485	700785	258472	
							Totals:	**44364**	**41593**	**11579004**	**4325638**	**15904642**

1045 Olive Project
Draft Environmental Impact Report
Quantifying Greenhouse Gas Mitigation Measures - Transportation (Based on CAPCOA Guidance (August 2010))

EXISTING USES

Location Type	Global % VMT Reduction Cap
Urban:	75%
Less than 5 miles from central business district	
Jobs-rich (jobs/housing ratio greater than 1.5)	
Typical buildings are 6 stories or higher	
Grid street pattern	
Minimal setbacks	
Parking constrained on- and off-street	
Parking prices high/highest in the region	
High-quality rail; bus service at 10 min or less in peak hours	

Location Type	Global % VMT Reduction Cap
Suburban Center:	20%
Typically 20 miles or more from central business district	
Balanced jobs-housing	
Typical buildings are 2 stories	
Grid street pattern	
Setbacks 0 - 20 feet	
Parking somewhat constrained on-street; ample off-street	
Parking prices low (if priced at all)	
Bus service at 20 - 30 min and/or commuter rail station	

Compact Infill:	40%
Typically 5 - 15 miles from central business district	
Balanced jobs-housing (jobs/housing ratio from 0.9 to 1.2)	
Typical buildings are 2 - 4 stories	
Grid street pattern	
Setbacks 0 - 20 feet	
Parking constrained	
Parking prices low/moderate	
Rail w/in 2 miles; bus service at 15 min or less in peak hours	

Suburban:	15%
Typically 20 miles or more from central business district	
Housing-rich	
Typical buildings are 1 - 2 stories	
Curvilinear street pattern (cul-de-sac based)	
Parking between street and buildings; large lot residential	
Parking ample; largely surface lot-based	
No parking prices	
Limited bus service at 30 minute headways or more	

Total Global Transportation VMT Reduction =	**35.64%**	Cap: 75%
(Includes double counting correction.)		
Total LUT/SDT/PDT/TST VMT Reduction =	**35.64%**	Cap: 70%
Total LUT % VMT Reduction =	**34.32%**	Cap: 65%

Land Use/Location Transportation Measures (65% Reduction Cap)

LUT-1 Increase Density

% VMT Reduction = A × B [not to exceed 30%]

A (housing) = (Number of DU/acre - 7.6) / 7.6
A (jobs) = (Number of Jobs/acre - 20) / 20
B = 0.07%

% VMT Reduction =	0.59%	Cap: 30%
Number of DU/acre:	831.4	A = 500%
Number of Jobs/acre:	88.0	A = 340%

LUT-2 Increase Location Efficiency

% VMT Reduction Cap for all LUT measures

Urban LUT % VMT Reduction Cap:	65%
Compact Infill LUT % VMT Reduction Cap:	30%
Suburban Center LUT % VMT Reduction Cap:	10%

LUT-3 Increase Diversity of Urban and Suburban Developments (Mixed Use)

Urban: The urban project will be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.

Suburban: The suburban project will have at least three uses of the following on site and/or offsite within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office.

% VMT Reduction = Land Use × B [not to exceed 30%]
Land Use = % increase in land use index vs. single use
= (Land Use Index - 0.15) / 0.15
Land Use Index = -a / ln(6)
$a = \sum a_i \times \ln(a_i)$
a_i = building floor area / total square feet of area considered
a_1 = single family
a_2 = multi-family
a_3 = commercial
a_4 = industrial
B = 0.09

% VMT Reduction =	0.00%	Cap: 30%
Single family sqft:	-	a_1 = -
Multi-family sqft:	-	a_2 = -
Commercial sqft:	-	a_3 = -
Industrial sqft:	-	a_4 = -
Institutional sqft:	-	a_5 = -
Park sqft:	-	a_6 = -
Total sqft:	-	

		a_5 = institutional a_6 = park		(Note: If a_i = 0, then set a_i = 0.0000001)
LUT-4	Increase Destination Accessibility	% VMT Reduction = Center Distance × B [not to exceed 20%] Center Distance = (12 - Miles to downtown or job center) / 12 B = 0.20	% VMT Reduction = 10.44% Cap: 20% Miles to downtown or job center: 5.7 (Average distance to: L.A. Live and Financial District These locations are identified as job centers by Metro and by SCAG.) (Note: Only effective for 8 miles or less)	
LUT-5	Increase Transit Accessibility	% VMT Reduction = Transit × B [not to exceed 30%] Transit = % project transit - % typical ITE transit % project transit = -50x + 38 [where x = 0 - 0.5 miles to transit] -4.4x + 15.2 [where x = 0.5 - 3 miles to transit] % typical ITE transit = 1.3% B = 0.67	% VMT Reduction = 15.21% Cap: 30% Miles to transit: 0.28 (Note: Only effective for 3 miles or less)	
LUT-6	Integrated Affordable and Below Market Rate Housing	% VMT Reduction = 4% × % units BMR	% VMT Reduction = 0.00% % of units below market rate: 0.0% (Note: Only effective up to 30%)	
LUT-7	Orient Project Toward Non-Auto Corridor	Not quantified separately; Assumed to be included in LUT-3 (If included in LUT-3, VMT reduction should be at least 0.5% per 1% inprovement in transit frequency and 0.5% per 10% increase in transit ridership)		
LUT-8	Locate Project near Bike Path/Bike Lanes	Not quantified separately; Assumed to be included in LUT-4 (If included in LUT-4, VMT reduction should be at least 0.625%)		
LUT-9	Improve Design of Development	% VMT Reduction = Intersections × B Intersections = % increase vs. typical ITE suburban = (Intersections per square mile of project - 36) / 36 B = 0.12	% VMT Reduction = 13.00% Intersections per square mile: 75 (Estimated based on count of 4-way intersections within 1 mile radius of project site.) (Note: Only effective up to 100)	
Neighborhood/Site Enhancement Measures (5% Reduction Cap without NEV; 15% Reduction Cap with NEV)			**Total SDT % VMT Reduction = 2.00%**	Cap: 5% without NEV Cap: 15% With NEV
SDT-1	Provide Pedestrian Network Improvements	VMT reduction based on urban/rural context and pedestrian accomodations	% VMT Reduction = 2.00% Pedestrian network on-site and connecting off-site (urban/suburban): x 2% Pedestrian network on-site (urban/suburban): 1% (Mark an "X" in one of the above)	

Emergency Generator Emissions

updated: 9/15/2017

Conversion Factors

HP/kW	1.3410	
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Standby Emergency Generators

Ratings:	708	kW	*(based on engineering assumptions)*
	950	HP	*(based on engineering assumptions; conversion from kW to hp)*
Load Factor:	0.74		*(based on CalEEMod Generator Set Load Factor)*
Engine Emissions Tier:	Tier 4		*(compliance with CARB diesel regulations)*
Operating Hours per Unit:	2	hours/day	*(testing/maintenance)*
	50	hours/year	*(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)*

Emergency Generator Emissions

Units	Greenhouse Gases [1]	
	CO_2	CO_2e
g/kW-hr	—	—
g/HP-hr	526.17	530.91
lbs/hr	815.48	822.83
lbs/day	1,630.96	1,645.65
lbs/yr	40,774.00	41,141.33
tons/yr	20.39	20.57
metric tons/yr	**18.49**	**18.66**

Notes:

1. Emission factor for CO2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
   Emissions of GHGs assume 99.11% of the CO2e emissions occur as CO2, which is typical for off-road diesel engines.

Source: ESA 2017.

Exhibit D

No Implementation of Emissions Reductions Measures (NIERM) Operational Emissions

ESA

1045 Olive - Project - Los Angeles-South Coast County, Annual

1045 Olive - Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).
Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."
Woodstoves - Natural gas fireplaces in apartments for NIERM scenario.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.
Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.
Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.
Energy Mitigation - No nergy efficient appliances in NIERM scenario

Water Mitigation - No water reductions for NIERM scenario.

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblApplianceMitigation	PercentImprovement	30.00	0.00
tblApplianceMitigation	PercentImprovement	15.00	0.00
tblApplianceMitigation	PercentImprovement	50.00	0.00
tblApplianceMitigation	PercentImprovement	15.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	499,009.00	498,991.00
tblArchitecturalCoating	ConstArea_Residential_Interior	1,497,028.00	1,496,973.00
tblAreaCoating	Area_Residential_Exterior	499009	498991
tblAreaCoating	Area_Residential_Interior	1497028	1496973
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	794.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00

tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	8.02	0.10
tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

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	3.5068	0.2593	8.2800	1.4800e-003		0.0587	0.0587		0.0587	0.0587	0.0000	204.0692	204.0692	0.0166	3.5000e-003	205.5265
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,468.0891	2,468.0891	0.1032	0.0297	2,479.5074
Waste						0.0000	0.0000		0.0000	0.0000	379.7961	0.0000	379.7961	22.4453	0.0000	940.9287
Water						0.0000	0.0000		0.0000	0.0000	21.0528	351.8400	372.8928	2.1795	0.0546	443.6518

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	3.5068	0.2593	8.2800	1.4800e-003		0.0587	0.0587		0.0587	0.0587	0.0000	204.0692	204.0692	0.0166	3.5000e-003	205.5265
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,468.0891	2,468.0891	0.1032	0.0297	2,479.5074
Waste						0.0000	0.0000		0.0000	0.0000	91.1511	0.0000	91.1511	5.3869	0.0000	225.8229
Water						0.0000	0.0000		0.0000	0.0000	21.0528	351.8400	372.8928	2.1795	0.0546	443.6518

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	96.9960
Vegetation Land Change	0.9051
Total	**97.9011**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,889.7224	1,889.7224	0.0921	0.0191	1,897.7037
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,889.7224	1,889.7224	0.0921	0.0191	1,897.7037
NaturalGas Mitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037
NaturalGas Unmitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	848.6081	0.0414	8.5600e-003	852.1922
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,889.7224**	**0.0921**	**0.0191**	**1,897.7037**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	848.6081	0.0414	8.5600e-003	852.1922
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,889.7224**	**0.0921**	**0.0191**	**1,897.7037**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.5068	0.2593	8.2800	1.4800e-003		0.0587	0.0587		0.0587	0.0587	0.0000	204.0692	204.0692	0.0166	3.5000e-003	205.5265
Unmitigated	3.5068	0.2593	8.2800	1.4800e-003		0.0587	0.0587		0.0587	0.0587	0.0000	204.0692	204.0692	0.0166	3.5000e-003	205.5265

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	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0193	0.1646	0.0701	1.0500e-003		0.0133	0.0133		0.0133	0.0133	0.0000	190.6689	190.6689	3.6500e-003	3.5000e-003	191.8019
Landscaping	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.5068**	**0.2593**	**8.2800**	**1.4800e-003**		**0.0587**	**0.0587**		**0.0587**	**0.0587**	**0.0000**	**204.0692**	**204.0692**	**0.0166**	**3.5000e-003**	**205.5265**

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	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0193	0.1646	0.0701	1.0500e-003		0.0133	0.0133		0.0133	0.0133	0.0000	190.6689	190.6689	3.6500e-003	3.5000e-003	191.8019
Landscaping	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.5068**	**0.2593**	**8.2800**	**1.4800e-003**		**0.0587**	**0.0587**		**0.0587**	**0.0587**	**0.0000**	**204.0692**	**204.0692**	**0.0166**	**3.5000e-003**	**205.5265**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	372.8928	2.1795	0.0546	443.6518
Unmitigated	372.8928	2.1795	0.0546	443.6518

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	296.0011	1.6993	0.0426	351.1857
City Park	0 / 0.0714889	0.2144	1.0000e-005	0.0000	0.2153
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	61.4139	0.3558	8.9200e-003	72.9673
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	15.2634	0.1243	3.0600e-003	19.2835
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**372.8928**	**2.1795**	**0.0546**	**443.6518**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	296.0011	1.6993	0.0426	351.1857
City Park	0 / 0.0714889	0.2144	1.0000e-005	0.0000	0.2153
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	61.4139	0.3558	8.9200e-003	72.9673
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	15.2634	0.1243	3.0600e-003	19.2835
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**372.8928**	**2.1795**	**0.0546**	**443.6518**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	91.1511	5.3869	0.0000	225.8229
Unmitigated	379.7961	22.4453	0.0000	940.9287

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	1772	359.7000	21.2577	0.0000	891.1415
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	99	20.0961	1.1877	0.0000	49.7873
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**379.7961**	**22.4453**	**0.0000**	**940.9287**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	425.28	86.3280	5.1018	0.0000	213.8740
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	23.76	4.8231	0.2850	0.0000	11.9489
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**91.1511**	**5.3869**	**0.0000**	**225.8229**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	97.9011	0.0000	0.0000	97.9011

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	0 / 0.21	0.9051	0.0000	0.0000	0.9051
Total		**0.9051**	**0.0000**	**0.0000**	**0.9051**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	137	96.9960	0.0000	0.0000	96.9960
Total		**96.9960**	**0.0000**	**0.0000**	**96.9960**

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Scenario	Year	VMT/year	GHG Emissions (metric tons/year) CO2	CH4	N2O	CO2e
			1	*25*	*298*	
NIERM Project	2023	24,452,130	8,924.14	0.53	0.49	9,083

Source: ESA 2019

EMFAC2017
Region Type: Air District
Region: SOUTH COAST AQMD
Calendar Year: 2017, 2020, 2021, 2022, 2023, 2024, 2025
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Sum of CO2e_annu	Column Labels			
Row Labels	CH4	CO2	N2O	Grand Total
2017	15.86846681	213894.1595	12.76594	213922.8
2020	13.24570066	203483.5335	11.5605	203508.3
2021	12.66420943	200182.1698	11.25327	200206.1
2022	11.85747905	196030.0563	10.91705	196052.8
2023	11.4427634	191383.8482	10.50486	191405.8
2024	11.14530176	188566.1528	10.31935	188587.6
2025	10.86081859	184356.9155	10.11434	184377.9
Grand Total	542240.6767	358652886.3	5742528	3.65E+08

	Emission Factors (Metric Tons/mile)			
	CH4	CO2	N2O	Grand Total
2017	3.15571E-08	0.000425364	2.54E-08	0.000425
2020	2.5853E-08	0.00039716	2.26E-08	0.000397
2021	2.45001E-08	0.000387272	2.18E-08	0.000387
2022	2.27883E-08	0.00037674	2.1E-08	0.000377
2023	2.1821E-08	0.000364964	2E-08	0.000365
2024	2.10926E-08	0.000356863	1.95E-08	0.000357
2025	2.04049E-08	0.000346362	1.9E-08	0.000346

1045 Olive Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Estimated Annual Vehicle Miles Traveled - NIERM Project

VMT-Generating Existing Land Uses	CalEEMod Type	CALEEMod Trip Rate					Traffic Memo Weekday VMT	Estimated Weekend VMT	261 days Annual Weekday VMT	104 days Annual Weekend VMT	Total Annual VMT
		Weekday	Saturday	Sunday	Weekend Average	Weekend Percentage of Weekday					
NIERM Project Trip-Generating Uses											
High-Rise Residential	High-Rise Residential	6.65	6.39	5.86	6.13	92%	55,968	51,549	14,607,648	5,361,145	19,968,793
High-Turnover Restaurant	High-Turnover Restaurant	127.15	158.37	131.84	145.11	114%	6,996	7,984	1,825,956	830,327	2,656,283
Quality Restaurant	Quality Restaurant	89.95	94.36	72.16	83.26	93%	5,114	4,734	1,334,754	492,299	1,827,053
							68,078	*64,267*	*17,768,358*	*6,683,772*	*24,452,130*
									NIERM Project Uses Annual VMT:		**24,452,130**

Source: ESA 2019

G-2 ELDP Documentation Package

1. Notice of Completion

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

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

SCH # TBD

Project Title: 1045 Olive Street Project

Lead Agency: City of Los Angeles | Contact Person: Sarah Molina-Pearson
Mailing Address: 200 N. Spring Street, Room 750 | Phone: (213) 978-1470
City: Los Angeles | Zip: 90012 | County: Los Angeles

Project Location: County: Los Angeles | City/Nearest Community: Los Angeles/Downtown
Cross Streets: S Olive Street and W 11th Street | Zip Code: 90015
Longitude/Latitude (degrees, minutes and seconds): 34 ° 02 ′ 29 ″ N / 118 ° 15 ′ 39 ″ W | Total Acres: 0.96
Assessor's Parcel No.: Multiple including 5139-010-001 | Section: | Twp.: | Range: | Base:
Within 2 Miles: State Hwy #: I-10, I-110, US 101 | Waterways:
Airports: | Railways: Metro Blue, Expo, Red | Schools: Los Angelitos Early Ed.

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other:
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☒ Other: AB 900 Application

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other: AB 900

Development Type:

☒ Residential: Units 794 Acres
☐ Office: Sq.ft. Acres Employees
☒ Commercial: Sq.ft. 12,504 Acres Employees
☐ Industrial: Sq.ft. Acres Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

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

Present Land Use/Zoning/General Plan Designation:

Commercial Buildings/[Q]R5-4D-O/High Density Residential

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

1045 Olive, LLC (Applicant) proposes the development of a new mixed-use development on an approximately 0.96-acre site located at the northwest corner of Olive Street and 11th Street (Project Site). Five existing single story commercial buildings containing 35,651 square feet would be removed and replaced with a new 751,777 square foot mixed-use high-rise building (Project). The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. The development would include a 61-story tower atop a nine level podium structure for a total of 70 floors, up to 810 feet in height.

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

Reviewing Agencies Checklist

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

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

_____ Other: _____
_____ Other: _____

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

Starting Date _____ Ending Date _____

Lead Agency (Complete if applicable):

Consulting Firm: ESA
Address: 233 Wilshire Blvd Suite 150
City/State/Zip: Santa Monica, CA 90401
Contact: Jay Ziff
Phone: 310.451.4488

Applicant: 1045 Olive, LLP
Address: 2200 Biscayne Boulevard
City/State/Zip: Miami, FL 33137
Phone: (424) 653-2100

Signature of Lead Agency Representative: _____ **Date:** _____

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

2. Environmental Leadership Development Project (ELDP) Application, Part 1

Application for Environmental Leadership Development Project

1045 Olive, LLC

1045 Olive Street, Los Angeles, California 90015

December 2017



Application for Environmental Leadership Development Project

Project Title: 1045 Olive Street

Project Applicant: 1045 Olive, LLC

Project Location: Los Angeles, California

PROJECT PROPOSAL

1045 Olive, LLC (Applicant) proposes a new mixed-use development (Project) on an approximately 0.96-acre site located at the northwest corner of Olive Street and 11th Street (Project Site). Four existing single story commercial buildings would be removed and replaced with a new 751,777 square foot (net) mixed-use high-rise building. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[1] The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The residential units would include a large range of housing types to serve a broad section of the housing market, including singles, small families, and empty-nesters as well as few larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. Approximately two thirds of the units would be smaller than 2-bedroom in size and approximately one third of the units would be 2-bedrooms or larger in size. The residential units would be mostly located within the residential tower; however, approximately 40 units would be located along the top five levels of the Podium facing Olive Street and 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The commercial uses would meet needs of neighborhood residents. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing environmental impacts, including for traffic and greenhouse gas (GHG) emissions, this assessment conservatively

[1] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.[2]

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

PROJECT SITE

The Project Site is located at 1045 Olive Street on the northwest corner of Olive Street and 11th Street in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. The size of the Project Site will be reduced during Project implementation to increase the width of the alley and adjacent sidewalks to meet current standards. The post dedication Site would be 37,172 square feet.

Uses within the block that lie adjacent to the Project include a 7-story mixed-use development to the north, 7-story mixed-use development to the northwest, and a two story commercial building and 25-story mixed-use high-rise building to the west. Adjacent development across Olive Street to the east includes single story commercial uses; and across 11th Street to the south includes a surface parking. Surrounding development includes a large array of newer mixed use development, and older commercial, office, residential and warehouse uses.

2 Calculations included in the analysis of environmental impacts for this Project conservatively assume that all of the commercial space would be used for restaurant uses. This provides for conservative analyses as restaurant uses generate greater impacts than retail uses. For example, restaurant uses generate greater levels of traffic and greater consumption of resources such as water consumption.

The Project vicinity is highly urbanized and generally built-out. The South Park community of Downtown Los Angeles is one of nine-districts in the Central City Community Plan area, and is representative of the Downtown Center with its concentration of government-related uses, high- and mid-rise office buildings, residential buildings, hotels, retail uses, museums, and cultural districts. The South Park area includes a mix of residential, medical, commercial, and retail uses; with a substantial concentration of housing located next to and over support services, such as retail and commercial developments that provide employment opportunities for area residents.

The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is also located within walking distance (approximately 0.27 miles) east of the Figueroa Street Corridor, the focus of the MyFigueroa Streetscape project that is transforming the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFigueroa project extends eastward from Figueroa Street along 11th Street adjacent to the Project Site, ending at Broadway. Figueroa Street in the Project vicinity is also the focus of regional activity including LA LIVE, an entertainment, hotel, and residential complex that is a Citywide focus of entertainment activity; the Staples Center Arena, a multipurpose sports arena which is home to the Los Angeles Clippers, Los Angeles Kings, Los Angeles Lakers and Los Angeles Sparks; and the Los Angeles Convention Center, which regularly features conventions, trade shows, and exhibitions.

CONSISTENCY WITH STATUTORY REQUIREMENTS FOR CEQA STREAMLINING

This application was prepared in accordance with the Governor's Guidelines for Streamlining Judicial Review under the California Environmental Quality Act (CEQA), which is provided on the Governor's Office of Planning and Research Website (http://opr.ca.gov/s californiajobs.php).

The following information (in addition to all exhibits) is submitted to establish that the Project satisfies the statutory requirements for CEQA streamlining as further informed by the criteria set forth in the Governor's Guidelines under California Public Resources Code Section 21178 et seq.

Information to show the project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature.

The Project is a mixed-use development that is both residential and commercial in nature, located on property zoned for high density residential development and commercial uses. As previously

stated, the Project would include 794 multi-family residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level.

The residential units would include a large range of housing types to serve a broad section of the housing market, including singles, small families, and empty-nesters as well as few larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. The Project's commercial uses would meet needs of neighborhood residents. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses.

Amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

Proposed site plans for the Project are attached as **Exhibit 1**. Renderings of the Project are attached as **Exhibit 2**.

Information to show the project will qualify for LEED Gold Certification. The application shall specify those design elements that make the project eligible for LEED Gold Certification, and the applicant shall submit a binding commitment to delay operating the project until it receives LEED Gold Certification. If, upon completion of construction, LEED Gold Certification is delayed as a result of the certification process rather than a project deficiency, the applicant may petition the Governor to approve project operation pending completion of the certification process.

The Project will encourage design and construction decisions that have the potential to reduce energy and water use, promote resource conservation through redevelopment and the sourcing of local construction materials and create healthier indoor environments. The Project will achieve the United States Green Building Standards (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification. Achieving LEED Gold Certification requires obtaining at least 60 points satisfying seven categories, which can be organized into three overarching themes: Siting and Transportation, Building Performance, and Material Selection. The end result is a positive impact on resource conservation, the built environment, and the local community.

Siting, Transportation, and Mixed Use: This overarching theme addresses preservation of undeveloped property by encouraging infill development, adaptive re-use of existing historic buildings, and facilitating pedestrian activity by integrating a diversity of uses and providing convenient access to public transportation. The Project is located in a prime urban location close to transit, entertainment and employment and will integrate a range of residential and commercial uses around public and private open spaces.

The Project will be designed as a high-density residential building with neighborhood serving commercial uses on a previously developed site in close proximity (i.e., within a one-half mile) to a number of services including restaurant, grocery, laundry/cleaner, movie theater, fitness center uses and other service uses. The Project would also incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent underground parking and incorporate heat island reduction strategies for the Project roof areas.

The Project's placement within Downtown Los Angeles results in increased efficiencies with respect to the siting and transportation in the area. The Project is located less than 0.5 miles from Metro Blue Line and Expo Line station at Pico Boulevard, which connects to the 7th Street/Metro Center and the Red Line and Purple Line. The Project is also located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. Additionally, the Project will provide short- and long-term bicycle parking for bicycle commuters to facilitate "last mile" connectivity to nearby multi-modal transit options.

The Project would promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

Building Performance: This overarching theme emphasizes water and energy efficiency to maximize livability with reduced resource consumption. Consideration will be taken to select high-performance materials, fixtures and appliances to optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements and water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would include other specific design features that would be incorporated into the Project design to enhance energy efficiency and sustainability. Wraparound-cantilevered balconies would be provided on every residential level that would provide shade and minimize solar gain throughout the building. Further considerations regarding energy efficiency and sustainability include native plants and drip/subsurface irrigation systems, individual metering or sub metering for water use, leak detection systems, rainwater harvesting and provisions for electric vehicle charging (wiring for 5 percent of all parking spaces and pre-wiring for 20 percent of all parking spaces).

Material Selection: This overarching theme attempts to reduce the building's life cycle impact through the selection of upcycled, recycled and locally sourced materials where feasible and also minimize exposure to environmental toxins by choosing low volatile organic compound (VOC) materials. A few practices being considered are using salvaged, refurbished or reused materials for at least 5 percent of the total value of materials on the Project, using materials with recycled content for at least 10 percent of the total value of materials on the Project, using refrigerants that minimize ozone depletion, using adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of VOCs and/or other air quality pollutants, and providing on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable

materials and adequate storage areas for such containers during construction and after the building is occupied. Additionally, a construction and demolition waste management plan will maximize the recycling or salvage of nonhazardous construction debris.

Green Building Features: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED required prerequisites.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

The GHG Emissions Offset Approach for the 1045 Olive Street Project / Commitment Letter and LEED Measures, dated December 2017, is attached as **Exhibit 3**.

Information to show the project will achieve at least 15 percent greater transportation efficiency than comparable projects. "Transportation efficiency" is defined as the number of vehicle trips by employees, visitors, or customers to the project divided by the total number of employees, visitors, and customers. The applicant shall provide information setting forth its basis for determining and evaluating comparable projects and their transportation efficiency, and how the project will achieve at least 15 percent greater transportation efficiency. For the purpose of this provision, comparable means a project of the same size, capacity and location.

The Project is considered an "infill" project, as it is replacing existing commercial uses with a high-density, mixed-use development. The Project Site is located in the South Park community of Downtown Los Angeles. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110), which provide regional access to the Site.

The Project includes a mix of residential and neighborhood serving commercial uses (restaurant and retail) located at the ground level, which would provide convenient local destinations for the residential element of the Project without having to drive to other locations. The mix of uses on the Project Site provides for internal capture of vehicle trips that would otherwise occur without the mix of uses. The Project is also located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the LADOT DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project would also implement a Traffic Demand Management (TDM) Program that would provide new on-site residents and employees with transit information, on-site bicycle amenities (bicycle racks, lockers, showers, etc.), unbundle residential parking, and other measures to encourage the use of non-auto modes and reduce vehicle trips to and from the Project Site.

The combined effects of the Project's urban infill location along major corridors, proximity to transit and pedestrian amenities, and proposed TDM program would reduce the Project's anticipated daily vehicular trip generation estimates by approximately 32 percent as compared to a comparable mixed-use project. Therefore, the Project results in substantially more than the 15 percent greater transportation efficiency requirement.

The AB 900 Traffic Assessment for the 1045 Olive Street Project, dated September 2017, is attached as **Exhibit 4**.

Information to show the project is located on an infill site, defined at Public Resources Code Section 21061.3, and in an urbanized area, as defined at Public Resources Code Section 21071

The Project is located on an infill site. Under Public Resources Code Section 21061.3, an "infill site" is defined as a site that "has been previously developed for qualified urban uses." In turn, a "qualified urban use" is defined, pursuant to Public Resources Code Section 21072, as "any residential, commercial, public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses." The Project Site meets this definition as it is currently developed with four existing commercial buildings. Additionally, the Project is located in an "urbanized area," which is defined under Public Resources Code Section 21071 as "an incorporated city" that meets the criteria of having a population of at least 100,000 persons. The City of Los Angeles has an estimated population of 4,041,707 in 2017 according to the 2017 estimates prepared by the California Department of Finance. The Project would represent an urban infill development since it would be located on a site that meets the definition of an infill site in an urbanized area and would be considered a qualified urban use.

For a project that is within a metropolitan planning organization for which a sustainable communities strategy or alternative planning strategy is in effect, information to show the project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets. For the purposes of this provision, "in effect" means that the sustainable communities strategy or the alternative planning strategy has been adopted by the metropolitan planning organization, and that the Air Resources Board has accepted the metropolitan planning organization's determination that the sustainable communities strategy or alternative planning strategy meets the adopted greenhouse gas reduction targets and is not the subject of judicial challenge.

California Senate Bill (SB) 375 was passed by the State Assembly on August 25, 2008 and signed into law by the Governor on September 30, 2008. This legislation links regional planning for housing and transportation with the greenhouse gas (GHG) reduction goals outlined in California Assembly Bill (AB) 32. Under SB 375, each Metropolitan Planning Organization (MPO) is required to adopt a Sustainable Community Strategy to encourage compact development that reduces passenger vehicle miles traveled (VMT) and trips so that the region will meet a target, created by the California Air Resources Board (CARB), for reducing GHG emissions.

The Project is within the jurisdiction of the Southern California Association of Governments (SCAG). On April 4, 2012, SCAG's Regional Council adopted the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future (2012–2035 RTP/SCS). On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 RTP/SCS: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life. The 2016-2040 RTP/SCS reaffirms the land use policies that were incorporated into the 2012-2035 RTP/SCS. On June 28, 2016, CARB accepted SCAG's quantification of GHG emission reductions from the 2016 SCS and the determination that the 2016 SCS would, if implemented, achieve the 2020 and 2035 GHG emission reduction targets established by CARB.[3]

The purpose of the SCAG RTP/SCS is to achieve its assigned regional per capita GHG reduction targets for the passenger vehicle and light-duty truck sector established by CARB pursuant to SB 375. SCAG's RTP/SCS plans for regional population growth using smart land use strategies. As part of the SCS/RTP, "transportation network improvements would be included, and more compact, infill, walkable and mixed-use development strategies to accommodate new region's growth would be encouraged to accommodate increases in population, households, employment,

3 CARB, Executive Order G-16-066, SCAG 2016 SCS ARB Acceptance of GHG Quantification Determination, April 2016 (http://www.arb.ca.gov/cc/sb375/scag_executive_order_g_16_066.pdf).

and travel demand."[4] Moreover, the RTP/SCS states that while "[p]opulation and job growth would induce land use change (development projects) and increase VMT, and would result in direct and indirect GHG emissions," the RTP/SCS would "supports sustainable growth through a more compact, infill, and walkable development pattern."[5] Accordingly, the RTP/SCS outlines the region's plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Additionally, the RTP/SCS demonstrates the region's ability to attain and exceed the GHG emission-reduction targets set forth by CARB. The majority of new housing and job growth is focused in high-quality transit areas (HQTA) and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development (TOD). This overall land use development pattern supports and complements the proposed transportation network that emphasizes system preservation, active transportation, and transportation demand management TDM measures.

Adopted strategies for the reduction of GHG emissions, as part of the 2012–2035 RTP/SCS and the 2016-2040 RTP/SCS, have the potential to significantly change the region's land use and travel patterns to achieve GHG reductions by 2020, 2035, and 2040. Such strategies include (but are not limited to) the following:

- Compact growth in areas accessible to transit;
- Half of all new development on three percent of the region's land use;
- More multi-family housing, jobs, and housing closer to transit;
- New housing and job growth focused in HQTAs; and
- Investments in biking and walking infrastructure to improve active transportation options and transit access.

Consistent with the RTP/SCS, the Project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services provided by the nearby Metro Blue Line and Expo Line station at Pico Boulevard, which provides convenient access to locations within Downtown Los Angeles, Long Beach, Culver City, Santa Monica, and direct connections to the Metro Red and Purple lines that provide transit service to a multitude of locations through the Los Angeles region including Hollywood, Koreatown, and Universal City. The Project would be located within a quarter-mile of public transportation, including existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The SCAG objective of locating multi-family housing in proximity to jobs and transit would be accomplished by the Project. New housing and job growth, as a result of the completed

4 Southern California Association of Governments, Draft Program Environmental Impact Report – 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, (2015), page 3.8-35.

5 Ibid, page 3.8-36.

Project, is focused in a HQTA, which SCAG defines as an area within a half mile of a well-serviced transit stop. A well-service transit stop is one which has a 15 minute or less service frequency during peak commute hours."[6] As discussed above, the Project would be consistent with this strategy.

The Project would also be consistent with the general land use designation, density, and building intensity outlined in the SCAG 2016–2040 RTP/SCS. Using data collected from local jurisdictions, including General Plans, SCAG categorized existing land use into "land use types," then combined these land use types into 35 place types, and then classified sub-regions into one of three land use development categories: urban, compact, or standard. SCAG used each of these three categories to describe the conditions that exist and/or are likely to exist within each specific area of the region.[7]

SCAG identified the existing General Plan land uses as Multi-Family Residential (SCAG Data Request Maps, refer to the attached **Figure 1**). After converting this data into Scenario Planning Zone-level place types, SCAG categorized the area surrounding the Project as an urban area.[8]

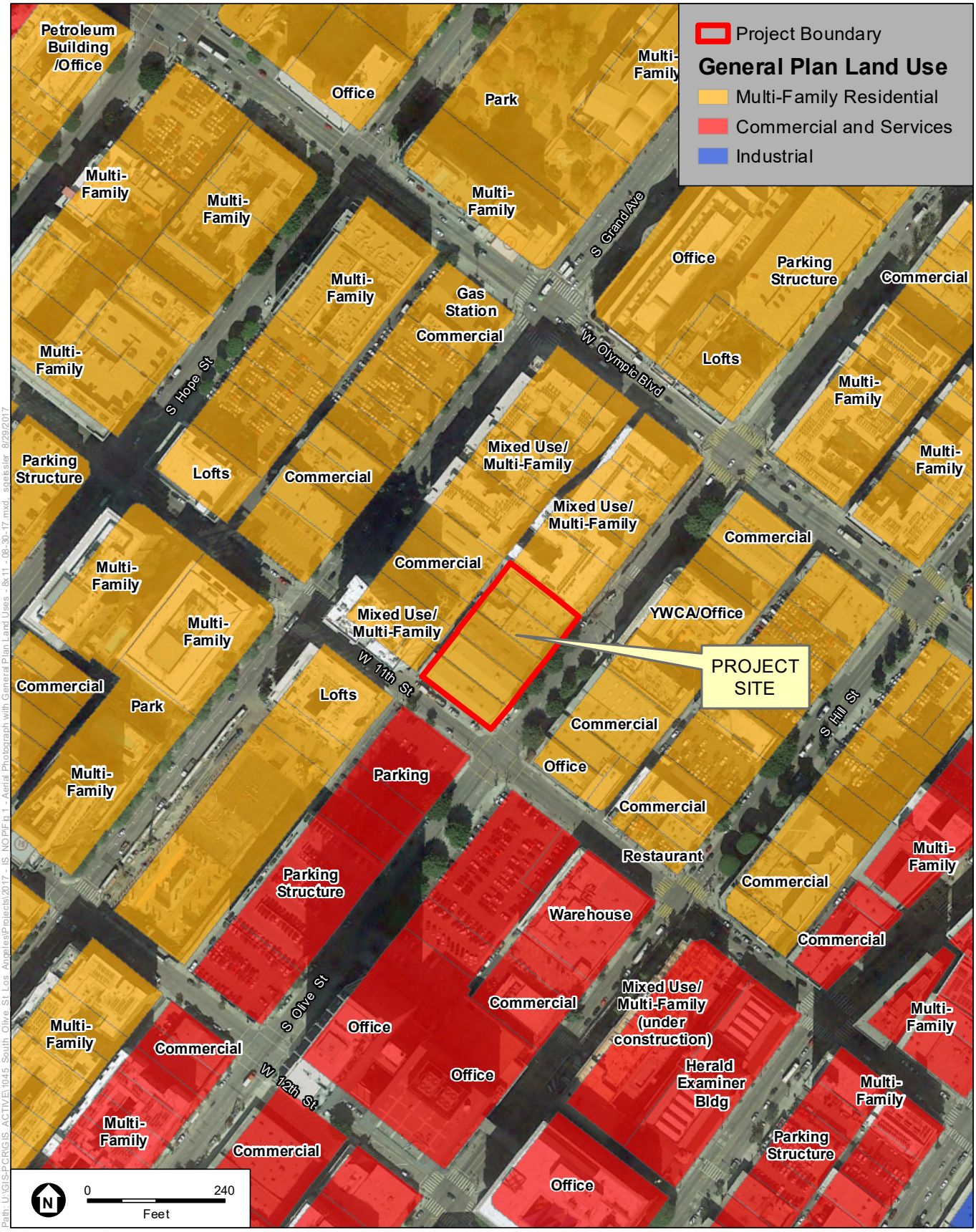
The RTP/SCS defines urban areas as "often found within and directly adjacent to moderate and high density urban centers. Nearly all urban growth in these areas would be considered infill or redevelopment. The majority of housing is multi-family and attached single-family (townhome), which tend to consume less water and energy than the large types found in greater proportion in less urban locations. These areas are supported by high levels of regional and local transit service. They have well-connected street networks, and the mix and intensity of uses result in a highly walkable environment. These areas offer enhanced access and connectivity for people who choose not to drive or do not have access to a vehicle."[9]

6 Technical Evaluation of the Greenhouse Gas Emission Reduction Quantification for the Southern California Association of Governments' SB 375 Sustainable Communities Strategy, dated May 2012. Document located on the ARB website: http://www.arb.ca.gov/cc/sb375/scag_scs_tech_eval0512.pdf.

7 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, pages 20-21, (2016). Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 2017.

8 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Exhibit 13 Forecasted Regional Development Types (2012) – Los Angeles City Subregion, (2015). Available at: http://scagrtpscs.net/Documents/2016/draft/d2016RTPSCS_SCSBackgroundDocumentation.pdf. Accessed September 2017.

9 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, page 20, (2016). Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 2017.



SOURCE: Google Earth, 2016, SCAG 2012.

1045 Olive Street

Figure 1
Aerial Photograph with General Plan Land Uses

ESA

The SCAG urban land development category comprises the following urban footprint scenario models, including urban mixed use, urban residential, urban commercial, city mixed use, city residential, and city commercial.[10, 11] The Project would consist of multi-family residential uses with ground- and mezzanine-level neighborhood serving commercial uses and thus would be consistent with the range of place types within the SCAG urban land development category.

Additionally, the RTP/SCS states that "urban mixed-use districts are exemplified by a variety of intense uses and building types. Typical buildings are between 10 and 40+ stories tall, with offices and/or residential uses and ground-floor retail space. Parking is usually structured below or above ground. Workers, residents, and visitors are well served by transit, and can walk or bicycle for many of their transportation needs." The land use mix for the urban mixed-use place type is approximately 18 percent residential, 16 percent employment, 45 percent mixed-use, and 21 percent open space/civic.[12]

Urban residential uses are the most intense residential-focused type, and are typically found within or adjacent to major downtown areas. They include high-rise and mid-rise residential towers, with some ground-floor retail space. Parking is usually structured below or above ground. Residents are well served by transit and can walk or bicycle for many of their daily needs.[13]

City mixed-use areas are transit oriented and walkable, and contain a variety of uses and building types. Typical buildings are between 5 and 30 stories tall, with ground-floor retail space and offices and/or residential on the floors above. Parking is usually structured below or above ground. The land use mix for this place type is typically approximately 28 percent residential, 17 percent employment, 35 percent mixed use, and 20 percent open space/civic. The residential mix is composed of 97 percent multi-family and 3 percent townhomes. The average total net floor-area ratio (FAR) is 3.4, floor count ranges from 3 to 40 stories, and gross density ranges from 10 to 75 households per acre.[14]

The RTP/SCS describes city residential place types as "dominated by mid- and high-rise residential towers, with some ground-floor retail space, and offices and/or residences on the floors above. Parking is usually structured below or above ground. Residents are well served by transit, and can walk or bicycle for many of their daily needs." The land use mix for this place type is typically approximately 65 percent residential, 4 percent employment, 11 percent mixed use, and 20 percent open space/civic. The residential mix is 97 percent multi-family and 3 percent

10 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 9, (2016). Available at: http://www.scagrtpscs.net/Documents/2016/supplemental/LDC_PlaceType.pdf. Accessed September 2017.

11 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 6, (2016). Available at: http://scagrtpscs.net/documents/2016/supplemental/UrbanFootprint_PlaceTypesSummary.pdf. Accessed September 2017.

12 Ibid.

13 Ibid.

14 Ibid.

townhome. The average total net FAR is 2.9, floor count ranges from 5 to 40 stories, and the gross density ranges from 35 to 37 households per acre.[15]

The Project consists of the development of a building containing mixed-use residential and commercial units in the South Park community of the city of Los Angeles. Surrounding land uses include a mixed-use development to the northeast of the Project site, a high-rise building to the west, commercial to the east, and a parking lot to the south.

The Project Site (1045 Olive Street) is currently occupied by four commercial buildings. The Project would consist of multi-family residential and ground- and mezzanine-level neighborhood serving commercial uses in a 61-story tower atop a nine level podium structure. The Project would include 6 subterranean and 8 above-grade parking levels within the podium, creating 802 residential vehicle parking spaces. Overall, the Project would include 794 residential units, and approximately 12,504 square feet of commercial space. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The Project is located within the Central City Community Plan area and is designated as High Density Residential and is zoned [Q]R5-4D-O. The R5 zoning designation permits the development of high density residential development. The "[Q]" Condition allows commercial uses to be included along with the residential development provided the floor area for the commercial uses does not exceed a 2:1 FAR. The Height District No. 4 permits a FAR of 13:1. However, the "D" limitation limits the floor area to a maximum of 6:1 FAR, unless additional floor area is permitted through a Transfer of Floor Area (TFAR). The Project is located within a designated Transit Priority Area and as a mixed-use Project qualifies for the 13:1 FAR pursuant to Section 14.5 of the Los Angeles Municipal Code (LAMC) as a Transit Area Mixed Use Project that allows the proposed FAR to be based on the area contained within the centerlines of Olive Street 11th Street, and the abutting alley. Therefore, the Project is consistent with the SCAG urban land development category and consistent with the land use designation.

Information to show that the applicant has notified a lead agency prior to the release of the draft environmental impact report that it intends to certify a project for streamlined environmental review under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011. Written acknowledgment from the lead agency of the applicant's intent to apply for certification may be used to satisfy this requirement.

Prior to the circulation of the Draft Environmental Impact Report and well before approval of the Project entitlements, the City of Los Angeles, lead agency for the Project, has been notified that the Applicant is seeking certification for the Project under the Jobs and Economic Improvement

15 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 6, (2016). Available at: http://scagrtpscs.net/documents/2016/supplemental/UrbanFootprint_PlaceTypesSummary.pdf. Accessed September 2017.

Through Environmental Leadership Act of 2011. The letter of acknowledgement and binding agreement between the Applicant and the City of Los Angeles is provided in **Exhibit 7**.

Information to show that the project will result in a minimum investment of $100 million in California through the time of completion of construction.

The Project will far exceed the $100 million minimum investment as required by Public Resources Code section 21183(a). In addition to the roughly $10 million in direct public benefit payments, the Project entails the demolition of 35,651 square feet of commercial buildings and construction of a 70-story urban mixed-used retail and residential project consisting of 794 apartments and 12,504 square feet of ground-level neighborhood serving commercial space. Based on recent construction cost information, the Project's hard costs are estimated to be over $300 million. The fiscal impacts and economic benefits are summarized in **Table 1** below.

TABLE 1
OVERVIEW OF FISCAL IMPACTS AND ECONOMIC BENEFITS

	Construction (One-Time/Short-Term)	Ongoing Operation (Annual)
Employment	**4,720 Jobs**	**550 Jobs**
Labor Income	**$327,400,000**	**$20,500,000**
Economic Output	**$808,200,000**	**$67,100,000**
State and Local Taxes	**$33,200,000**	**$8,600,000**
City of Los Angeles and other Local Cities	$3,800,000	$1,400,000
County of Los Angeles	$8,600,000	$4,800,000
State	$20,800,000	$2,400,000
Federal Taxes	**$65,700,000**	**$5,600,000**

SOURCE: Los Angeles Economic Development Corporation (LAEDC) Institute for Applied Economics, Project 1045 Olive – An Economic and Fiscal Impact Analysis, December 2017.

A detailed Fiscal Impact and Economic Benefit Analysis for the Project, dated December 2017, is attached as **Exhibit 5**.

Information to show that the project will satisfy the prevailing and living wage requirements of Public Resources Code section 21183(b).

The Project will create high-wage, highly skilled jobs that pay prevailing wages and living wages and will comply with all provisions of Public Resources Code Section 21183(b) as ordered. As defined in Section 21183(b)(1), "jobs that pay prevailing wages" means that all construction workers employed in the execution of the project will receive at least the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations pursuant to Sections 1773 and 1773.9 of the Labor Code. The Project Applicant will include this requirement in all contracts for the performance of the work.

As per Section 21183(b)(2)(B), the obligation of the contractors and subcontractors to pay prevailing wages may be enforced by the Labor Commissioner through the issuance of a civil wage and penalty assessment pursuant to Section 1741 of the Labor Code, which may be reviewed pursuant to Section 1742 of the Labor Code, within 18 months after the completion of the project, or by an underpaid worker through an administrative complaint or civil action. Section 21183(b)(2)(B) does not apply if a project labor agreement is in place with enforcement through an arbitration process. The Project has not entered into a project labor agreement; therefore, enforcement is subject to the provisions of Section 21183(b)(2)(B).

Information establishing that the project will not result in any net additional greenhouse gas emissions. This information includes (1) a proposed methodology for quantifying the project's net additional greenhouse gas emissions, and (2) documentation that quantifies both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and quantifies the net emissions of the project after accounting for any mitigation measures. This information is subject to a determination signed by the Executive Officer of the Air Resources Board that the project does not result in any net additional greenhouse gas emissions, following the procedures set forth in section 6 of the Governor's Guidelines.

The Project will not result in any net additional GHG emissions. The proposed methodology for quantifying the project's GHG emissions is attached as **Exhibit 6**.

Prior to the onset of construction activity, the existing uses will be vacated and all facilities will cease to operate. The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. These existing uses would be demolished and removed to allow for development of the Project. Given the physical space limitations of the Project Site, the entire site would be fully built out prior to occupancy. Thus, the project would not result in simultaneous construction and operation GHG emissions from partial occupancy during construction.

Construction of the project would result in one-time GHG emissions of carbon dioxide (CO_2) and smaller amounts of methane (CH_4) and nitrous oxide (N_2O) from heavy-duty construction equipment, haul trucks, and worker vehicles. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road and on-road emissions factors. The emissions are estimated using the California Emissions Estimator Model (CalEEMod), which incorporates the CARB off-road emissions factor model, OFFROAD, and the on-road emissions factor model, EMFAC. The output values used in this analysis are adjusted to be project-specific based on expected equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year. The CalEEMod tool provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Since a specific construction contractor(s) has not yet been

retained for the project, specific equipment specifications are not yet known. Therefore, air district recommended default equipment and vehicle horsepower ratings and load factors provided in CalEEMod are used in this assessment. The use of these CalEEMod factors is recognized as providing a reasonably conservative estimate of a project's construction emissions. Construction of the project would occur over a number of phases and include activities such as demolition, debris and soil hauling, building construction, architectural coating, and paving. The construction phases are not independent of each other, as there may be overlap and efficiency built into the construction process. Information regarding the activities that would occur during these phases is provided below:

- **Demolition:** This phase is anticipated to begin as early as 2019 and last for approximately one month. If construction commences at a later date, this assessment would be considered conservative as future year emission factors tend to decline in future years. Construction equipment would include a concrete saw, loader, haul trucks, jackhammer, sweeper/scrubber and other construction equipment.
- **Site Preparation:** This phase is anticipated to occur during demolition and last for approximately one month. Construction equipment would include a concrete saw, excavator, and sweeper/scrubber.
- **Grading and Excavation:** This phase is anticipated to have some overlap with the demolition and site preparation phase and last for approximately four months. Construction equipment would include a backhoe, drill rig, excavators, haul trucks, loaders, and sweeper/scrubber. Up to approximately 80,000 cubic yards of soil would be excavated and exported.
- **Utilities/Trenching:** This activity is anticipated to have some overlap with grading and excavation and last for approximately 3 months. During this phase, trenching for site utilizes would occur. Construction equipment would include a backhoe and sweeper/scrubber.
- **Foundation/Concrete Pouring:** This activity is anticipated to have some overlap with grading and excavation and utilities/trenching and would be on-going through building construction activities for approximately 2.5 years. During this activity, the building foundations would be prepared and concrete pouring for various building and Project Site elements would occur. Construction equipment would include a concrete trucks, backhoe, crane, forklift, and sweeper/scrubber.
- **Building Construction:** This phase is anticipated to begin after grading and excavation and after the building foundations have been prepared and last for just over 2 years. During this phase, the building would be constructed. Construction equipment would include cranes, forklifts, sweeper/scrubber, and material/vendor supply trucks.
- **Paving:** This activity is anticipated to last for approximately 2 months and occur during the building construction phase. During this activity, paving materials would be poured during construction of the buildings and related features and the surfaces would be paved. Construction equipment would include a backhoe, sweeper/scrubber, and other equipment.
- **Architectural Coating:** This activity is anticipated to last for approximately 2 years and occur during the building construction phase. During this activity, the interior and exterior coating would be applied to the residential and commercial uses as the floors are built out. Specific coating equipment would include an air compressor and forklift.

Operation of the Project would generate GHG emissions from vehicles traveling to and from the site, area sources (landscaping equipment and hearths) energy demand (electricity and natural gas), water demand, and solid waste generation. Physical and operational land use characteristics and green building features for which sufficient data is available to quantify the reductions from building energy and resource consumption are accounted for in the quantitative analysis, and include but are not limited to the following measures described below.

Land Use Characteristics: The Project includes a mix of residential and neighborhood serving commercial uses (restaurant and retail) located at the ground level, which would provide convenient local destinations for the residential element of the Project without having to drive to other locations. The mix of uses on the Project Site provides for internal capture of vehicle trips that would otherwise occur without the mix of uses. The Project is also located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. The Project is located in an area well served by multi-modal transportation options and in close proximity to services, which reduces VMT from private automobiles. The Project Site is less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard, which provides convenient access to locations within Downtown Los Angeles, Long Beach, Culver City, Santa Monica, and direct connections to the Metro Red and Purple lines that provide transit service to a multitude of locations through the Los Angeles region including Hollywood, Koreatown, and Universal City. The project would be located within a quarter-mile of public transportation, including existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is also an infill location in close proximity (i.e., within a one-half mile) to a number of services including restaurant, grocery, laundry/cleaner, movie theater, fitness center uses and other service uses. The Project would also implement a TDM Program that would provide new on-site residents and employees with transit information, on-site bicycle amenities (bicycle racks, lockers, showers, etc.), unbundle residential parking, and other measures to encourage the use of non-auto modes and reduce vehicle trips to and from the Project Site. These characteristics result in a substantial reduction in VMT compared to the regional average.

Green Building Features: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. Green building and LEED measures include the following.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

- The Project will optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED required prerequisites.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

To achieve the goal of the Project not resulting in any net additional GHG emissions, the Project would implement GHG reduction measures and programs that may include community-based programs that reduce sources of GHG emissions in the regions. These may include installing solar panels on existing rooftops and carports or other similar community-based measures. The Project may also purchase green-power to offset the GHG emissions from the Project's building electricity demand, obtain GHG credit offsets, or other similar types of GHG reductions. Detailed GHG emissions calculations demonstrating a net zero increase in GHG emissions is attached as **Exhibit 6**.

Information documenting a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183(d) (all mitigation measures will be conditions of approval and enforceable, and environmental mitigation measures will be monitored and enforced for the life of the obligation), (e) (applicant will pay costs for hearing by Court of Appeal), and (f) (applicant will pay costs of preparing the administrative record).

SB 734 (effective January 1, 2014) amended the AB 900 Guidelines, regarding the documentation of a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183 (d) (e) and (f), to remove the need for a binding agreement prior to the release of the Draft Environmental Impact Report. Section 21181 as amended by AB 246 requires the Governor to certify the project as an environmental leadership development project eligible for streamlining prior to January 1, 2020.

The letter of acknowledgement and binding agreement between the Applicant and the City of Los Angeles is provided in **Exhibit 7**.

Information per Public Resources Code 21184.5 as amended by SB 734 to show the project is providing unbundled parking for residential dwelling units, except for affordable dwelling units.

The project will provide unbundled parking for the residential dwelling units.

Information per Public Resources Code 21183(d) to show the project demonstrates compliance with the requirements of Chapters 12.8 (commencing with Section 42649) and 12.9 (commencing with Section 42649.8) of Part 3 of Division 30, as applicable.

With respect to municipal solid waste, the State has enacted regulations to address solid waste services and recycling. California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649 et seq. requires businesses that produce four cubic yards or more of solid waste per week or multifamily residential dwellings of five units or more to arrange for recycling services that are consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection, handling, or recycling of solid waste, to the extent that these services are offered and reasonably available from a local service provider.[16] In addition, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.8 et seq. requires after January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during 2014, a business that generates two cubic yards or more per week of commercial solid waste is required to arrange for organic waste recycling services that include at least one of the following actions: (1) source separate of organic waste from other waste and subscribe to a basic level of organic waste recycling service that includes collection and recycling of organic waste, (2) recycle its organic waste on-site or self-haul its own organic waste for recycling, (3) subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste, (4) make other arrangements to meet the organic waste requirements of a local governmental agency that are more stringent or comprehensive than the requirements of Chapter 12.9, unless the department determines that this requirement will not result in significant additional reductions of organics disposal.[17] The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan (SWIRP), also referred to as the City's Zero Waste Plan, whose goal is to lead Los Angeles towards being a "zero waste" City by 2030.[18] These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion (e.g., recycling) for the City to 76 percent as of 2013.[19] The City has also approved Ordinance No. 181519 (Los Angeles Municipal Code (LAMC) Chapter VI, Article 6, Section 66.32-66.32.5), which requires the diversion of mixed construction and demolition debris to City certified construction and demolition waste processors. The project would be consistent with the City and State waste requirements by utilizing waste collection services that are approved by the City and that meet the

16 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649. 2011, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.8.&article=. Access October 2017

17 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.9. January 2015, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.9.&article=. Accessed October 2017.

18 City of Los Angeles Department of Public Works, LA Sanitation, Solid Waste Integrated Resources Plan (SWIRP) – A Zero Waste Management Plan, October 2013, https://www.lacitysan.org/san/sandocview?docname=cnt012522. Accessed October 2017.

19 City of Los Angeles Department of Public Works, LA Sanitation, Recycling, 2017, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r?_adf.ctrl-state=kq9mn3h5a_188. Accessed October 2017.

applicable requirements for waste diversion and recycling mandates. The City generally relies on single-stream waste recycling where mixed waste is collected and sorted for recycling at a waste reclamation facility. The project would subscribe to a municipal solid waste collection service that is approved by the City and that meets applicable City and State waste collection, management, recycling and diversion requirements.

Consistency with Planning Goals, Policies and Objectives of the City of Los Angeles.

The Project Site is located within the Central City Community Plan area in the City of Los Angeles. The Project Site has a General Plan land use designation of High Density Residential and is currently zoned [Q]R5-4D-O. The R5 zoning designation permits the development of high density residential development. The "[Q]" Condition allows commercial uses to be included along with the residential development provided the floor area for the commercial uses does not exceed a 2:1 FAR. The Height District No. 4 permits a FAR of 13:1. However, the "D" limitation limits the floor area to a maximum of 6:1 FAR, unless additional floor area is permitted through a Transfer of Floor Area (TFAR). The Project is located within a designated Transit Priority Area and as a mixed-use project qualifies for the 13:1 FAR pursuant to Section 14.5 of the LAMC as a Transit Area Mixed Use Project that allows the proposed FAR to be based on the area contained within the centerlines of Olive Street 11th Street, and the abutting alley. The Project Site is also located in a Los Angeles State Enterprise Zone, Central City and Downtown Parking Districts, Greater Downtown Housing Incentive Area, South Park II Business Improvement District, and Central City Revitalization Zone.

The Project is consistent with many of the goals, policies and objectives of the City of Los Angeles General Plan, the Housing Element, and the Do Real Planning Guidelines. In addition, all entitlements being considered for approval by the City of Los Angeles conform with the appropriate sections set forth in the LAMC and the underlying zoning.

General Plan Framework

The General Plan Framework includes the following goals, objectives and policies relevant to the proposed mixed-use development:

Objective 3.1: Accommodate a diversity of uses that support the needs of the City's existing and future residents, businesses, and visitors.

Policy 3.1.1: Identify areas on the Land Use Diagram and the Community Plans sufficient for the development of a diversity of uses that serve the needs of existing and future residents (housing, employment, retail, entertainment, cultural/institutional, educational, health, services, recreation, and similar uses), provide job opportunities, and support visitors and tourism.

The Project would provide 794 multi-family residential units and approximately 12,504 square feet of neighborhood serving commercial uses and would replace the existing four commercial buildings that total 35,651 square feet on the Project Site. The range of housing types and

commercial uses represent a more diverse mix of land uses that would support the needs of the City's existing and future residents, businesses, and visitors. Downtown Los Angeles is a jobs-rich area and providing more residential uses on the Project Site would provide for needed housing in the City, particularly housing in close proximity to multi-modal transportation options.

The Framework Element Land Use Diagram(s) designate(s) districts, centers and mixed-use boulevards that are encouraged to develop with appropriate uses and character for their land use designations. The Project Site is located in an area that is identified as "Downtown Center," which is targeted for major cultural and entertainment facilities, hotels, professional offices, corporate headquarters, financial institutions, high-rise residential towers, regional transportation facilities and the Convention Center according to the City's General Plan Framework's Land Use Diagram. The Downtown Center is generally characterized by a floor area ratio up to 13:1 and high-rise buildings. Development of the Project would support the intent of the Downtown Center designation by providing high-rise residential with neighborhood serving commercial uses that provide housing options near regional transportation facilities, including the Metro Blue Line and Expo Line station at Pico Boulevard, and near job and entertainment opportunities including professional, offices, corporate headquarters, financial institutions, museums, theaters, restaurant, shopping, and other commercial service uses. The provision of residential units at this Downtown location would serve the needs of City residents, would expand the diversity within the designated Downtown Center, and provide housing in close proximity to the aforementioned commercial, retail, entertainment, and restaurant uses. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment.

Objective 3.2: To provide for the spatial distribution of development that promotes an improved quality of life by facilitating a reduction of vehicle trips, vehicle miles traveled, and air pollution.

Policy 3.2.3: Provide for the development of land use patterns that emphasize pedestrian/bicycle access and use in appropriate locations.

The Project would contribute to the concentration of mixed-use development along a corridor with convenient access to the Metro Blue Line and Expo Line (less than 0.5 miles), Metro bus and Metro rapid bus lines, and the LADOT DASH and Commuter Express lines. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project would also provide up to 886 bicycle spaces for on-site residents and the on-site commercial uses.

The new residential population would have access to commercial development on site as well as retail, restaurant, office, and entertainment activities within walking and biking distance and via bus and rail service. The Project would provide pedestrian access from various at-grade sidewalks and steps and would include a ground-level public Plaza with streetscaping,

landscaping and a public art display. At the pedestrian level, the Project would increase the sidewalk width and provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street to promote pedestrian activity.

The Project's location, design, and specific features, including its proximity to high-capacity and high-frequency transit, commercial uses easily accessible from the ground-level, and implementation of a TDM program that will reduce the use of single occupant vehicles and increase the number of trips by walking, bicycle, carpool, vanpool, and transit. The Project would be expected to result in VMT reductions of approximately 32 percent daily, including 31 percent during the morning peak hour and 32 percent during the afternoon peak hour.

Objective 3.16: Accommodate land uses, locate and design buildings, and implement streetscape amenities that enhance pedestrian activity.

The exterior boundaries of the Project Site along Olive Street and 11th Street would provide streetscape amenities for pedestrians, including public Plaza with streetscaping, landscaping and a public art display. At the pedestrian level, the Project would increase the sidewalk width and provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street to promote pedestrian activity. There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site and landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants. The addition of trees, landscaping, and streetscaping would enhance the Project Site and make it more inviting for pedestrian activity. The Project would also include neighborhood serving commercial uses easily accessible from the ground-level along Olive Street and 11th Street, which would also enhance pedestrian activity.

Housing Element 2013-2021

The Project is consistent with goals, objectives and policies of the Housing Element 2013-2021, adopted by the Los Angeles City Council on December 3, 2013. The City of Los Angeles is committed to providing affordable housing and amenity-rich sustainable neighborhoods for its residents, answering the variety of housing needs of its growing population. The purpose of the General Plan Housing Element is to provide guidance for meeting the City's need for housing per the allocation defined in SCAG's Regional Housing Needs Assessment.

Goal 1: An adequate supply of ownership and rental housing that is safe, healthy and affordable to people of all income levels, races, ages, and suitable for their various needs.

Objective 1.1: Produce an adequate supply of rental and ownership housing in order to meet current and projected needs.

Policy 1.1.3: Facilitate new construction and preservation of a range of different housing types that address the particular needs of the city's households.

Policy 1.1.4: Expand opportunities for residential development, particularly in designated Centers, Transit Oriented Districts and along Mixed-Use Boulevards.

The 2013-2021 Housing Element identifies a need for 82,002 new housing units, of which 35,412 units, i.e. 43.2 percent of all units, would be marketed at above moderate income levels. The remaining 56.8 percent of the needed housing units consist of 13,728 moderate income units (16.8 percent), 12,435 low income units (15.2 percent), 10,213 very low income units (12.5 percent), and 10,213 extremely low income units (12.5 percent). The Project would provide 794 new multi-family residential units that would serve the growing population of the community in the designated Downtown Center. The Project would also include commercial uses, which would contribute to meeting the needs of Project residents, as well as off-site residents, tourists and visitors. The Project would remove the existing commercial uses and result in a net decrease of 23,147 square feet of commercial space. However, Downtown Los Angeles is jobs rich and the Project's inclusion of high-rise residential uses near transit, office, commercial, and entertainment uses results in increased land use diversity for the area. The 794 residential units would represent approximately 0.97 percent of the 82,002 needed units identified in the SCAG Regional Housing Needs Assessment (RHNA) for the 8-year (2014 to 2021) planning period. The Project would provide a range of housing types for all family types including studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units.

Objective 1.3: Forecast and plan for changing housing needs over time in relation to production and preservation needs.

Policy 1.3.5: Provide sufficient land use and density to accommodate an adequate supply of housing units by type and cost within the City to meet the projections of housing needs, according to the policies and objectives of the City's Framework Element of the General Plan.

The Project would concentrate new housing within the Downtown Center consistent with policies and objectives of the Framework Element. The Downtown Center is generally characterized by a floor area ratio up to 13:1 and high-rise buildings. As discussed previously, Development of the Project would support the intent of the Downtown Center designation by providing high-rise residential with neighborhood serving commercial uses that provide housing options near regional transportation facilities, including the Metro Blue Line and Expo Line station at Pico Boulevard, and near job and entertainment opportunities including professional, offices, corporate headquarters, financial institutions, museums, theaters, restaurant, shopping, and other commercial service uses. The provision of residential units at this Downtown location would serve the needs of City residents, would expand the diversity within the designated Downtown Center, and provide housing in close proximity to the aforementioned commercial, retail, entertainment, and restaurant uses. Furthermore, as stated above, the Project would assist the City in meeting its housing needs identified in SCAG's Regional Housing Needs Assessment.

Goal 2: Safe, Livable, and Sustainable Neighborhoods

Objective 2.1: Promote safety and health within neighborhoods.

Policy 2.1.1: Establish development standards and policing practices that reduce the likelihood of crime

Policy 2.1.2: Establish development standards and other measures that promote and implement positive health outcomes.

The Project would promote safety and health within the neighborhood by providing landscaping, streetscaping, new sidewalks, and appropriate lighting along Olive Street and 11th Street. The Project would include neighborhood serving commercial uses easily accessible from the ground-level on Olive Street and 11th Street. The Project would incorporate a security program to ensure the safety of residents and visitors, including controlled access, video surveillance, and security personnel.

The Project would implement Project Design Features to promote positive health outcomes, including compliance with the Los Angeles Green Building Code and 2016 California Green Building Standards (CALGreen) Code, and compliance with USGBC LEED Gold Certification standards. To obtain LEED credits, the Project would use adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of VOCs and/or other air quality pollutants. The Project would also minimize transportation-related emissions by being located within walking distance of major transit centers including the Metro Blue Line and Expo Line station on Pico Boulevard, as well as other off-site office, commercial, and entertainment uses. The Project would enhance the pedestrian space to encourage walking and other non-automotive forms of transportation. In addition, the project would provide up to 886 short-term and long-term bicycle parking spaces to promote bicycling. The Project would place residential uses approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110), which would serve as an adequate buffer distance from these freeways so that potential exposure to freeway-generated air pollutant emissions would not pose an elevated health risk.

Objective 2.3: Promote sustainable buildings, which minimize adverse effects on the environment and minimize the use of non-renewable resources.

Policy 2.3.2: Promote and facilitate the reduction of water consumption in new and existing housing.

Policy 2.3.3: Promote and facilitate reduction of energy consumption in new and existing housing.

Policy 2.3.4: Promote and facilitate reduction of waste in construction and building operations.

The Project would ensure sustainable building design through compliance with the 2016 CALGreen Code, Los Angeles Green Building Code, Los Angeles Building Code, Planning and Zoning Code, and compliance with USGBC LEED Gold Certification standards. Design features of the project would include implementation of heat island reduction strategies, optimization of building energy performance to achieve greater than the minimum 5 percent reduction from the LEED baseline as specified in the LEED required prerequisites, and water efficiency features to reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would provide on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied. Additionally, a

construction and demolition waste management plan will maximize the recycling or salvage of nonhazardous construction debris.

Objective 2.4: Promote livable neighborhoods with a mix of housing types, quality design and a scale and character that respects unique residential neighborhoods in the City.

Policy 2.4.1: Promote preservation of neighborhood character in balance with facilitating new development.

Policy 2.4.2: Develop and implement design standards that promote quality residential development.

As discussed previously, the Project would provide 794 multi-family residential units that would serve a broad section of the housing market, including singles, small families, and empty-nesters as well as larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. The Project would be consistent with the character of the Downtown Center, which is targeted for high-rise residential towers, and major cultural and entertainment facilities, hotels, professional offices, corporate headquarters, financial institutions, regional transportation facilities, and other urban uses. The Project would also be designed consistent with the City's Downtown Design Guide. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment. The Project would also include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site and landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants. The addition of trees, landscaping, and streetscaping would enhance the Project Site and make it more inviting for pedestrian activity.

City Planning Commission – Do Real Planning

Promoting the ideals of inspired, principles land use planning concepts at a citywide level, the Los Angeles City Planning Commission has fostered new visions with its "Do Real Planning." The proposed project fulfills several of these important objectives and goals:

Demand a Walkable City: This concept poses the question of whether a project actively welcomes its own users, its neighbors and its passerby. The Project proposes a walkable concept within the Downtown Center by orienting commercial spaces towards the street frontages along Olive Street and 11th Street. The Project would provide and enhance the street frontages with and landscaping, streetscaping, and new and wider sidewalks along Olive Street and 11th Street, as well as providing 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover on the Project Site. In addition, a public Plaza with streetscaping, landscaping and a public art display. These features would enliven the pedestrian environment and improve the visual character of the Project Site and the Downtown Center area.

Offer Basic Design Standards: The Project would be consistent with the character of the Downtown Center, which is targeted for high-rise residential towers and other major commercial, entertainment, office, financial, and transportation centers. The Project would also be designed consistent with the City's Downtown Design Guide. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment. The parking areas within the Podium would be covered with mesh screening. Residential liner units in the upper Podium levels (5 through 9) would offer a variation in the building appearance that is defined by the horizontal lines of the residential balconies. The design of the Project would be consistent with the overall character of the Downtown Center while also providing an appealing Project Site.

Locate Jobs Near Housing: The Commission observes that "the time for segregating jobs from housing in Los Angeles has passed." The Commission observes that the City has "several stale business boulevards and districts that are ripe for renovation; in these traditionally commercial-only locations, we must include both jobs and housing in the mix." The Project Site is primed for renovation proposed by the Commission insofar as the project would bring needed housing units into the jobs-rich Downtown Center area, along with neighborhood serving commercial uses.

Produce Green Buildings: The Project would comply with the applicable requirements of the 2016 CALGreen Code, the Los Angeles Green Building Code, and compliance with the USGBC LEED Gold Certification standards. Some of the Project's key design features that would contribute to energy efficiency include optimizing building energy performance to achieve greater than the minimum 5 percent reduction from the LEED baseline specified in the LEED required prerequisites and water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would include other specific design features that would be incorporated into the Project design to enhance energy efficiency and sustainability. Wraparound-cantilevered balconies would be provided on every residential level that would provide shade and minimize solar gain throughout the building. Further considerations regarding energy efficiency and sustainability include native plants and drip/subsurface irrigation systems, individual metering or sub metering for water use, leak detection systems, rainwater harvesting and provisions for electric vehicle charging (wiring for 5 percent of all parking spaces and pre-wiring for 20 percent of all parking spaces).

Identify Smart Parking Requirements: The Project would provide parking within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The parking areas within the Podium would be covered with mesh screening, while residential liner units in the upper Podium levels (5 through 9) would offer a variation in the building appearance that is defined by the horizontal lines of the residential balconies. The Project would provide 886 bicycle parking spaces for residents and the commercial uses, with short-term bicycle parking located along the streets.

3. Environmental Leadership Development Project (ELDP) Application, Part 2

Exhibit 1 Project Site Plans

PROJECT INFORMATION

SITE ADDRESS

1033, 1041, 1045, 1053, 1057 S OLIVE ST

LOS ANGELES, CA 90015

OWNER / APPLICANT

1045 OLIVE, LLC

2200 BISCAYNE BLVD

MIAMI, FL 33137

LAND USE CONSULTANT	ARCHITECT
IRVINE & ASSOCIATES, INC.	ODA ARCHITECTURE, LLC
633 W. 5TH ST, SUITE 3200	250 PARK AVENUE SOUTH, 3RD FL
LOS ANGELES, CA 90071	NEW YORK, NY 10003

PROJECT DESCRIPTION

- 70 - STORY HIGH RISE
- 56 STORIES OF RESIDENTIAL FLOORS
- 10 STORIES OF ABOVE GRADE PODIUM, CONSISTING OF:
  - GROUND FLOOR RETAIL, RESIDENTIAL LOBBY AND BACK OF HOUSE
  - MEZZANINE AND 8 FLOORS OF PARKING WITH 5 FLOORS OF LINER UNITS
  - 10TH FLOOR AMENITIES
- 5 ½ LEVELS OF BELOW GRADE PARKING
- 1 MECHANICAL FLOOR AND 3 FLOORS OF AMENITIES FROM LEVEL 52-55

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1: (APN: 5139-010-010)

THAT PORTION OF LOTS 2 AND 3 IN BLOCK 70 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 43 PAGE 74 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

COMMENCING ON THE WEST LINE OF OLIVE STREET AT A POINT DISTANT 100 FEET NORTHERLY FROM THE NORTHWEST CORNER OF OLIVE STREET AND ELEVENTH STREET RUNNING THENCE NORTHERLY ON SAID WEST LINE OF OLIVE STREET 50 FEET; THENCE AT RIGHT ANGLES WESTERLY ON A LINE PARALLEL WITH ELEVENTH STREET 165 FEET AT RIGHT ANGLES SOUTHERLY ON A LINE PARALLEL WITH OLIVE STREET 50 FEET, AND THENCE AT RIGHT ANGLES EASTERLY ON A LINE PARALLEL WITH ELEVENTH STREET 165 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PROPERTY IS SHOWN AS A PORTION OF LOT "A" ON THE MAP OF TRACT NO. 1011, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 18 PAGE 26 OF MAPS.

PARCEL 2: (APN: 5139-010-011)

THE SOUTHEASTERLY 165 FEET OF TRACT NO. 62, , IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 13 PAGE 104 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 3: (APN: 5139-010-001)

THE SOUTHERLY 50 FEET OF LOT 1, IN BLOCK 70 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 43 PAGE 74 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 5139-010-002

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PART OF LOTS 3 AND 4 IN BOOK 70 OF THE SUBDIVISION OF BLOCKS 62, 70, AND 78 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 43 PAGE 74 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

BEGINNING AT A POINT IN THE NORTHWESTERLY LINE OF OLIVE STREET, DISTANT 150 FEET NORTHEASTERLY FROM ITS INTERSECTION, WITH THE NORTHEASTERLY LINE OF ELEVENTH STREET; THENCE NORTHWESTERLY AT RIGHT ANGLES TO A POINT WHICH WOULD BE INTERSECTED BY THE SOUTHWESTERLY PROLONGATION OF THE NORTHWESTERLY LINE OF LOT 4 OF HAYWARD'S SUBDIVISION, AS PER MAP RECORDED IN BOOK J PAGE 33 OF LAP, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, THENCE NORTHEASTERLY 50 FEET MORE OR LESS, TO THE WESTERLY CORNER OF SAID LOT 4 OF HAYWARD'S SUBDIVISION; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE THEREOF, 167.30 FEET TO THE NORTHWESTERLY LINE OF OLIVE STREET; THENCE SOUTHWESTERLY ALONG SAID LINE OF OLIVE STREET, 50 FEET TO THE POINT OF BEGINNING.

APN: 5139-010-008

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

LOT 4 OF HAYWARD'S SUBDIVISION OF PART OF BLOCK 70 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 1 PAGE 33 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT THEREFROM ALL OIL, GAS, MINERALS, HYDROCARBON SUBSTANCES AND ALL ASSOCIATED SUBSTANCES IN AND UNDER SAID LAND BELLOW A DEPTH OF 100 FEET FROM THE SURFACE OF SAID LAND, WITHOUT ANY RIGHT OF SURFACE ENTRY OR SUBSURFACE ENTRY TO A DEPTH OF 100 FEET TO DEVELOP OR PRODUCE THE SUBSTANCE IS HEREBY RESERVED, AS EXCEPTED AND RESERVED IN THE DEED FROM CHARLES H. ENDY, A MARRIED MAN AS HIS SEPARATE PROPERTY AS TO AN UNDIVIDED ONE-HALF INTEREST, AND PAUL S. ENDY JR., A MARRIED MAN AS HIS SEPARATE PROPERTY AS TO AN UNDIVIDED ONE-HALF INTEREST, RECORDED MAY 16, 1973.

ZONE

ZONING:	[Q]R5-4D-O
COMMUNITY PLAN AREA:	CENTRAL CITY COMMUNITY PLAN
EXISTING PLAN DESIGNATION:	HIGH DENSITY RESIDENTIAL
COMMUNITY REDEVELOPMENT AREA:	CITY CENTER REDEVELOPMENT PLAN

LOT AREA

Post-dedication Lot Area	37,172 sq ft
Pre-dedication Lot Area	41,603 sq ft
Area gained from streets to center line	16,226 sq ft
Transit Area Mixed Use Buildable Area = Gross Lot Area (to Centerline)	57,829 sq ft

FLOOR AREA

	Permitted	**Project Site**	
Total Base Permitted (6:1 FAR)**		249,618 sq ft	
Transit Area Mixed Use Permitted (13:1 FAR) ***		751,777 sq ft	
	Proposed*	**Zoning Area**	
Residential		739,273 sq ft	
Commercial		12,504 sq ft	
Total New Floor Area (13:1 FAR)* **		**751,777 sq ft**	*Proposed numbers are maximums
Base area Permitted (6:1 FAR)**		249,618 sq ft	**based on the pre-dedicated area
TFAR Request* **		**502,159 sq ft**	*** Transit Area Mixed-use Project lot area dictates the maximum FAR requested

*** All non-interior common open space excluded from LAMC Sec. 12.03 floor area definition

*** All included floor area as depicted on sheets A-006 & A-007

DENSITY

Permitted	Unlimited	
Proposed	794	Units

HEIGHT

Permitted	Unlimited	
Proposed (to roof)	770	ft

OPEN SPACE

Required (New Units Only)	**Units**	**Open Space**	
< 3 Habitable rooms (100 SF/Unit)	478	47,800	sq ft
= 3 Habitable rooms (125 SF/Unit)	220	27,500	sq ft
> 3 Habitable rooms (175 SF/Unit)	96	16,800	sq ft
Total	794	**92,100**	**sq ft**

Proposed			
Common OS (Exterior)	37,927	sq ft	
Common OS (Interior)	23,025	sq ft	25% of required open space
Total Common	**60,952**	**sq ft**	
Private Balcony	39,700	sq ft	100% of units; max 50 sq ft per unit
Total Proposed	**100,652**	**sq ft**	

*** All credited open space as depicted on sheet A-005 included

Landscaped Area			
Required	9,482	sq ft	25% of exterior common open space
Proposed	**11,290**	**sq ft**	

Trees		
Required	199	(1 per 4 dwelling units)
Proposed	539	

AUTOMOBILE PARKING

Advisory Agency Parking Policy (Condos)	**Units**	**Ratio**	**Required**	
Residence	794	2	1588	Spaces
Guest	794	0.25	199	Spaces
Total Residential			**1787**	**Spaces**

Central City Residential Parking Required	**Units**	**Ratio**	**Required**	
≤ 3 Habitable rooms (100 SF/Unit)	478	1	478	Spaces
> 3 Habitable rooms (175 SF/Unit)	316	1.25	395	Spaces
Total Residential			**873**	**Spaces**

Commercial Parking Required	**Area**	**Ratio**	**Required**	
New Building	12,504	1 per 1,000 sq ft	**13**	Spaces
Total Parking Required			**886**	**Spaces**

Proposed Parking		
Residential	878	Spaces
Commercial	13	Spaces
Total Proposed	**891**	**Spaces**

Type of Stalls	
Handicap (2% of Total)	18
Standard	873
Compact Stall	-
Total	**891**

BICYCLE PARKING

Required	**Short Term**	**Long Term**	**Total**
Residential	1 per 10 units	1 per unit	
	79	794	873
Commercial	1 per 2,000 sq ft	1 per 2,0000 sq ft	
	6	6	12

Proposed	**Short Term**	**Long Term**	**Total**
Residential	80	794	874
Commercial	6	6	12
Combined Total	**86**	**800**	**886**

UNIT MIX

	LEVELS 5-9		LEVELS 11-20		LEVELS 21-51		LEVELS 56-60		LEVELS 61-70		TOTAL
	# of Floors	5	# of Floors	10	# of Floors	31	# of Floors	5	# of Floors	10	
Unit Type	Units/Floor	Total Units	Units/Floor	Total Units	Units/Floor	Total Units	Units/Floor	Total Units	Units/Floor	Total Units	
LINER	8	40									40
STUDIO			4	40	2	62	2	10			112
JUNIOR 1BR			7	70	2	62	2	10			142
1BR			4	40	4	124	4	20			184
1BR+D					1	31	1	5			36
2BR			2	20	4	124	4	20	2	20	184
2BR+D					1	31	1	5	2	20	56
3BR									4	40	40

TOTAL	794

PROPOSED PARKING

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
BASEMENT 6	50	5	55
BASEMENT 5	72	10	82
BASEMENT 4	72	10	82
BASEMENT 3	72	10	82
BASEMENT 2	72	10	82
BASEMENT 1	45	8	53
SUBTOTAL BELOW GRADE	**383**	**53**	**436**
LEVEL 2	57	8	65
LEVEL 3	60	8	68
LEVEL 4	60	8	68
LEVEL 5	60		60
LEVEL 6	60		60
LEVEL 7	60		60
LEVEL 8	49		49
LEVEL 9	25		25
SUBTOTAL ABOVE GRADE	**431**	**24**	**455**
TOTAL PROPOSED	**814**	**77**	**891**

NEW YORK
250 Park Ave South 3rd Floor
New York, New York 10003
646-478-7455

NO.	DATE	REVISION
	08/07/2017	ENTITLEMENT SUBMISSION

OWNER / APPLICANT

1045 OLIVE, LLC
2200 BISCAYNE BLVD
MIAMI, FL 33137

CONSULTANTS

LANDSCAPE ARCHITECT:
ODA Architecture P.C.
250 Park Avenue South 3rd Fl
New York, NY 10003
T. (646) 478-7455

STRUCTURAL ENGINEER:
MAGNUSSON KLEMENCIC ASSOCIATES
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MEP ENGINEER:
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ELEVATOR CONSULTANT:
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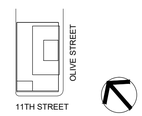
LAND USE CONSULTANT:
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LAND USE COUNSEL:
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T. (213) 694-3115

TRAFFIC ENGINEER:
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18301 Von Karman, Suite 490
Irvine CA 91612
T. (949) 474-1591

KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE:

PROJECT INFORMATION

A-001



NEW YORK
250 Park Ave South 3rd Floor
New York, New York 10003
646-478-7455

NO.	DATE	REVISION
	08/07/2017	ENTITLEMENT SUBMISSION

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2200 BISCAYNE BLVD
MIAMI, FL 33137

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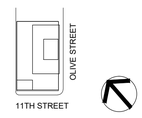
LAND USE CONSULTANT:
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T. (213) 694-3107

LAND USE COUNSEL:
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T. (949) 474-1591

KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

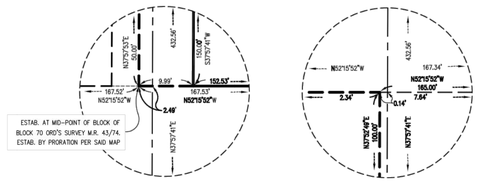
NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

PLOT PLAN

A-002

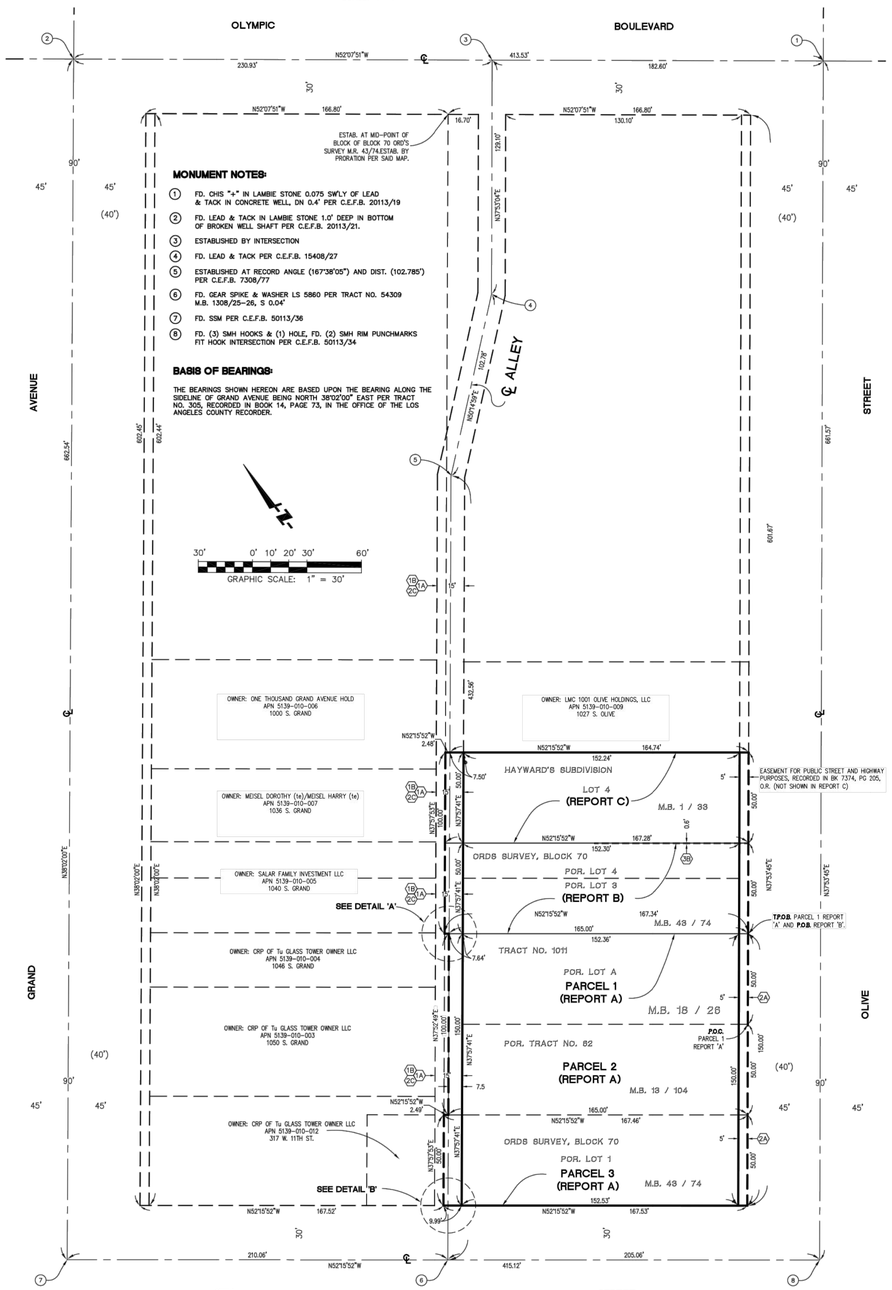
ALTA/ACSM LAND TITLE SURVEY



ESTAB. AT MID-POINT OF BLOCK 70 ORD'S SURVEY M.R. 43/74. ESTAB. BY PRORATION PER SAID MAP

DETAIL 'B'
SCALE: 1"=10'

DETAIL 'A'
SCALE: 1"=1'



BOUNDARY ANALYSIS
SCALE: 1" = 50'

⚠1 OWNERS:

THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS: **A FEE**

TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

REPORT A: 00023367, DATED AS OF JANUARY 14, 2015

1045 OLIVE, LLC, A DELAWARE LIMITED LIABILITY COMPANY

REPORT B: 00026831, DATED AS OF MAY 12, 2015

1045 OLIVE, LLC, A DELAWARE LIMITED LIABILITY COMPANY

REPORT C: 00045265, DATED AS DECEMBER 10, 2015

⚠2 1045 OLIVE, LLC, A DELAWARE LIMITED LIABILITY COMPANY

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

REPORT A: 00023367

PARCEL 1:

THAT PORTION OF LOTS 2 AND 3 IN BLOCK 70 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 43 PAGE 74 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

COMMENCING ON THE WEST LINE OF OLIVE STREET AT A POINT DISTANT 100 FEET NORTHERLY FROM THE NORTHWEST CORNER OF OLIVE STREET AND ELEVENTH STREET RUNNING THENCE NORTHERLY ON SAID WEST LINE OF OLIVE STREET 50 FEET; THENCE AT RIGHT ANGLES WESTERLY ON A LINE PARALLEL WITH ELEVENTH STREET 165 FEET AT RIGHT ANGLES SOUTHERLY ON A LINE PARALLEL WITH OLIVE STREET 50 FEET; AND THENCE AT RIGHT ANGLES EASTERLY ON A LINE PARALLEL WITH ELEVENTH STREET 165 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PROPERTY IS SHOWN AS A PORTION OF LOT "A" ON THE MAP OF TRACT NO. 1011, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 18 PAGE 28 OF MAPS.

(APN: 5139-010-010)

PARCEL 2:

THE SOUTHEASTERLY 165 FEET OF TRACT NO. 62, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 13 PAGE 104 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

(APN: 5139-010-011)

PARCEL 3:

THE SOUTHERLY 50 FEET OF LOT 1, IN BLOCK 70 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 43 PAGE 74 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

(APN: 5139-010-001)

REPORT B: 00026831

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF LOS ANGELES, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PART OF LOTS 3 AND 4 IN BOOK 70 OF THE SUBDIVISION OF BLOCKS 62, 70 AND 78 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 43 PAGE 74 OF MISCELLANEOUS RECORDS. IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

BEGINNING AT A POINT IN THE NORTHWESTERLY LINE OF OLIVE STREET, DISTANT 150 FEET NORTHEASTERLY FROM ITS INTERSECTION, WITH THE NORTHEASTERLY LINE OF ELEVENTH STREET; THENCE NORTHWESTERLY AT RIGHT ANGLES TO A POINT WHICH WOULD BE INTERSECTED BY THE SOUTHWESTERLY PROLONGATION OF THE NORTHWESTERLY LINE OF LOT 4 OF HAYWARD'S SUBDIVISION, AS PER MAP RECORDED IN BOOK 1 PAGE 33 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE NORTHEASTERLY 50 FEET MORE OR LESS, TO THE WESTERLY CORNER OF SAID LOT 4 OF HAYWARD'S SUBDIVISION; THENCE SOUTHEASTERLY ALONG THE SOUTHWESTERLY LINE THEREOF, 167.30 FEET TO THE NORTHWESTERLY LINE OF OLIVE STREET; THENCE SOUTHWESTERLY ALONG SAID LINE OF OLIVE STREET, 50 FEET TO THE POINT OF BEGINNING.

APN: 5139-010-002

REPORT C: 00045265

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF LOS ANGELES, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

LOT 4 OF HAYWARD'S SUBDIVISION OF PART OF BLOCK 70 OF ORD'S SURVEY, IN THE CITY OF LOS ANGELES, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 1, PAGE 33 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT THEREFROM ALL OIL, GAS, MINERALS, HYDROCARBON SUBSTANCES AND ALL ASSOCIATED SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 100 FEET FROM THE SURFACE OF SAID LAND, WITHOUT ANY RIGHT OF SURFACE ENTRY OR SUBSURFACE ENTRY TO A DEPTH OF 100 FEET TO DEVELOP OR PRODUCE THE SUBSTANCES HEREBY RESERVED, AS EXCEPTED AND RESERVED IN THE DEED FROM CHARLES H. ENDY, A MARRIED MAN AS HIS SEPARATE PROPERTY AS TO AN UNDIVIDED ONE-HALF INTEREST, AND PAUL S. ENDY, JR., A MARRIED MAN AS HIS SEPARATE PROPERTY AS TO AN UNDIVIDED ONE-HALF INTEREST, RECORDED MAY 16, 1973.

⚠1 TITLE REPORT:

BOUNDARY AND EASEMENTS SHOWN HEREON ARE PER THE FOLLOWING TITLE REPORTS:

A) **REPORT A:** CHICAGO TITLE COMPANY NO. 00023367, DATED AS OF DECEMBER 8, 2014.

B) **REPORT B:** CHICAGO TITLE COMPANY NO. 00026831, DATED AS OF MAY 12, 2015.

B) **REPORT C:** CHICAGO TITLE COMPANY NO. 00045265, DATED AS OF OCTOBER 1, 2015.

THE ITEMS REFERRED TO BELOW ARE EXCEPTIONS TO COVERAGE AS CITED IN SCHEDULE B OF SAID REPORT.

REPORT A: NO. 00023367

1A. AN EASEMENT AFFECTING THE PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN, AND INCIDENTAL PURPOSES, CONDEMNED BY FINAL DECREE.
PURPOSE: PUBLIC ALLEY
CASE NO.: 158500
RECORDED: MAY 3, 1927 IN BOOK 6696 PAGE 46, OF OFFICIAL RECORDS
AFFECTS: THAT PORTION OF SAID LAND AS DESCRIBED IN THE DOCUMENT ATTACHED HERETO.

2A. AN EASEMENT AFFECTING THE PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN, AND INCIDENTAL PURPOSES, CONDEMNED BY FINAL DECREE.
PURPOSE: STREET
CASE NO.: 175836
RECORDED: JANUARY 11, 1929 IN BOOK 7374 PAGE 205, OF OFFICIAL RECORDS
AFFECTS: THAT PORTION OF SAID LAND AS DESCRIBED IN THE DOCUMENT

3A. AN OIL AND GAS LEASE FOR THE TERM THEREIN PROVIDED WITH CERTAIN COVENANTS, CONDITIONS AND PROVISIONS, TOGETHER WITH EASEMENTS, IF ANY AS SET FORTH THEREIN.
LESSOR: ACME DISPLAY FIXTURE COMPANY
LESSEE: STANDARD OIL COMPANY OF CALIFORNIA, A CORPORATION
RECORDED: APRIL 15, 1964 AS INSTRUMENT NO. 5458, OF OFFICIAL RECORDS
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.
AFFECTS THAT PORTION OF SAID LAND LYING BELOW A DEPTH OF 500 FEET FROM THE SURFACE THEREOF, WITHOUT THE RIGHT TO ENTER UPON OR USE ANY PORTION OF SAID LAND LYING ABOVE SAID DEPTH.
NO ASSURANCE IS MADE AS TO THE PRESENT OWNERSHIP OF THE LEASEHOLD CREATED BY SAID LEASE, NOR AS TO OTHER MATTERS AFFECTING THE RIGHTS OR INTERESTS OF THE LESSOR OR LESSEE IN SAID LEASE.
AFFECTS: PARCEL 2

NOTE: SEE SHEET 2 FOR TOPOGRAPHIC MAP, LAND AREA, USE ZONE, AND FLOOD HAZARD.

TITLE REPORT (CONTINUED):

4A. AN OIL AND GAS LEASE FOR THE TERM THEREIN PROVIDED WITH CERTAIN COVENANTS, CONDITIONS AND PROVISIONS, TOGETHER WITH EASEMENTS, IF ANY AS SET FORTH THEREIN.
LESSOR: GROVER T. GARLAND, A MARRIED MAN AS HIS SEPARATE PROPERTY
LESSEE: STANDARD OIL COMPANY OF CALIFORNIA
RECORDED: JUNE 25, 1965 IN BOOK M-1901 PAGE 867, OF OFFICIAL RECORDS
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.
AFFECTS THAT PORTION OF SAID LAND LYING BELOW A DEPTH OF 500 FEET FROM THE SURFACE THEREOF, WITHOUT THE RIGHT TO ENTER UPON OR USE ANY PORTION OF SAID LAND LYING ABOVE SAID DEPTH.
NO ASSURANCE IS MADE AS TO THE PRESENT OWNERSHIP OF THE LEASEHOLD CREATED BY SAID LEASE, NOR AS TO OTHER MATTERS AFFECTING THE RIGHTS OR INTERESTS OF THE LESSOR OR LESSEE IN SAID LEASE.
AFFECTS: PARCEL 3

5A. AN OIL AND GAS LEASE FOR THE TERM THEREIN PROVIDED WITH CERTAIN COVENANTS, CONDITIONS AND PROVISIONS, TOGETHER WITH EASEMENTS, IF ANY AS SET FORTH THEREIN.
LESSOR: RALPH M. SPROWLS, STEPHEN C. TURNER, MARY T. PALMER AND ALVA B. TURNER
LESSEE: STANDARD OIL COMPANY OF CALIFORNIA, A CORPORATION
RECORDED: JULY 2, 1965 IN BOOK M1909 PAGE 59, OF OFFICIAL RECORDS
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.
AN AGREEMENT TO MODIFY CERTAIN PROVISIONS OF SAID LEASE, AS SET FORTH IN THE DOCUMENT
RECORDED: MARCH 7, 1967 AS INSTRUMENT NO. 1796, OF OFFICIAL RECORDS.
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.
AFFECTS THAT PORTION OF SAID LAND LYING BELOW A DEPTH OF 500 FEET FROM THE SURFACE THEREOF, WITHOUT THE RIGHT TO ENTER UPON OR USE ANY PORTION OF SAID LAND LYING ABOVE SAID DEPTH.
NO ASSURANCE IS MADE AS TO THE PRESENT OWNERSHIP OF THE LEASEHOLD CREATED BY SAID LEASE, NOR AS TO OTHER MATTERS AFFECTING THE RIGHTS OR INTERESTS OF THE LESSOR OR LESSEE IN SAID LEASE.
AFFECTS: PARCEL 1

6A. THE FACT THAT SAID LAND IS INCLUDED WITHIN THE CENTRAL DISTRICT BUSINESS DISTRICT REDEVELOPMENT PROJECT AREA, AND THAT PROCEEDINGS FOR REDEVELOPMENT HAVE BEEN INSTITUTED.
RECORDED: JULY 22, 1975 AS INSTRUMENT NO. 3675, OF OFFICIAL RECORDS, AND
RE-RECORDED: JULY 30, 1975 AS INSTRUMENT NO. 3868 OF OFFICIAL RECORDS

7A. A DOCUMENT SUBJECT TO ALL THE TERMS, PROVISIONS AND CONDITIONS THEREIN CONTAINED.
ENTITLED: NOTICE OF BUILDINGS WITHIN THE SCOPE OF DIVISION 88 – EARTHQUAKE HAZARD REDUCTION IN EXISTING BUILDINGS
RECORDED: AUGUST 14, 1986 AS INSTRUMENT NO. 86-1053976, OF OFFICIAL RECORDS
AFFECTS: PARCEL 2

8A. A COVENANT AND AGREEMENT WHEREIN THE OWNERS OF SAID LAND COVENANT AND AGREE THAT SAID LAND SHALL BE HELD AS ONE PARCEL AND NO PORTION SHALL BE SOLD SEPARATELY, WHICH COVENANT IS EXPRESSED TO RUN WITH THE LAND AND BE BINDING UPON FUTURE OWNERS.
RECORDED: OCTOBER 3, 1989 AS INSTRUMENT NO. 89-1594800, OF OFFICIAL RECORDS
AFFECTS: PARCELS 2 AND 3

9A. A DEED OF TRUST

10A. A COVENANT AND AGREEMENT UPON AND SUBJECT TO THE TERMS AND CONDITIONS THEREIN
RECORDED: MAY 17, 2001 AS INSTRUMENT NO. 01-0850225, OF OFFICIAL RECORDS
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.
THIS COVENANT AND AGREEMENT SHALL RUN WITH THE LAND AND SHALL BE BINDING UPON ANY FUTURE OWNERS, ENCUMBRANCES, THEIR SUCCESSORS, HEIRS OR ASSIGNS AND SHALL CONTINUE IN EFFECT UNTIL THE PROPER GOVERNMENT AGENCY APPROVES ITS TERMINATION.
AFFECTS: PARCELS 1 AND 2

11A. INTENTIONALLY DELETED

12A. INTENTIONALLY DELETED

13A. INTENTIONALLY DELETED

14A. INTENTIONALLY DELETED

15A. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

16A. ANY FACTS, RIGHTS, INTERESTS, OR CLAIMS WHICH MAY EXIST OR ARISE BY REASON OF A SURVEY, JOB NO. 1382.001.01, DATED JANUARY 8, 2015, PREPARED BY JERRY L. USELTON, LS NO. 5347 FOR FUSCOE ENGINEERING.

17A. THE TENANCY RIGHTS ONLY OF ACME DISPLAY FIXTURE CO., UNDER AN UNRECORDED LEASE AGREEMENT BETWEEN 1045 OLIVE, LLC, AS LESSOR, AND ACME DISPLAY FIXTURE COL, AS LESSEE, DATED JANUARY 14, 2015.

18A. A DOCUMENT SUBJECT TO ALL THE TERMS, PROVISIONS AND CONDITIONS THEREIN CONTAINED.
ENTITLED: RECIPROCAL TEMPORARY LICENSE AGREEMENT
RECORDED: DECEMBER 16, 2014 AS INSTRUMENT NO. 20141368065, OF OFFICIAL RECORDS.

REPORT B: NO. 00026831

1B. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT:
PURPOSE: ALLEY
RECORDED: IN BOOK 6696, PAGE(S) 46, OFFICIAL RECORDS
AFFECTS: THAT PORTION OF SAID LAND AS DESCRIBED IN THE DOCUMENT ATTACHED HERETO

2B. INTENTIONALLY DELETED

3B. THE EFFECT OF A PARTY WALL AGREEMENT AFFECTING THE SOUTHWESTERLY 0.43 FEET OF THE NORTHWESTERLY 85 FEET OF THE PROPERTY HEREIN DESCRIBED, BY AND BETWEEN TITLE INSURANCE AND TRUST COMPANY, AND KATHERINE B. GRAVES, WILLIAM P. BANNING, JOSEPH B. BANNING, JR. AND ALICE M. MORSE BANNING, HIS WIFE, AND CITIZENS NATIONAL TRUST AND SAVINGS BANK OF LOS ANGELES, AS TRUSTEE,
RECORDING DATE: APRIL 10, 1939
RECORDING NO: IN BOOK 16519 PAGE 185 OF OFFICIAL RECORDS
AFFECTS: THAT PORTION OF SAID LAND AS DESCRIBED IN THE DOCUMENT ATTACHED HERETO

4B. THE LAND DESCRIBED HEREIN IS INCLUDED WITHIN A PROJECT AREA OF THE REDEVELOPMENT AGENCY SHOWN BELOW, AND THAT PROCEEDINGS FOR THE REDEVELOPMENT OF SAID PROJECT HAVE BEEN INSTITUTED UNDER THE REDEVELOPMENT LAW (SUCH REDEVELOPMENT TO PROCEED ONLY AFTER THE ADOPTION OF THE REDEVELOPMENT PLAN) AS DISCLOSED BY A DOCUMENT.
REDEVELOPMENT AGENCY: CENTRAL BUSINESS DISTRICT REDEVELOPMENT AGENCY
RECORDING DATE: JULY 22, 1975
RECORDING NO: 3675 AND
RECORDING DATE: JULY 30, 1975
RECORDING NO: 3868, BOTH OF OFFICIAL RECORDS

5B. INTENTIONALLY DELETED

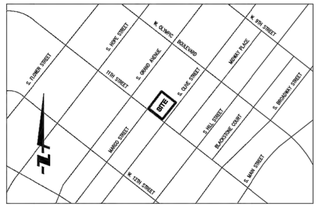
6B. INTENTIONALLY DELETED

7B. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

8B. ANY FACTS, RIGHTS, INTERESTS, OR CLAIMS WHICH MAY EXIST OR ARISE BY REASON OF A SURVEY, JOB NO. 1382.002.01, DATED FEBRUARY 6, 2015, PREPARED BY JERRY L. USELTON, LS NO. 5347 FOR FUSCOE ENGINEERING.

9B. LICENSE RIGHTS OF EDNA Y. CHANIN, AS TRUSTEE OF THE EDNA Y. CHAKIN FAMILY TRUST DATED DECEMBER 6, 1975 ("SELLER"), UNDER SECTION 2.13 OF AGREEEMENT FOR PURCHASE AND SALE OF REAL ESTATE AND ESCROW INSTRUCTIONS BETWEEN SELLER AND CH ACQUISITIONS 2, LLC, DATED JANUARY 23, 2015, AS ASSIGNED TO 1045 OLIVE, LLC, AND AS MODIFIED BY AMENDMENT DATED MAY 8, 2015.

10B. INTENTIONALLY DELETED.



VICINITY MAP
N.T.S.

TITLE REPORT (CONTINUED):

REPORT C: NO. 00045265

1C. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

2C. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS CONDEMNED BY AN INSTRUMENT,
COURT: SUPERIOR COURT
CASE NO.: 158500
PURPOSE: ALLEY
RECORDING DATE: IN BOOK 6696 PAGE 46 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF SAID LAND
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.

3C. AN OIL AND GAS LEASE FOR THE TERM THEREIN PROVIDED WITH CERTAIN COVENANTS, CONDITIONS AND PROVISIONS, TOGETHER WITH EASEMENTS, IF ANY, AS SET FORTH THEREIN.
DATED: APRIL 24, 1968
LESSOR: PAUL S. ENDY, SR.
LESSEE: STANDARD OIL COMPANY OF CALIFORNIA, A CORPORATION
RECORDING DATE: MAY 6, 1968
RECORDING NO: 2955 OF OFFICIAL RECORDS
NO ASSURANCE IS MADE AS TO THE PRESENT OWNERSHIP OF THE LEASEHOLD CREATED BY SAID LEASE, NOR AS TO OTHER MATTERS AFFECTING THE RIGHTS OR INTERESTS OF THE LESSOR OR LESSEE IN SAID LEASE.
SAID LEASE AFFECTS THAT PORTION OF SAID LAND LYING BELOW A DEPTH OF 500 FEET FROM THE SURFACE THEREOF.
SAID LEASE PROVIDES FOR NO RIGHT OF SURFACE ENTRY.

4C. THE LAND DESCRIBED HEREIN IS INCLUDED WITHIN A PROJECT AREA OF THE REDEVELOPMENT AGENCY SHOWN BELOW, AND THAT PROCEEDINGS FOR THE REDEVELOPMENT OF SAID PROJECT HAVE BEEN INSTITUTED UNDER THE REDEVELOPMENT LAW (SUCH REDEVELOPMENT TO PROCEED ONLY AFTER THE ADOPTION OF THE REDEVELOPMENT PLAN) AS DISCLOSED BY A DOCUMENT.
REDEVELOPMENT AGENCY: CENTRAL BUSINESS DISTRICT REDEVELOPMENT PROJECT AREA
RECORDING DATE: JULY 22, 1975
RECORDING NO: 3675 OF OFFICIAL RECORDS
AN AGREEMENT TO MODIFY THE TERMS AND PROVISIONS OF THE SAID DOCUMENT, AS THEREIN PROVIDED
RECORDING DATE: JULY 30, 1975
RECORDING NO: 3868 OF OFFICIAL RECORDS
AN AGREEMENT TO MODIFY THE TERMS AND PROVISIONS OF THE SAID DOCUMENT, AS THEREIN PROVIDED
RECORDING DATE: NOVEMBER 30, 2007
RECORDING NO: 20072636449 OF OFFICIAL RECORDS

5C. INTENTIONALLY DELETED.

6C. ANY INVALIDITY OR DEFECT IN THE TITLE OF THE VESTEES IN THE EVENT THAT THE TRUST REFERRED TO HEREIN IS INVALID OR FAILS TO GRANT SUFFICIENT POWERS TO THE TRUSTEE(S) OR IN THE EVENT THERE IS A LACK OF COMPLIANCE WITH THE TERMS AND PROVISIONS OF THE TRUST INSTRUMENT.
IF TITLE IS TO BE INSURED IN THE TRUSTEE(S) OF A TRUST, (OR IF THEIR ACT IS TO BE INSURED), THIS COMPANY WILL REQUIRE A TRUST CERTIFICATION PURSUANT TO CALIFORNIA PROBATE CODE SECTION 18100.5.
THE COMPANY RESERVES THE RIGHT TO ADD ADDITIONAL ITEMS OR MAKE FURTHER REQUIREMENTS AFTER REVIEW OF THE REQUESTED DOCUMENTATION.

7C. MATTERS WHICH MAY BE DISCLOSED BY AN INSPECTION AND/OR BY A CORRECT ALTA/ACSM LAND TITLE SURVEY OF SAID LAND THAT IS SATISFACTORY TO THE COMPANY, AND/OR BY INQUIRY OF THE PARTIES IN POSSESSION THEREOF.

8C. ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS.
THE COMPANY WILL REQUIRE, FOR REVIEW, A FULL AND COMPLETE COPY OF ANY UNRECORDED AGREEMENT, CONTRACT, LICENSE AND/OR LEASE, TOGETHER WITH ALL SUPPLEMENTS, ASSIGNMENTS AND AMENDMENTS THERETO, BEFORE ISSUING ANY POLICY OF TITLE INSURANCE WITHOUT EXCEPTING THIS ITEM FROM COVERAGE.
THE COMPANY RESERVES THE RIGHT TO EXCEPT ADDITIONAL ITEMS AND/OR MAKE ADDITIONAL REQUIREMENTS AFTER REVIEWING SAID DOCUMENTS.

9C. MATTERS CONTAINED IN THAT CERTAIN DOCUMENT
ENTITLED: MEMORANDUM OF AGREEMENT
RECORDING DATE: DECEMBER 23, 2015
RECORDING NO: 20151617727
REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.

SURVEYOR'S NOTE:

THERE ARE NO GAPS, GORES, HIATUSES OR OVERLAPS BETWEEN PARCELS 1, 2, AND 3.

SURVEYOR'S CERTIFICATE:

TO: CH ACQUISITIONS 2, LLC, 1045 OLIVE, LLC, AND CHICAGO TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 6(a), 7(a), 7(b)(1), 8, 11(a), 13, 14, 16, AND 21 ($2,000,000.00) OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 26, 2014.

DATE OF PLAT OR MAP: JANUARY 8, 2015.

PREPARED BY ME OR UNDER MY DIRECTION:

3/03/2016
JERRY L. USELTON, L.S. 5347

LICENSED LAND SURVEYOR JERRY L. USELTON LS 5347 STATE OF CALIFORNIA

NO.	DATE	REVISION
1	1/11/16	UPDATED REPORTS A, B, C, AND OWNERS NOTE
2	7/13/17	UPDATED OWNERS TO REFLECT OWNERSHIP CHANGE PER DOCUMENT
		RECORDED ON 3/02/16, AS INST NO. 20160225963, O.R.

ALTA/ACSM LAND TITLE SURVEY

of: **11TH & SOUTH OLIVE STREET LOS ANGELES COUNTY, CALIFORNIA**

for: **CH ACQUISITIONS 2, LLC 2200 BISCAYNE BOULEVARD MIAMI, FL 33137**

FUSCOE ENGINEERING
16795 Von Karman, Suite 100
Irvine, California 92606
tel 949.474.1960 ▪ fax 949.474.5315
www.fuscoe.com

DATE: FEBRUARY 6, 2015
SCALE: 1"=50'
FN: 1382-003 ALTA3.dwg
JN: 1382.003.01
DRAWN BY: RJL
CHECKED BY: JLU
SHEET 1 OF 2

ODA NEW YORK
250 Park Ave South 3rd Floor
New York, New York 10003
646-478-7455

NO.	DATE	REVISION
	08/07/2017	ENTITLEMENT SUBMISSION

OWNER / APPLICANT

1045 OLIVE, LLC
2200 BISCAYNE BLVD
MIAMI, FL 33137

CONSULTANTS

LANDSCAPE ARCHITECT:
ODA Architecture P.C.
250 Park Avenue South 3rd Fl
New York, NY 10003
T. (646) 478-7455

STRUCTURAL ENGINEER:
MAGNUSSON KLEMENCIC ASSOCIATES
1301 Fifth Avenue Suite 3200
Seattle, WA 98101-2699
T. (206) 292-1200

MEP ENGINEER:
CB ENGINEERS
449 10th Street
San Francisco, CA 94103
T. (415) 437-7330

ELEVATOR CONSULTANT:
GVK ELEVATOR CONSULTING SERVICES Inc
50 California Street Suite 3510
San Francisco, CA 94111
T. (415) 412-5232

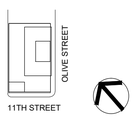
LAND USE CONSULTANT:
IRVINE & ASSOCIATES Inc.
633 West 5th St, Suite #3200
Los Angeles, CA 90071
T. (213) 694-3107

LAND USE COUNSEL:
LINER LLP
633 West 5th St, Suite #3200
Los Angeles, CA 90071
T. (213) 694-3115

TRAFFIC ENGINEER:
THE MOBILITY GROUP
18301 Von Karman, Suite 490
Irvine CA 91612
T. (949) 474-1591

KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

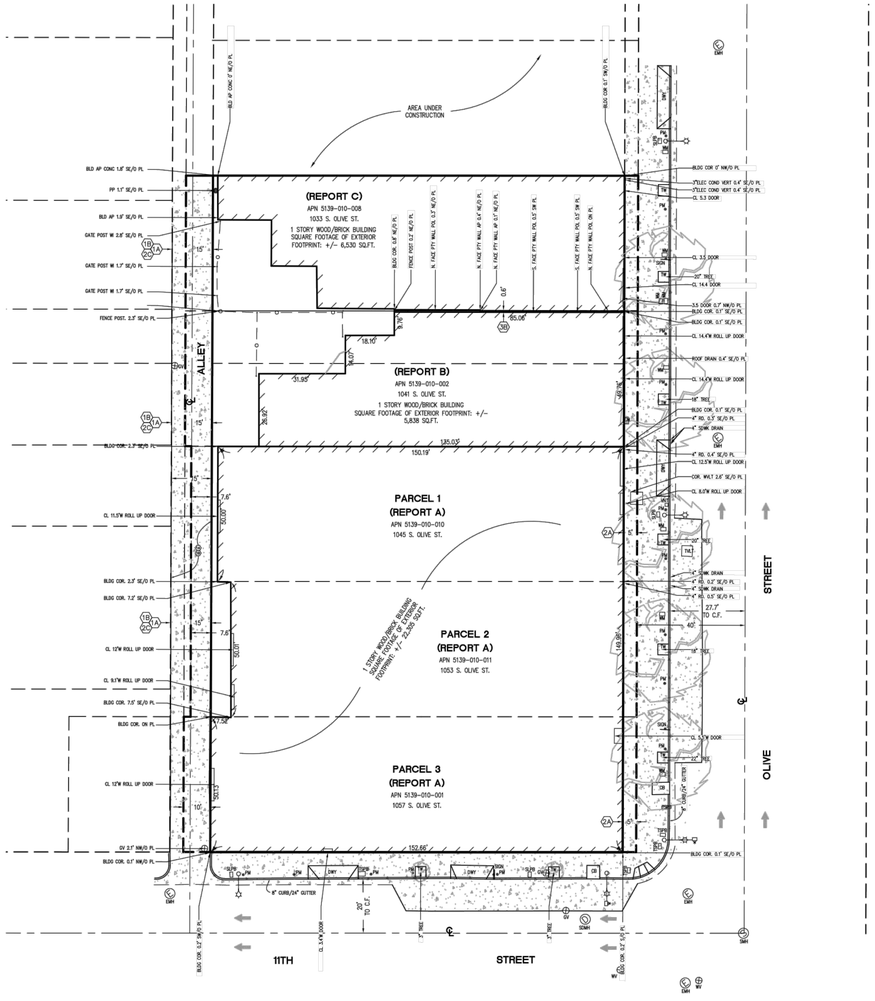
NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE:

SITE SURVEY

A-003

ALTA/ACSM LAND TITLE SURVEY



LEGEND:

BLDG	BUILDING
CB	CATCH BASIN
C.F.	CURB FACE
CL	CENTERLINE
COR.	CORNER
DWY	DRIVEWAY
EMH	ELECTRICAL MANHOLE
GM	GAS METER
GV	GAS VALVE
PL	PROPERTY LINE
POL	POINT ON LINE
PM	PARKING METER
PTY WALL	PARTY WALL
RD.	ROOF DRAIN
SDMH	STORM DRAIN MANHOLE
SDMK	SIDEWALK
SLPB	STREET LIGHT PULL BOX
SMH	SEWER MANHOLE
TSPB	TRAFFIC SIGNAL PULL BOX
TVLT	TELEPHONE VAULT
TW	TREE WELL
VNT	VENT
WM	WATER METER
WV	WATER VALVE
WVLT	WATER VAULT

DENOTES PLOTTED EASEMENT

TRAFFIC SIGNAL

STREET LIGHT

TRAFFIC FLOW

BUILDING LINE

PROPERTY LINE

CENTERLINE

RIGHT OF WAY

LOT LINES

FLOOD HAZARD ZONE:

SAID PROPERTY IS NOT INCLUDED IN A FLOOD HAZARD AREA AS DESIGNATED BY THE FEDERAL INSURANCE ADMINISTRATION.

THE FLOOD ZONE DESIGNATION IS: ZONE X, COMMUNITY PANEL NO. 06037C1620F
EFFECTIVE DATE: SEPTEMBER 26, 2008

USE ZONE:

THE CURRENT USE ZONING FOR THE SUBJECT PROPERTY IS:

[Q] R5-4D-O, MULTIPLE DWELLING ZONE.

LAND AREA:

GROSS: 41,603 SQ.FT. = 0.955 ACRES
NET: 38,097 SQ.FT. = 0.875 ACRES

10' 0' 5' 10' 20'
GRAPHIC SCALE: 1" = 10'

NO.	DATE	REVISION
1	1/11/16	UPDATED REPORTS A, B, C, AND OWNERS NOTE
2	7/13/17	UPDATED OWNERS TO REFLECT OWNERSHIP CHANGE PER DOCUMENT
		RECORDED ON 3/02/16, AS INST NO. 20160225963, O.R.

ALTA/ACSM LAND TITLE SURVEY

of: **11TH & SOUTH OLIVE STREET**
LOS ANGELES COUNTY, CALIFORNIA

for: **CH ACQUISITIONS 2, LLC**
2200 BISCAYNE BOULEVARD
MIAMI, FL 33137

FUSCOE ENGINEERING
16795 Von Karman, Suite 100
Irvine, California 92606
tel 949.474.1960 • fax 949.474.5315
www.fuscoe.com

DATE: FEBRUARY 6, 2015
SCALE: 1" = 10'
FN: 1382-003 ALTA3.dwg
JN: 1382.003.01
DRAWN BY: RJL
CHECKED BY: JLU
SHEET 2 OF 2

ODA NEW YORK
250 Park Ave South 3rd Floor
New York, New York 10003
646-478-7455

NO.	DATE	REVISION
	08/07/2017	ENTITLEMENT SUBMISSION

OWNER / APPLICANT

1045 OLIVE, LLC
2200 BISCAYNE BLVD
MIAMI, FL 33137

CONSULTANTS

LANDSCAPE ARCHITECT:
ODA Architecture P.C.
250 Park Avenue South 3rd Fl
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T. (646) 478-7455

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T. (415) 437-7330

ELEVATOR CONSULTANT:
GVK ELEVATOR CONSULTING SERVICES Inc
50 California Street Suite 3510
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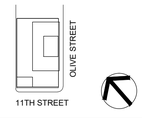
LAND USE CONSULTANT:
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Irvine CA 91612
T. (949) 474-1591

KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

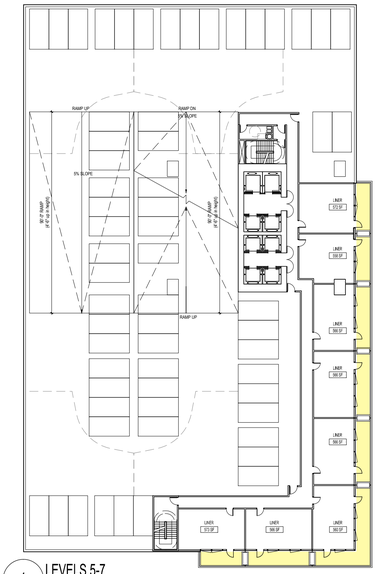
NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE:

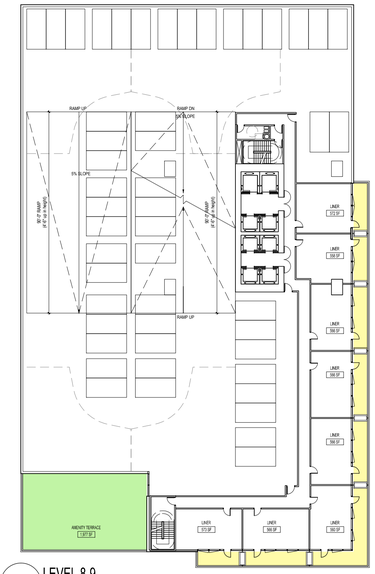
SITE SURVEY

A-004

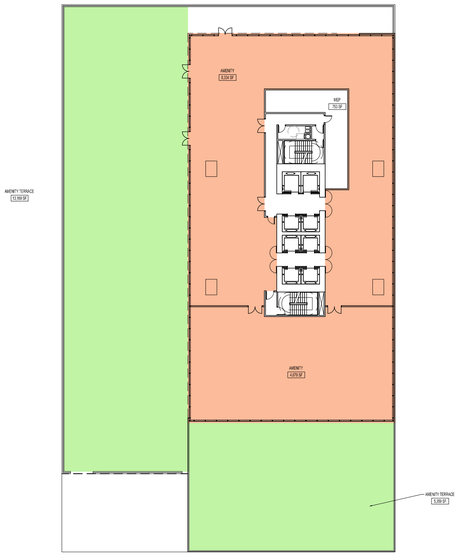
PAGE: 05 OF 30



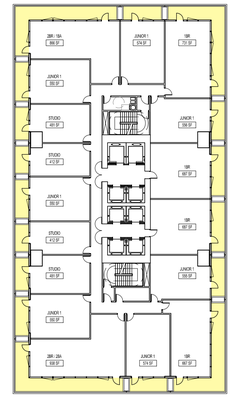
1 LEVELS 5-7
SCALE: 1/32" = 1'-0"
PRIVATE OPEN SPACE: 1,308 SF
(50 SF MAX PER BALCONY)
QUALIFIED AS PRIVATE OPEN SPACE / FLOOR: 8 X 50 SF = 400 SF
3 FLOORS X 400 SF = 1,200 SF TOTAL



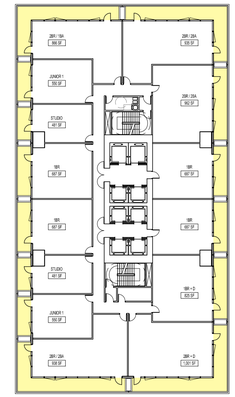
2 LEVEL 8-9
SCALE: 1/32" = 1'-0"
EXTERIOR COMMON OPEN SPACE (LOCATED ONLY ON LEVEL 8): 1,972 SF
PRIVATE OPEN SPACE: 1,308 SF
(50 SF MAX PER BALCONY)
QUALIFIED AS PRIVATE OPEN SPACE / FLOOR: 8 X 50 SF = 400 SF
2 FLOORS X 400 SF = 800 SF



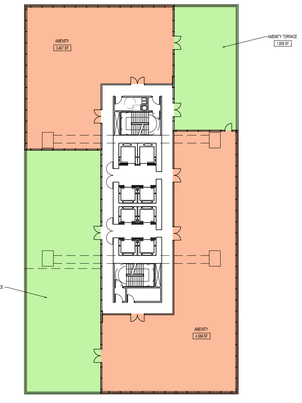
3 LEVEL 10
SCALE: 1/32" = 1'-0"
INTERIOR COMMON OPEN SPACE: 13,013 SF
EXTERIOR COMMON OPEN SPACE: 16,751 SF



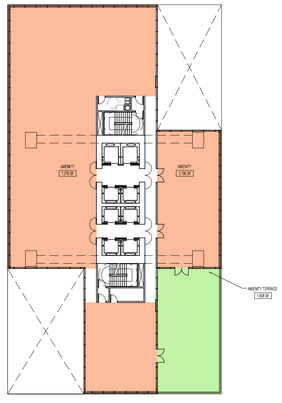
4 LEVELS 11-20
SCALE: 1/32" = 1'-0"
PRIVATE OPEN SPACE: 2,740 SF
(50 SF MAX PER BALCONY)
QUALIFIED AS PRIVATE OPEN SPACE / FLOOR: 17 X 50 SF = 850 SF
10 FLOORS X 850 SF = 8,500 SF TOTAL



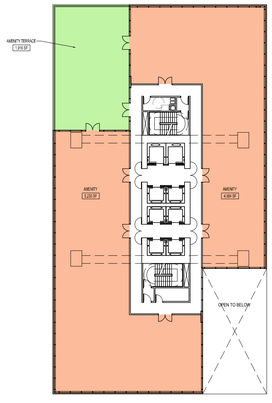
5 LEVELS 21-51, 56-60
SCALE: 1/32" = 1'-0"
PRIVATE OPEN SPACE: 2,794 SF
(50 SF MAX PER BALCONY)
QUALIFIED AS PRIVATE OPEN SPACE / FLOOR: 14 X 50 SF = 700 SF
36 FLOORS X 700 SF = 25,200 SF



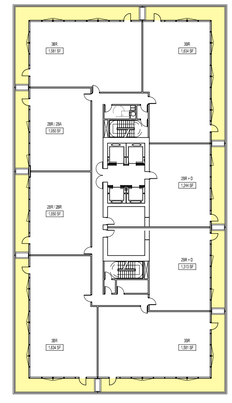
6 LEVEL 53
SCALE: 1/32" = 1'-0"
INTERIOR COMMON OPEN SPACE: 8,000 SF
EXTERIOR COMMON OPEN SPACE: 5,331 SF



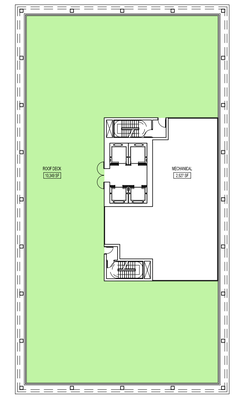
7 LEVEL 54
SCALE: 1/32" = 1'-0"
INTERIOR COMMON OPEN SPACE: 8,474 SF
EXTERIOR COMMON OPEN SPACE: 1,608 SF



8 LEVEL 55
SCALE: 1/32" = 1'-0"
INTERIOR COMMON OPEN SPACE: 9,759 SF
EXTERIOR COMMON OPEN SPACE: 1,916 SF



9 LEVELS 61-70
SCALE: 1/32" = 1'-0"
PRIVATE OPEN SPACE: 2,902 SF
(50 SF MAX PER BALCONY)
QUALIFIED AS PRIVATE OPEN SPACE / FLOOR: 8 X 50 SF = 400 SF
10 FLOORS X 400 SF = 4,000 SF



10 ROOF
SCALE: 1/32" = 1'-0"
EXTERIOR COMMON OPEN SPACE: 10,349 SF

OPEN SPACE REQUIREMENTS:
LAMC sec. 12.21 G

COMMON OPEN SPACE:
1. MIN. AREA OF 400 SF AND NO HORIZONTAL DIMENSION LESS THAN 15'.
2. RECREATION ROOM AT LEAST 600 SF

PRIVATE OPEN SPACE
1. 50 SF MIN. AND NO HORIZONTAL DIMENSION LESS THAN 6'
2. 8' MIN. VERTICAL CLEARANCE

EXTERIOR COMMON OPEN SPACE
INTERIOR COMMON OPEN SPACE
PRIVATE OPEN SPACE

USABLE OPEN SPACE REQUIRED (PER LAMC 12.21.G):

	UNIT COUNT	SF PER UNIT	AREA
UNITS WITH LESS THAN 3 HABITABLE ROOMS	478	100	47,800SF
UNITS WITH 3 HABITABLE ROOMS	220	125	27,500SF
UNITS WITH 4 OR MORE HABITABLE ROOMS	96	175	16,800SF
TOTAL USABLE OPEN SPACE REQUIRED			**92,100SF**

CREDITED OPEN SPACE PROVIDED

COMMON OPEN SPACE [EXTERIOR]	
8TH FLOOR	1,972SF
10TH FLOOR	16,751SF
53RD FLOOR	5,331SF
54TH FLOOR	1,608SF
55TH FLOOR	1,916SF
ROOF DECK	10,349SF
SUBTOTAL	37,927SF

CREDITED COMMON OPEN SPACE [INTERIOR]

PROVIDED INTERIOR COMMON SPACE (compliant with LAMC 12.21 G)	39,246SF
INTERIOR COMMON SPACE CREDITED TO OPEN SPACE (max 25% of required OPEN SPACE)	
SUBTOTAL	23,025SF
TOTAL USABLE COMMON OPEN SPACE PROVIDED (excluded private open space)	**60,952SF**

PRIVATE OPEN SPACE

TOTAL CREDITED (794* Units x 50 SF)	**39,700SF**

* 100% of units with private balcony compliant with LAMC 12.21 G

TOTAL USABLE OPEN SPACE PROVIDED (common & private)	**100,652SF**

LANDSCAPED AREA:

REQUIRED (25% of EXTERIOR common open space)	9,482SF
PROVIDED	**11,290SF**

TREES REQUIREMENTS:

TREES REQUIRED	CRITERIA	UNIT COUNT	# of TREES
TOTAL TREES	1 TREE / 4 DWELLING UNITS	794	199
CANOPY TREES	50 % OF TOTAL TREES		99
Per Downtown Design Guide			

TREES PROPOSED:

TOTAL TREES	**539**
CANOPY TREES	**137**

ODA NEW YORK
250 Park Ave South 3rd Floor
New York, New York 10003
646-476-7455

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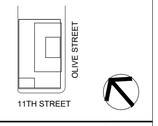
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KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



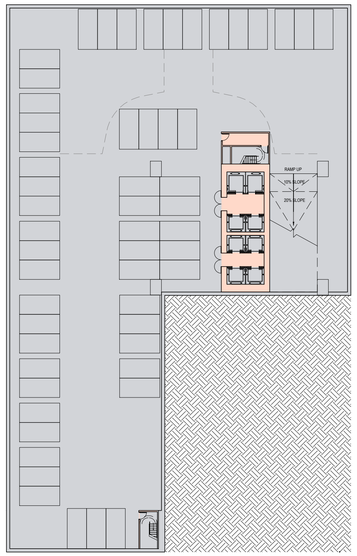
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/32" = 1'-0"

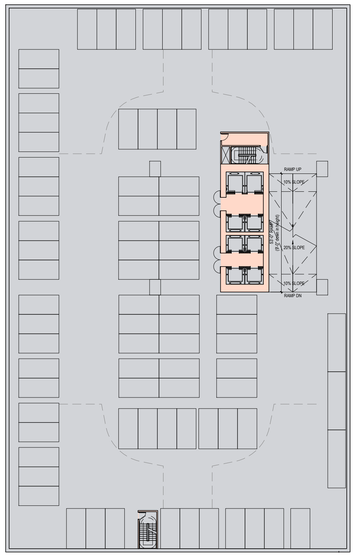
OPEN SPACE DIAGRAMS

A-005



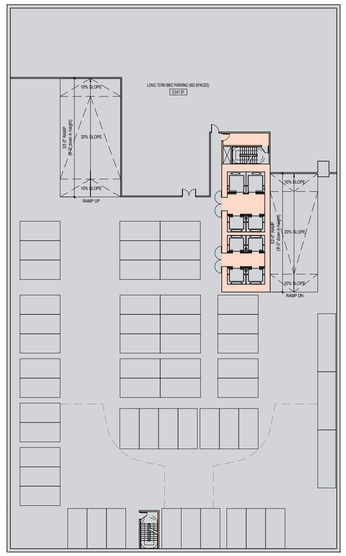
1 LEVEL B6
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
B6	28,159	0	1,219	541	25,388	1,011



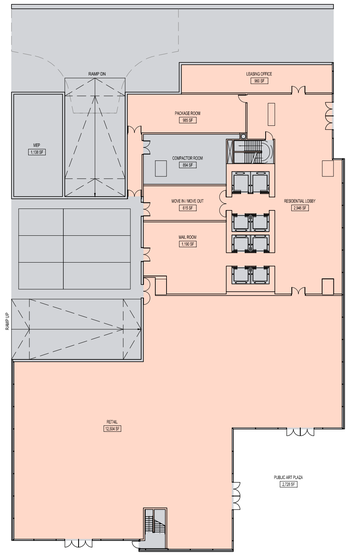
2 LEVELS B2-B5
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
B2-B5	37,704	0	1,167	829	34,965	723



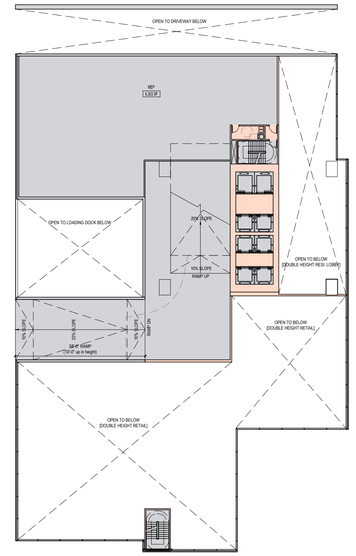
3 LEVEL B1
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
B1	36,480	0	1,172	829	33,756	723



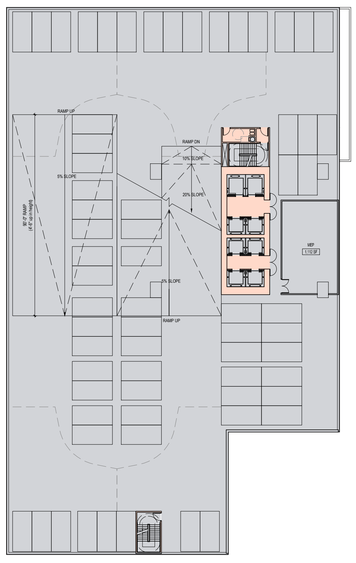
4 LEVEL 1
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
1st Fl.	33,123	1,939	995	900	9,905	19,384



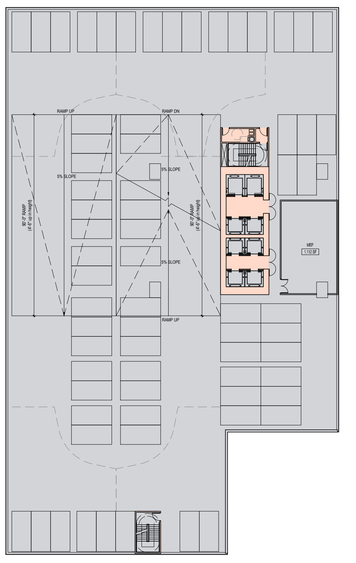
5 MEZZANINE LEVEL
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
Mezzanine	14,110	6,028	1,168	900	4,950	1,064



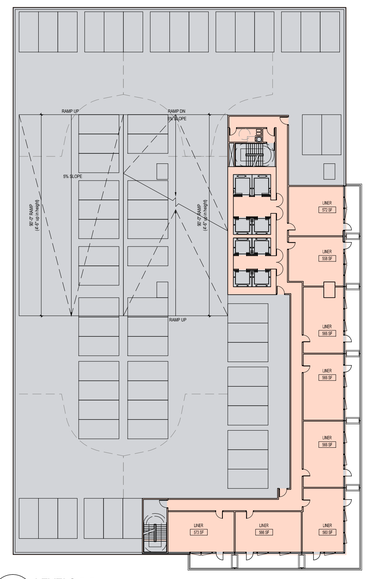
6 LEVEL 2
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
2nd Fl.	33,752	1,070	784	900	30,060	938



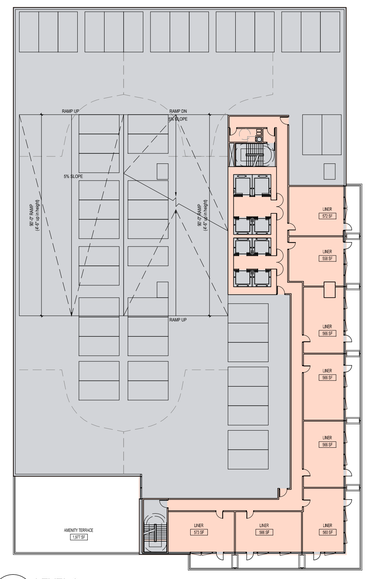
7 LEVELS 3-4
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
3rd - 4th Fl.	33,752	1,070	784	900	30,060	938



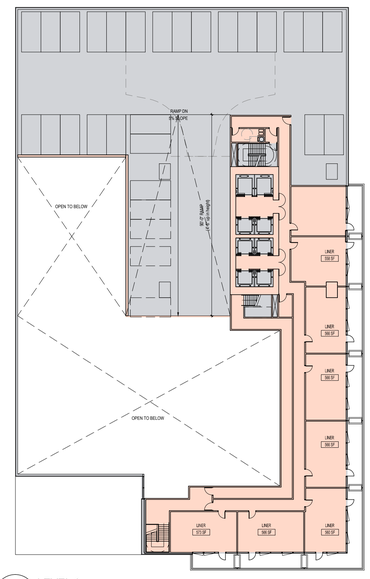
8 LEVELS 5-7
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
5th - 7th Fl.	36,344	206	691	900	27,896	6,651



9 LEVEL 8
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
8th Fl.	34,372	205	718	900	25,911	6,638



10 LEVEL 9
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
9th Fl.	22,338	237	718	900	12,820	7,663

FLOOR AREA
DEDUCTIONS

NEW YORK
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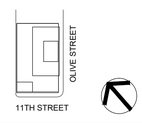
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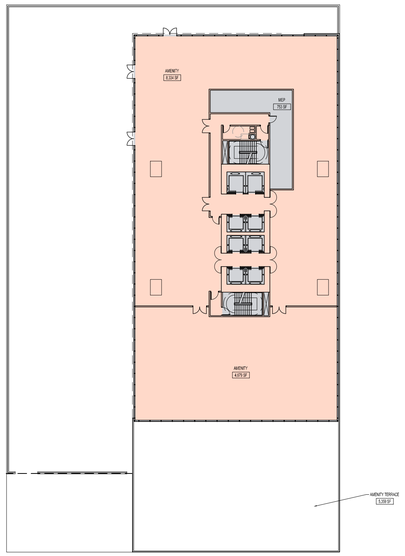
1045 OLIVE

NEW CONSTRUCTION

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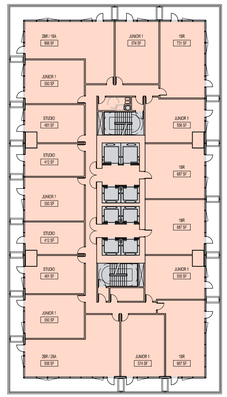
FLOOR AREA DIAGRAMS

A-006



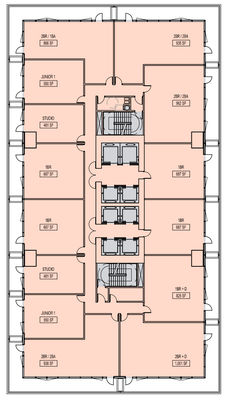
1 LEVEL 10
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
10th Fl.	15,941	1,231	430	965	0	13,315



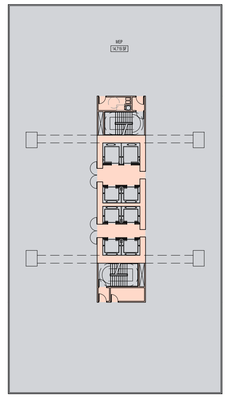
2 LEVELS 11-20
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
11th-20th Fl.	13,080	392	290	965	0	11,433



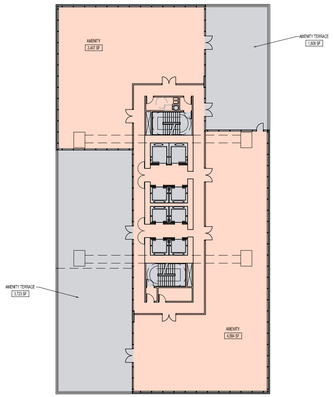
3 LEVELS 21-51
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
21st-51st Fl.	13,080	392	290	965	0	11,433



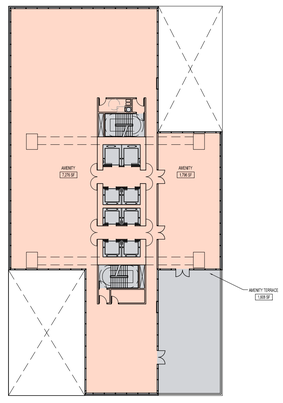
4 LEVEL 52
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
52nd Fl.	16,662	14,349	313	965	0	1,035



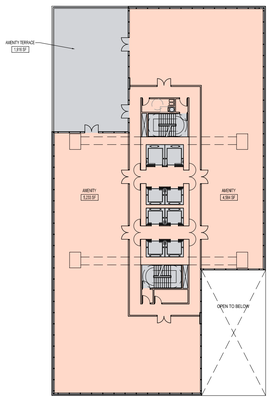
5 LEVEL 53
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS					FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	Cutout Amenity Terrace	
53rd Fl.	16,662	353	502	965	0	5,331	9,511



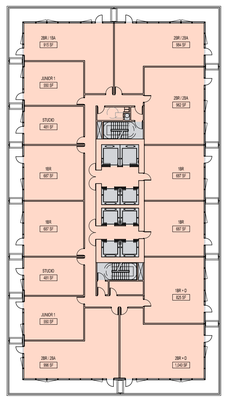
6 LEVEL 54
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS					FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	Cutout Amenity Terrace	
54th Fl.	13,138	346	502	965	0	1,608	9,717



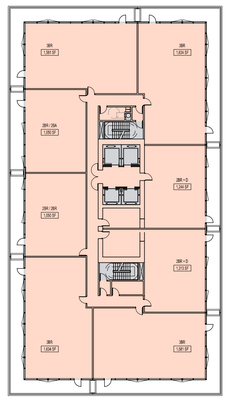
7 LEVEL 55
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS					FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	Cutout Amenity Terrace	
55th Fl.	15,054	394	534	965	0	1,916	11,245



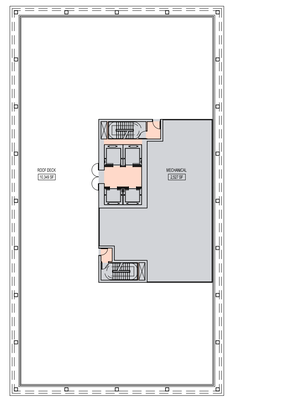
8 LEVELS 56-60
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
56th-60th Fl.	13,080	392	290	857	0	11,541



9 LEVELS 61-70
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
61st-70th Fl.	13,080	392	290	587	0	11,811



10 ROOF
SCALE: 1/32" = 1'-0"

FLOOR	GFA	DEDUCTIONS				FA
		Mech.	Ext. Wall	Stairs & Elev.	Parking	
Roof	3,715	2527	302	620	0	266

FLOOR AREA

DEDUCTIONS

FLOOR	# OF FLOORS	GFA	TOTAL DEDUCTIONS	FA
Roof	1	3,715	3449	266
61st-70th Fl.	10	130,800	12,694	118,106
56th-60th Fl.	5	65,400	7,697	57,703
55th Fl.	1	15,054	3,809	11,245
54th Fl.	1	13,138	3,421	9,717
53rd Fl.	1	16,662	7,151	9,511
52nd Fl.	1	16,662	15,627	1,035
21st-51st Fl.	31	405,480	51,069	354,411
11th-20th Fl.	10	130,800	16,474	114,326
10th Fl.	1	15,941	2,626	13,315
9th Fl.	1	22,338	14,675	7,663
8th Fl.	1	34,372	27,734	6,638
5th - 7th Fl.	3	109,032	89,078	19,954
3rd - 4th Fl.	2	67,504	65,628	1,876
2nd Fl.	1	33,752	32,814	938
Mezzanine	1	14,110	13,046	1,064
1st Fl.	1	33,123	13,739	19,384
TOTALS ABV. GRADE		1,127,883	380,732	747,151
B1	1	36,480	35,757	723
B2-B5	4	150,816	147,924	2,892
B6	1	28,159	27,148	1,011
TOTALS BELOW GRADE		215,455	210,829	4,626
TOTALS		1,343,338	591,561	751,777

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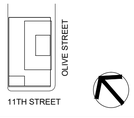
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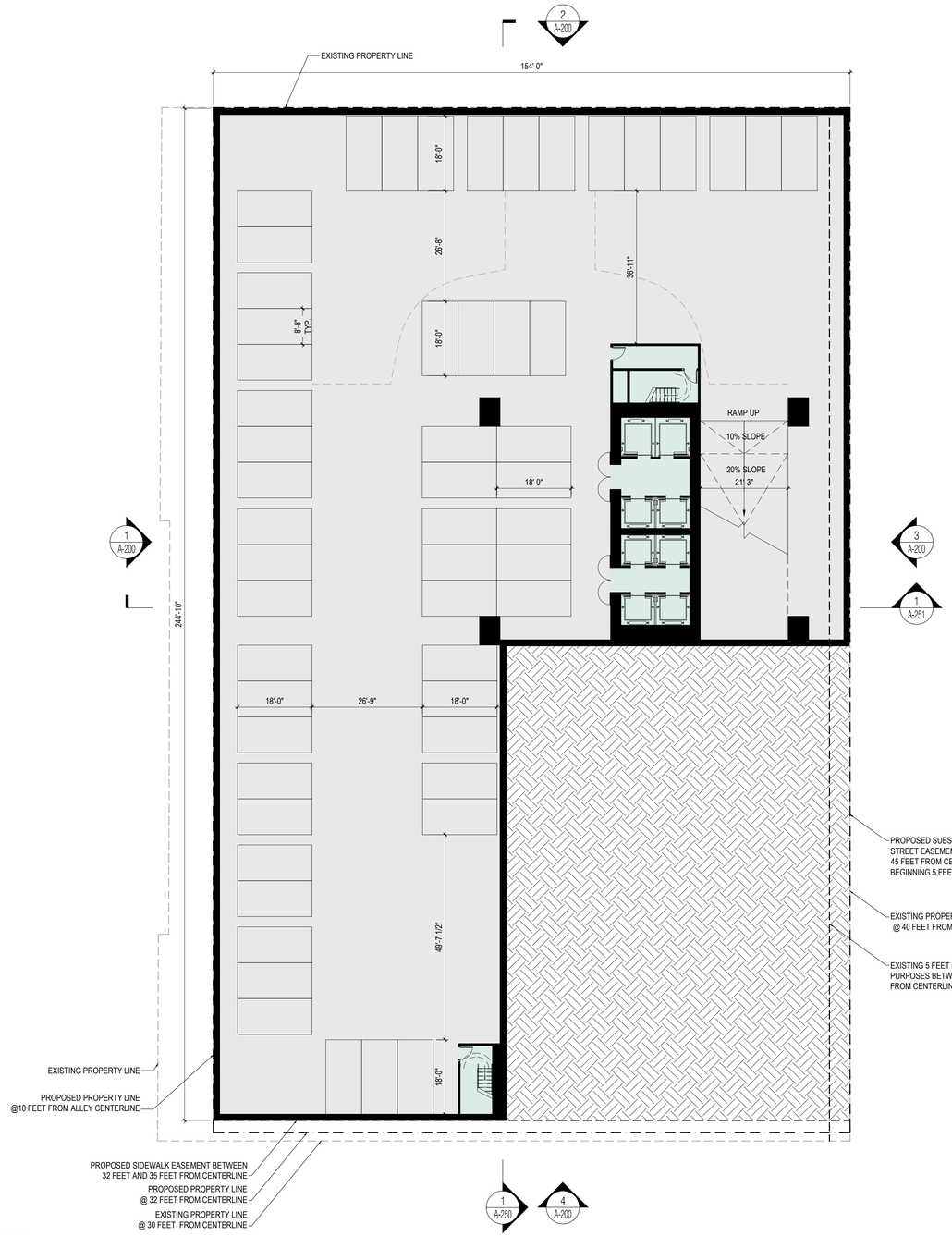
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/32" = 1'-0"

FLOOR AREA DIAGRAMS

A-007



RETAIL
LOBBY
AMENITY
RESIDENTIAL
CORE
CORRIDOR
PARKING
MEP / BOH

1 BASEMENT 6 FLOOR PLAN

SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
BASEMENT 6	50	5	55



2 BASEMENT 2-5 FLOOR PLAN

SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
BASEMENT 2-5	72	10	82

NEW YORK
250 Park Ave South 3rd Floor
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646-478-7455

NO.	DATE	REVISION
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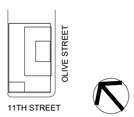
LAND USE CONSULTANT:
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KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



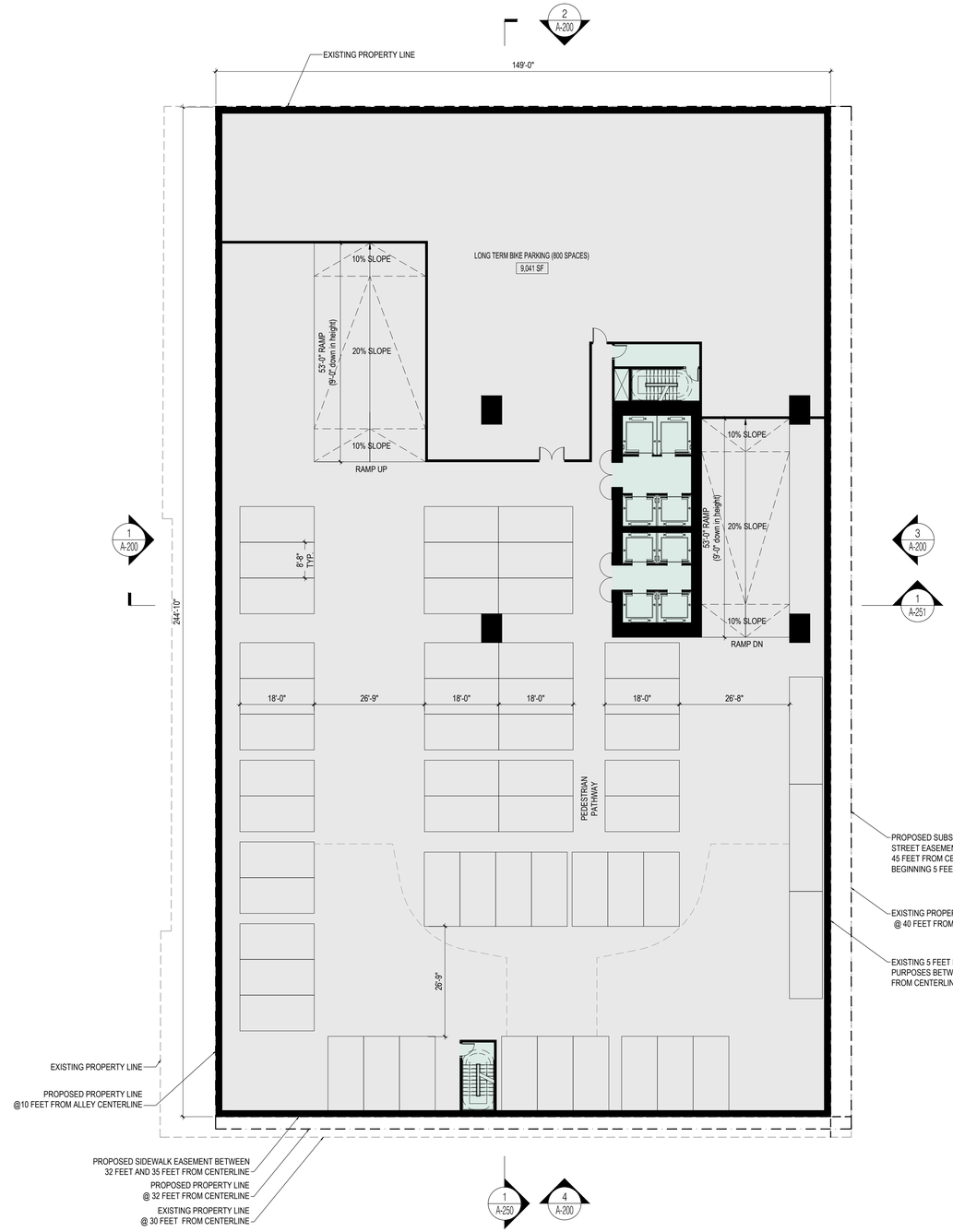
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: BASEMENT 6 & 2-5

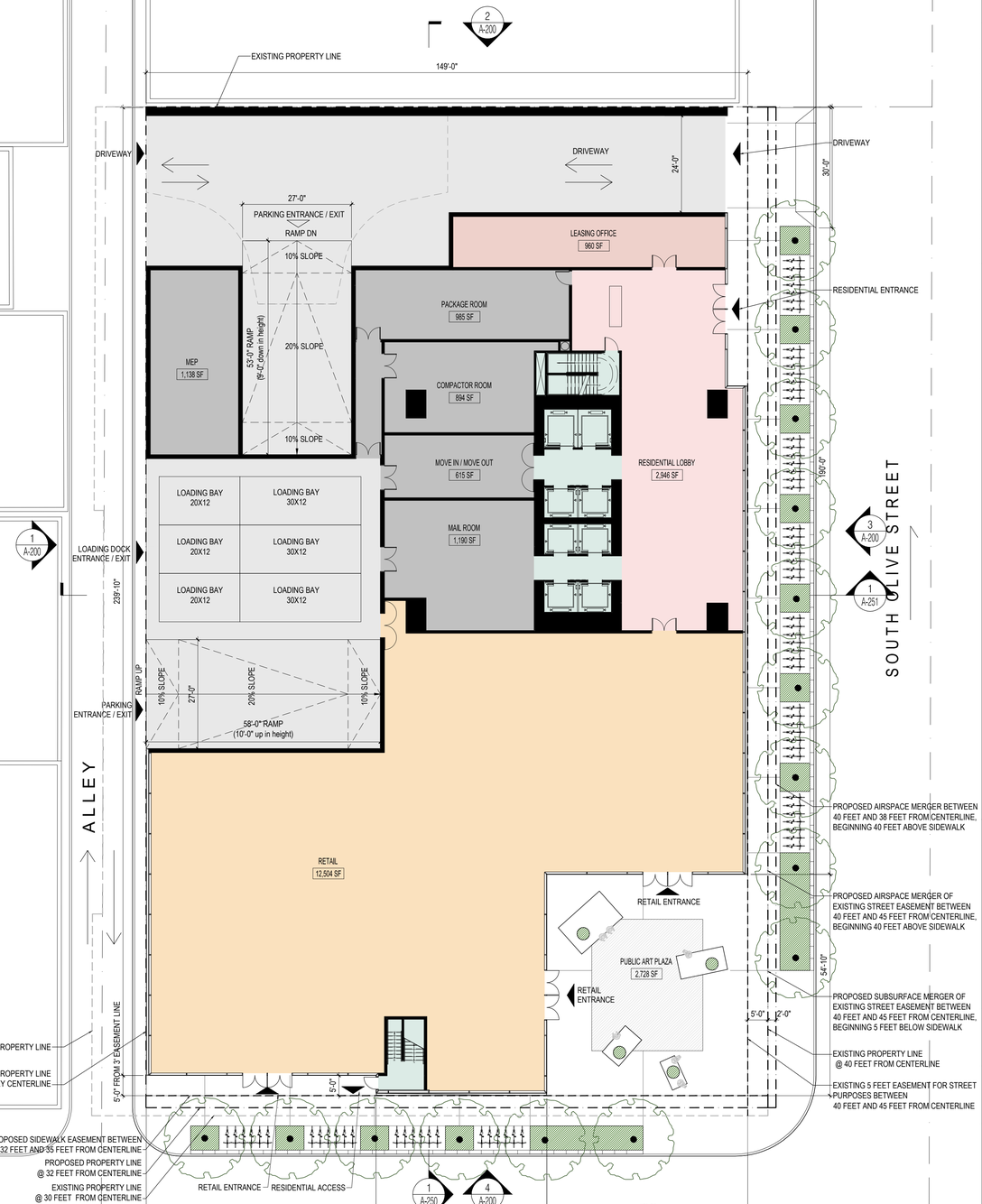
A-100



RETAIL
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AMENITY
RESIDENTIAL
CORE
CORRIDOR
PARKING
MEP / BOH

1 BASEMENT 1 FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
BASEMENT 1	45	8	53



2 1ST FLOOR PLAN
SCALE: 1/16" = 1'-0"

WEST 11TH STREET

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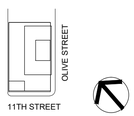
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KEY PLAN

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LOS ANGELES, CA 90015



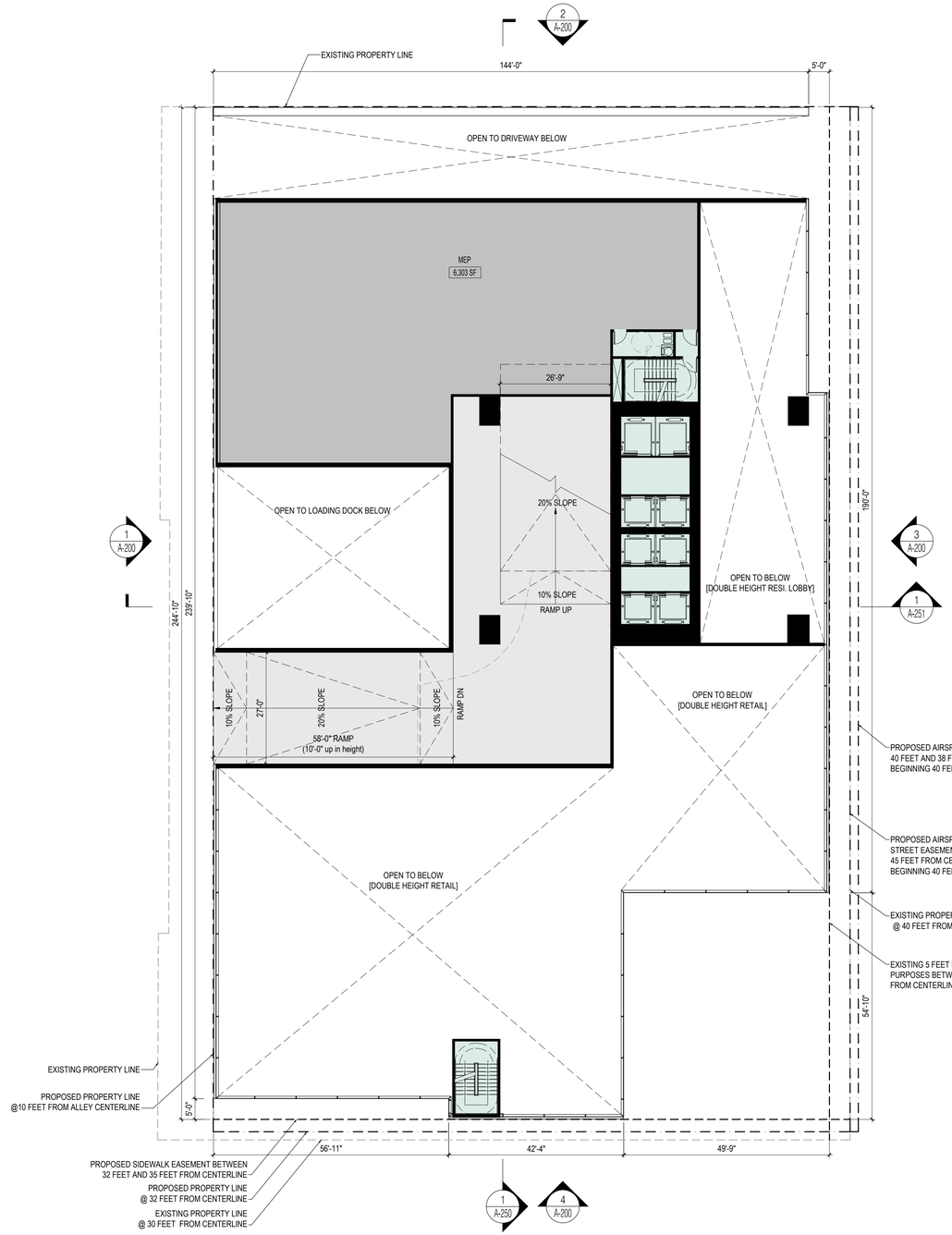
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

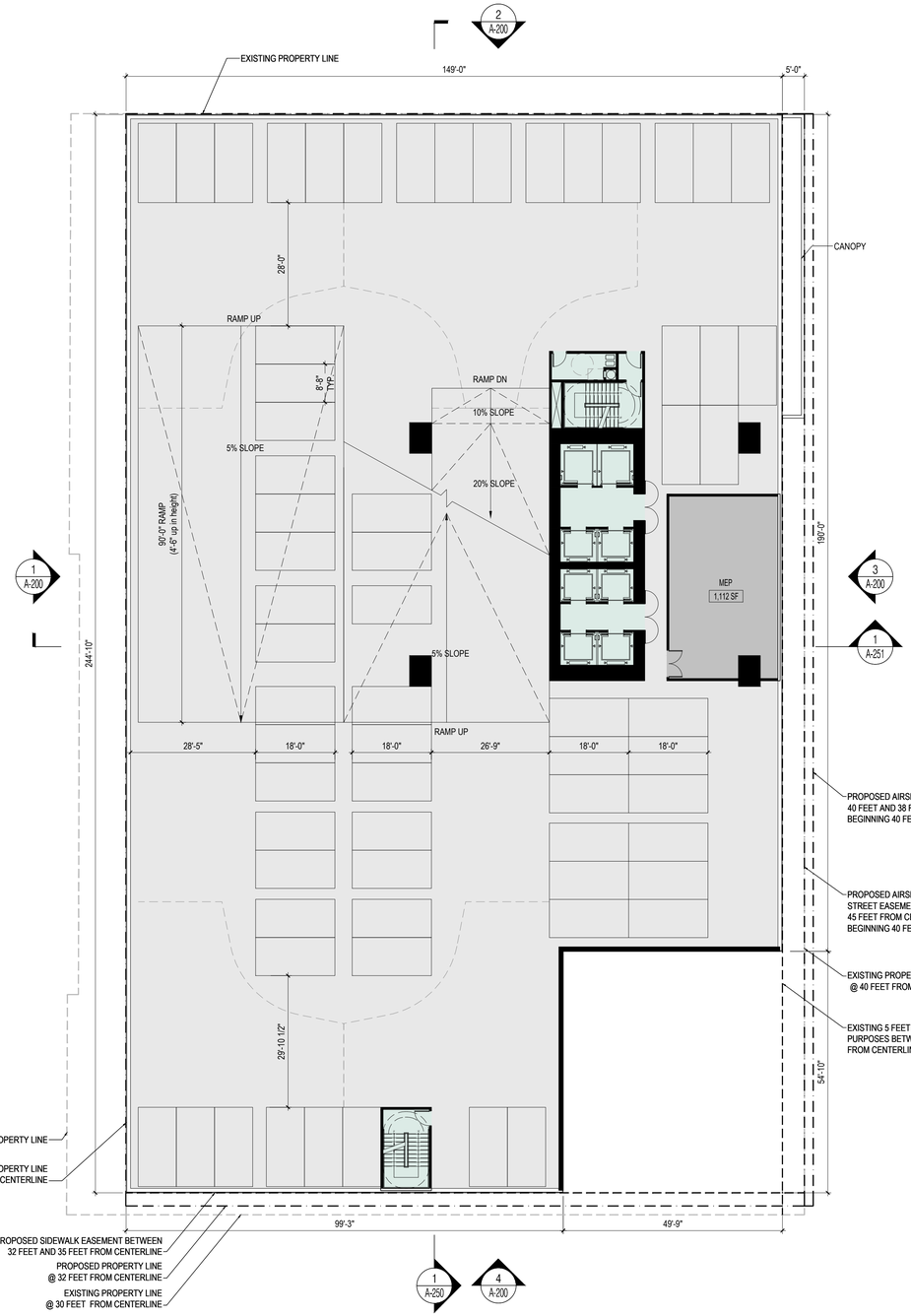
FLOOR PLANS:
BASEMENT 1 & 1ST FLOOR

A-101



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1 MEZZANINE FLOOR PLAN
SCALE: 1/16" = 1'-0"



2 2ND FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
LEVEL 2	57	8	65

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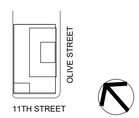
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KEY PLAN

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LOS ANGELES, CA 90015



1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: MEZZANINE & 2ND FLOOR

A-102

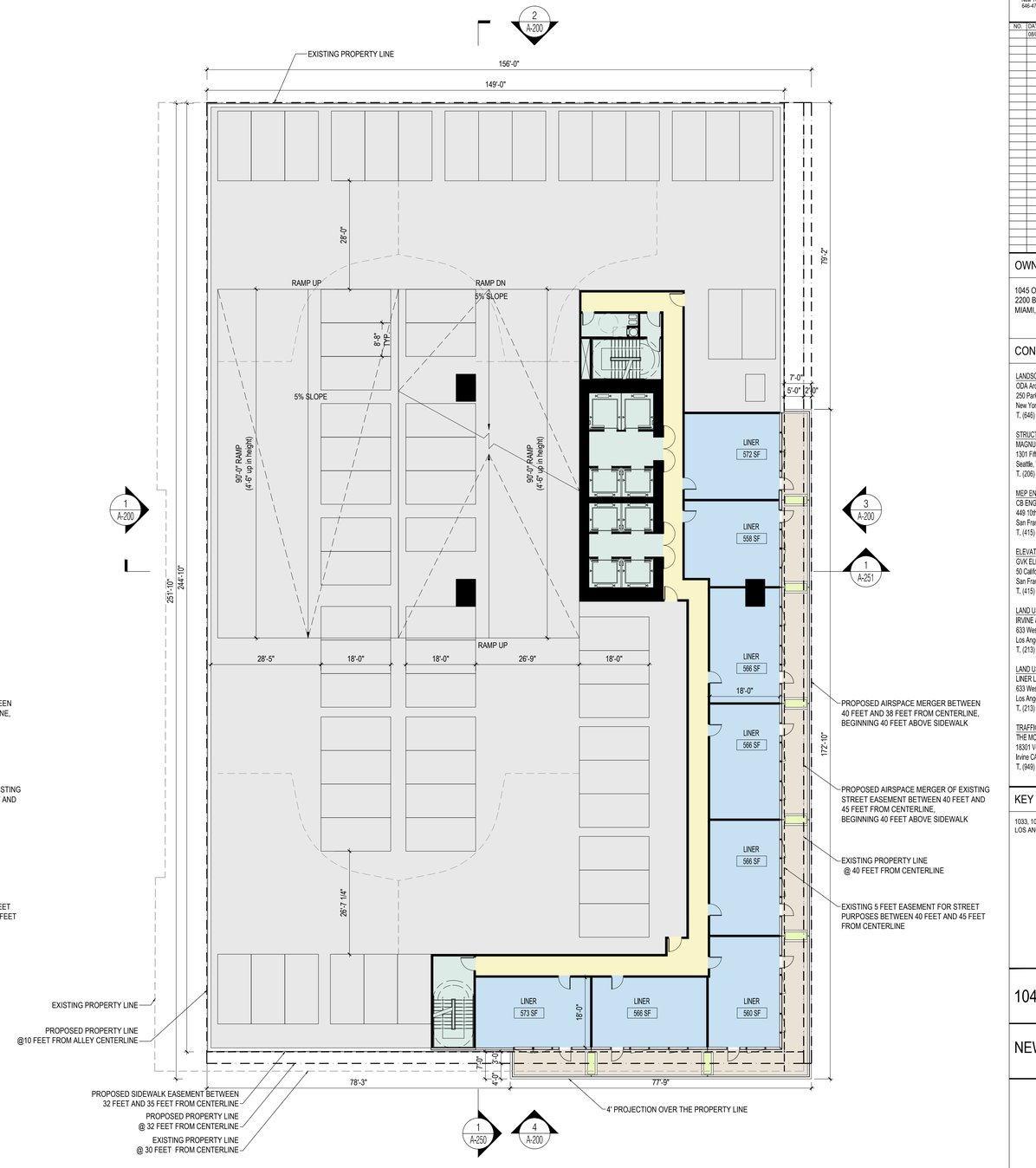


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1 3RD-4TH FLOOR PLAN

SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
LEVELS 3-4	60	8	68
TOTAL	120	16	136



2 5TH-7TH FLOOR PLAN

SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
LEVELS 5-7	60		60
TOTAL	180		180

LEVELS 5-7	# OF FLOORS	TOTAL
LINER		
8	3	24

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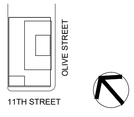
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KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

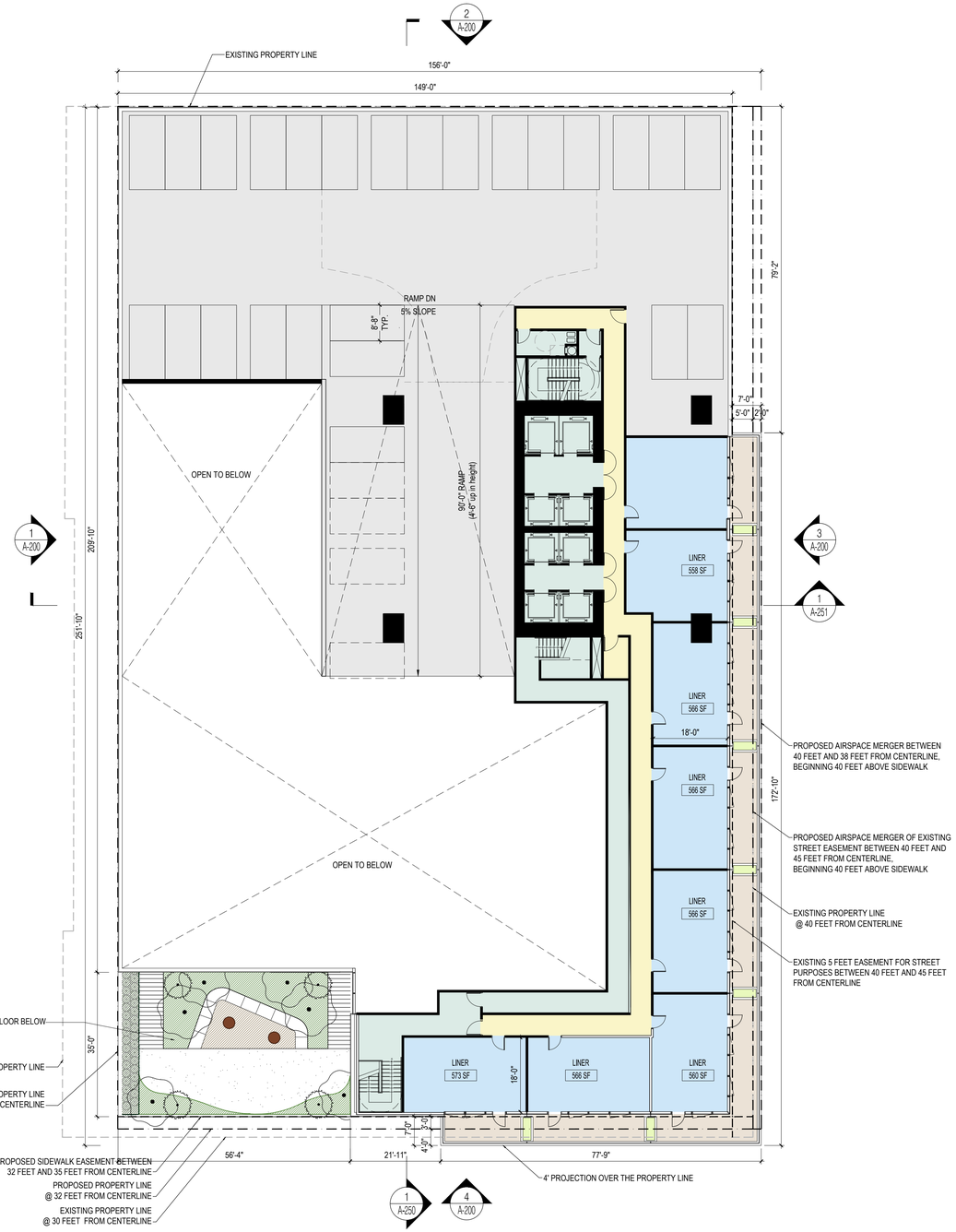
NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: 3RD-4TH & 5TH-7TH FLOOR

A-103





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1 8TH FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
LEVEL 8	49		49

LEVEL 8	# OF FLOORS	TOTAL
LINER		
8	1	8

2 9TH FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVEL	STAND. PKG	TANDEM PKG	TOTAL PKG
LEVEL 9	25		25

LEVEL 9	# OF FLOORS	TOTAL
LINER		
8	1	8

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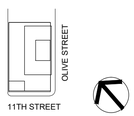
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KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: 8TH & 9TH FLOOR

A-104



1 10TH FLOOR PLAN
SCALE: 1/16" = 1'-0"



2 11TH-20TH FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVELS 11-20							UNITS/FL.	# OF FLOORS	TOTAL
STUDIO	JUNIOR 1BR	1BR	1BR+D	2BR	2BR+D	3BR			
4	7	4		2			17	10	170

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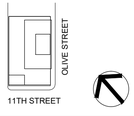
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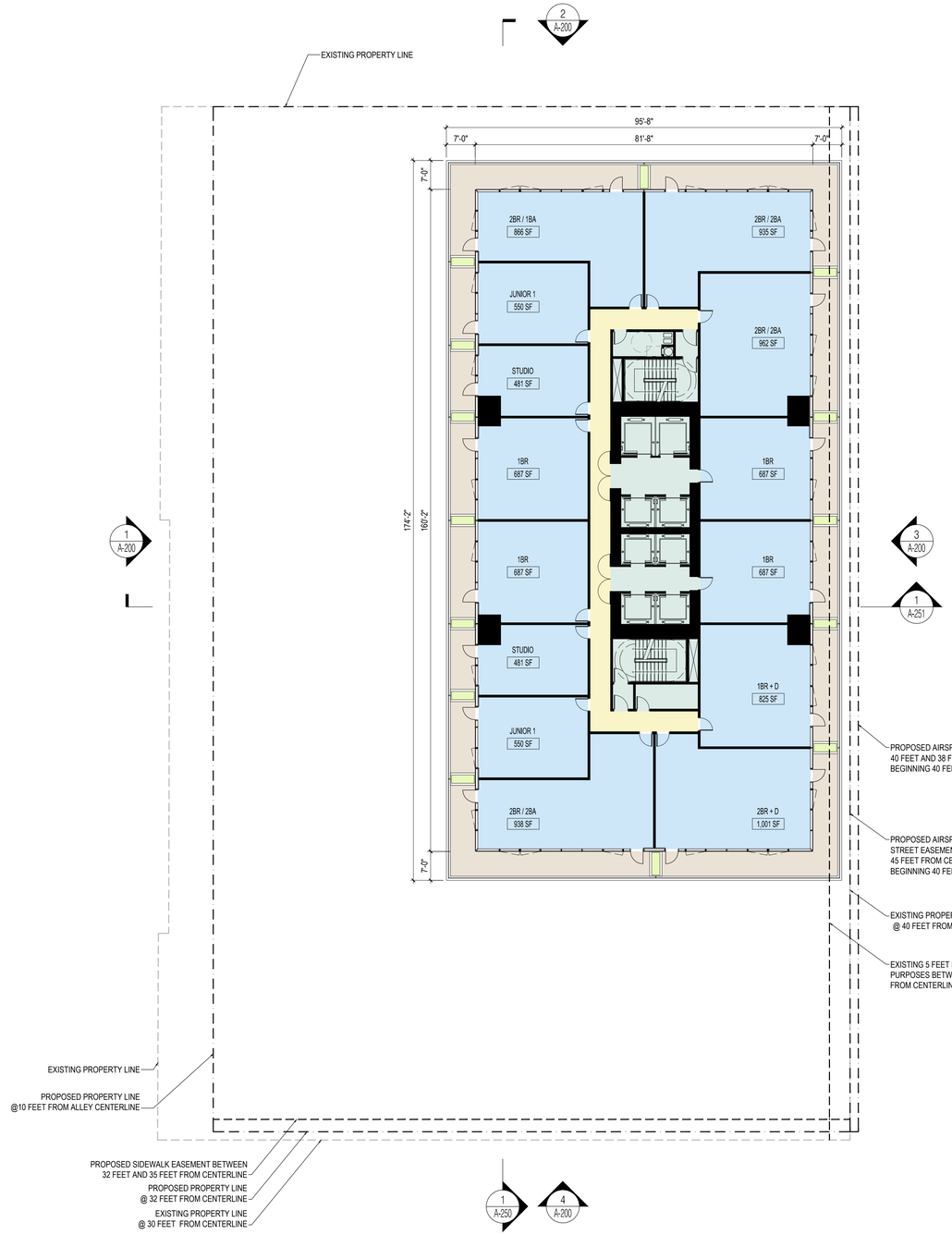
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PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: 10TH & 11TH-20TH FLOOR

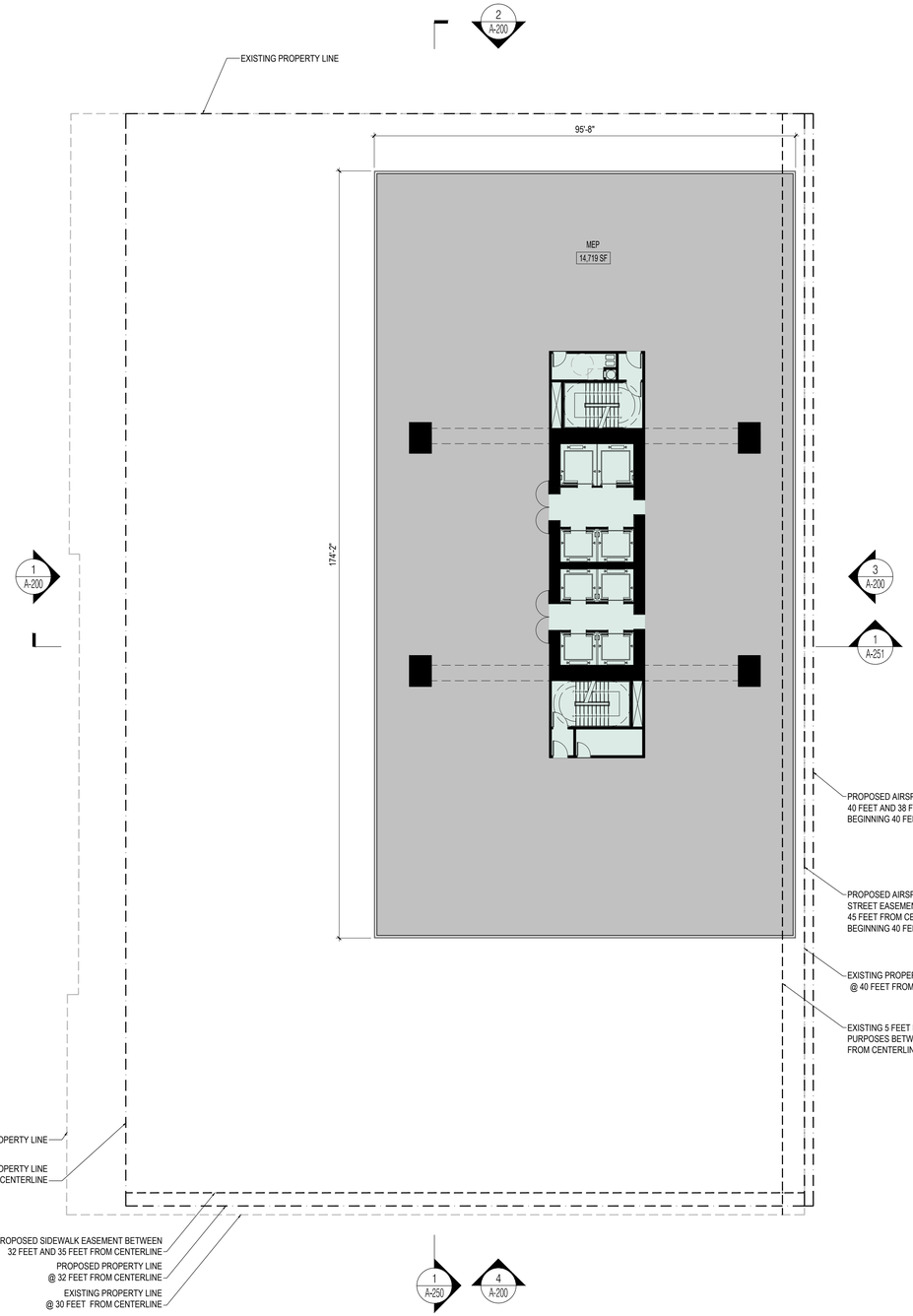
A-105



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1 21ST-51ST FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVELS 21-51							UNITS/FL.	# OF FLOORS	TOTAL
STUDIO	JUNIOR 1BR	1BR	1BR+D	2BR	2BR+D	3BR			
2	2	4	1	4	1		14	31	434



2 52ND FLOOR PLAN
SCALE: 1/16" = 1'-0"

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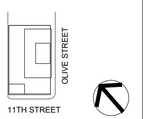
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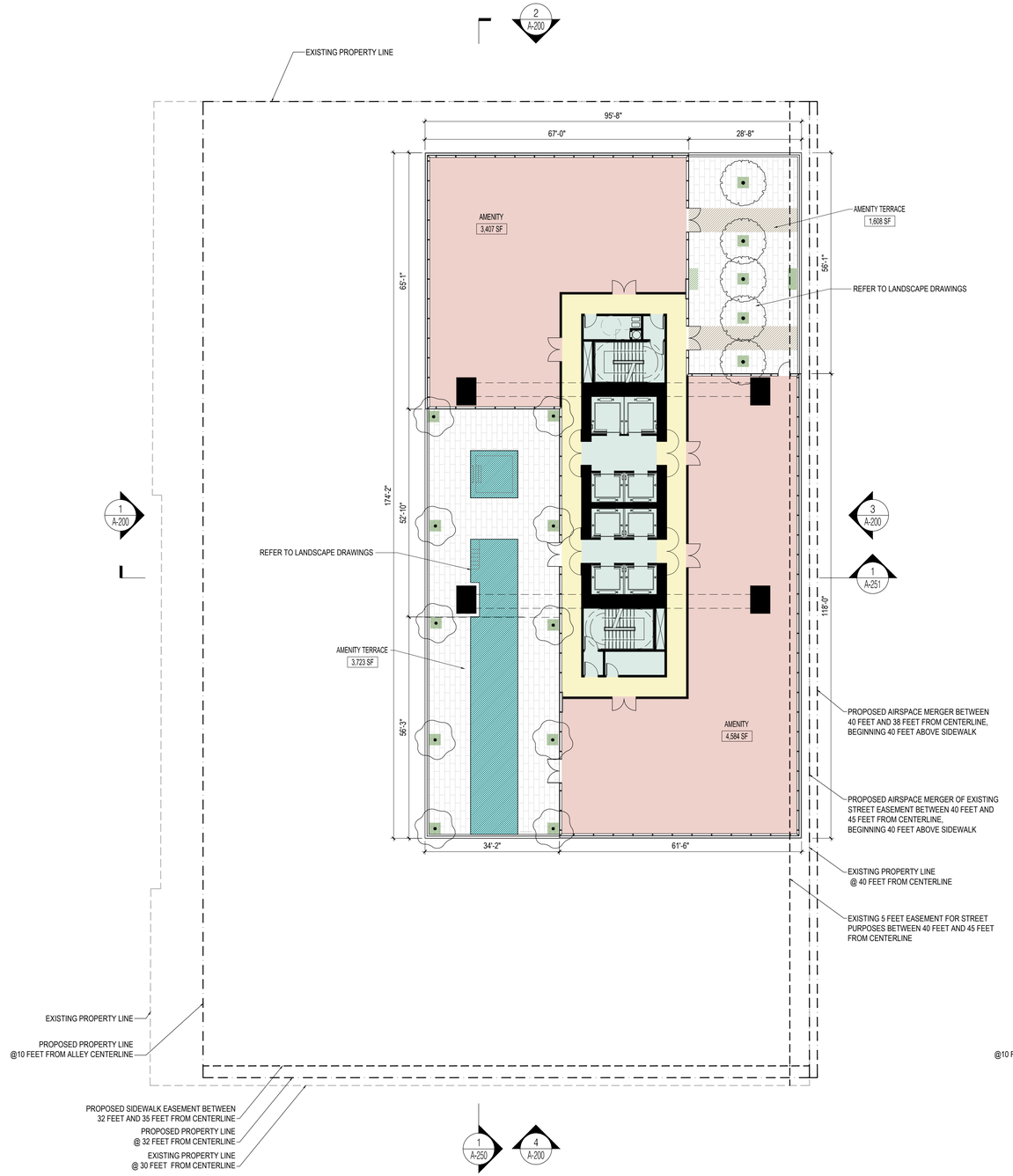
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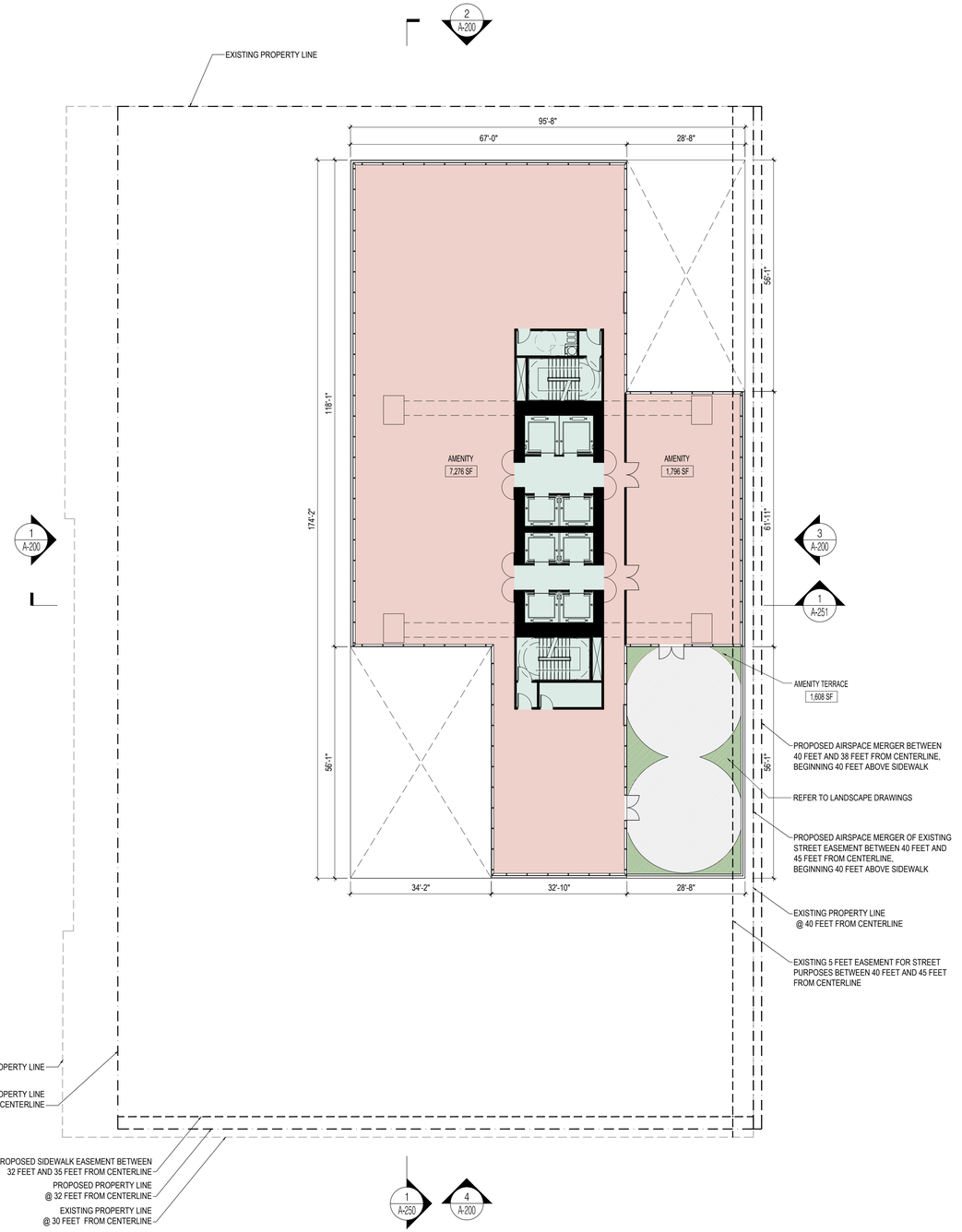
PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: 21ST-51ST & 52ND FLOOR

A-106



1 53RD FLOOR PLAN
SCALE: 1/16" = 1'-0"



2 54TH FLOOR PLAN
SCALE: 1/16" = 1'-0"

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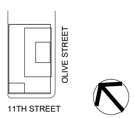
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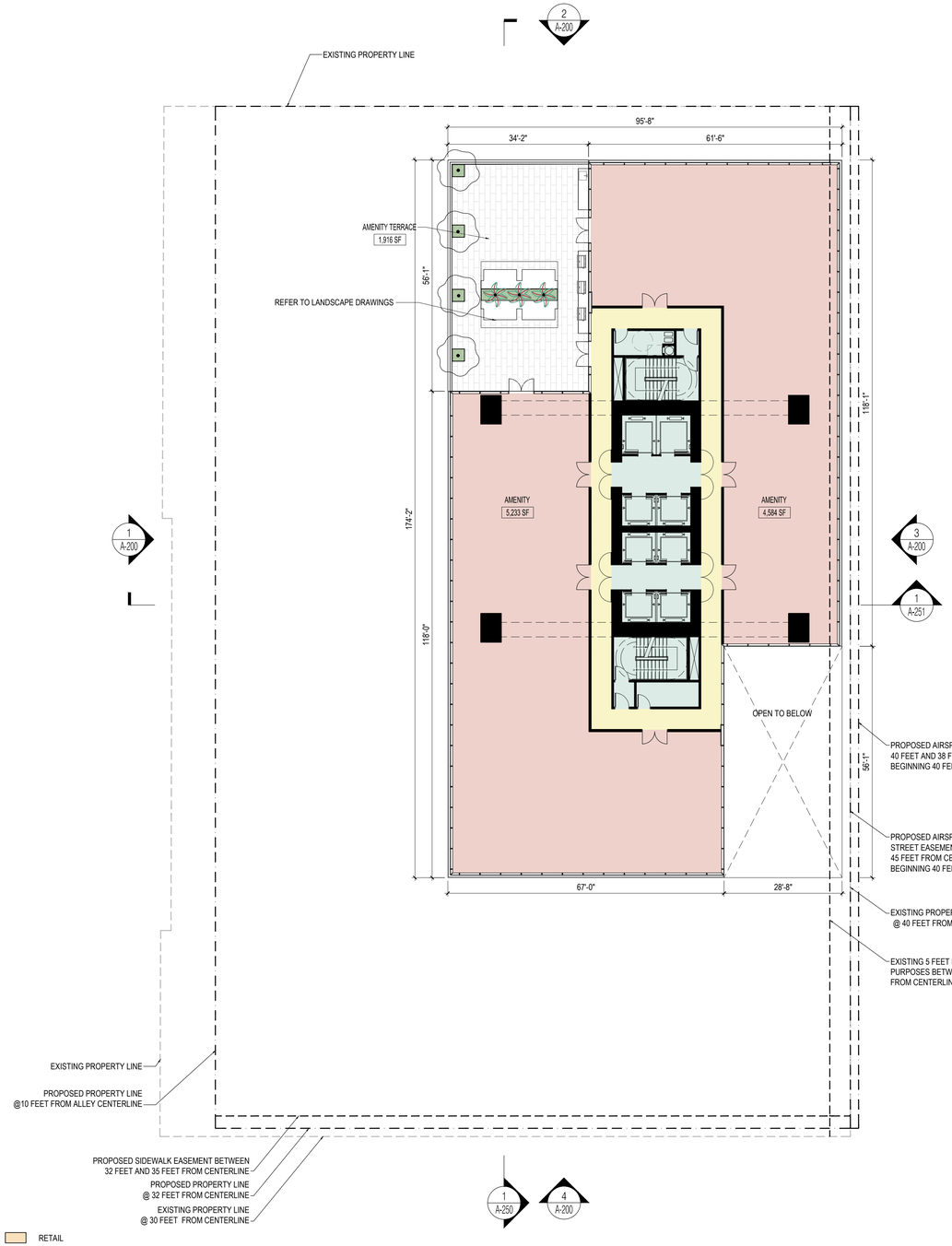
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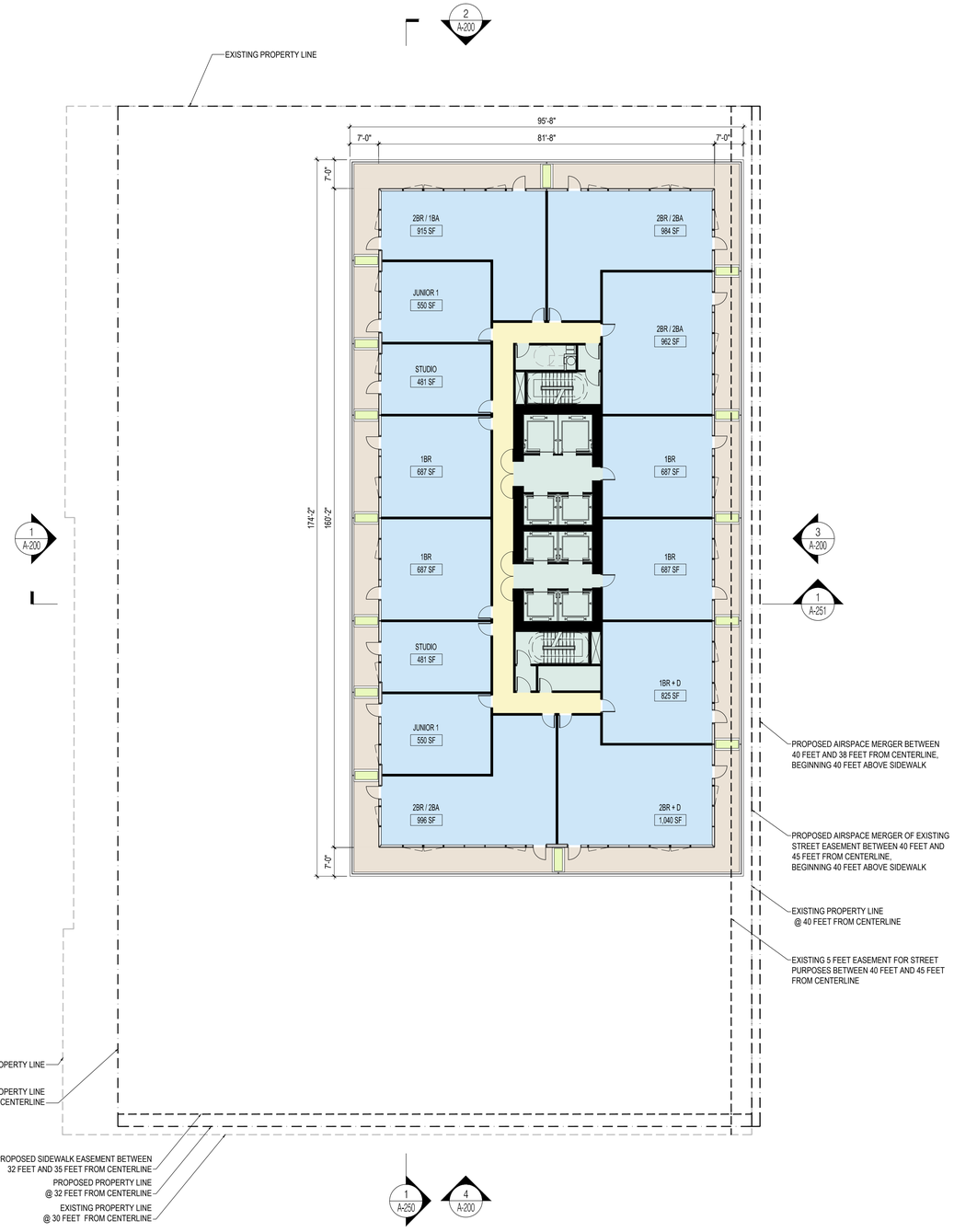
PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: 53RD & 54TH FLOOR

A-107



1 55TH FLOOR PLAN
SCALE: 1/16" = 1'-0"



2 56TH-60TH FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVELS 56-60							UNITS/FL.	# OF FLOORS	TOTAL
STUDIO	JUNIOR 1BR	1BR	1BR+D	2BR	2BR+D	3BR			
2	2	4	1	4	1		14	5	70

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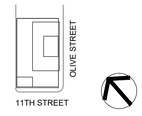
LAND USE CONSULTANT:
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TRAFFIC ENGINEER:
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Irvine CA 91612
T. (949) 474-1591

KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



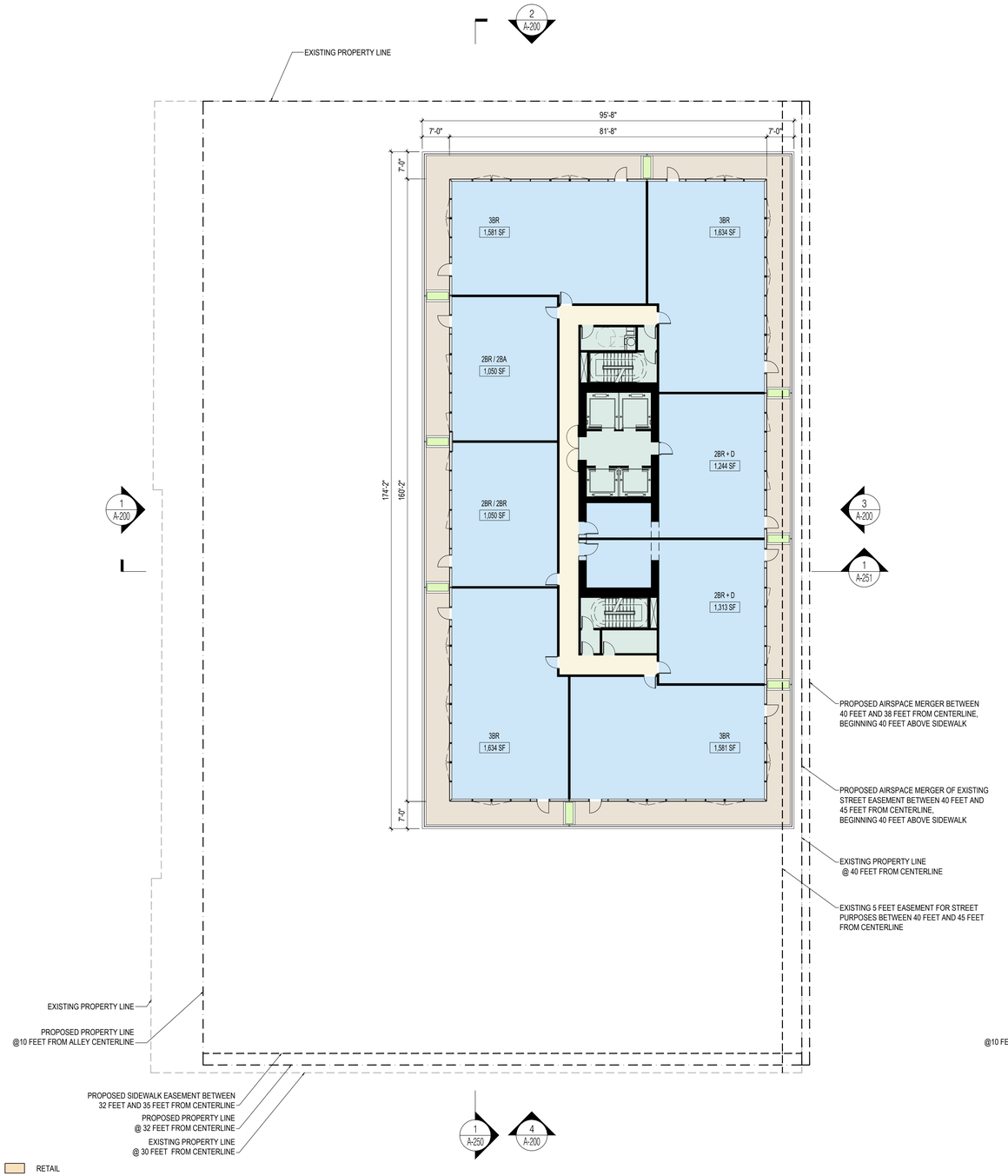
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

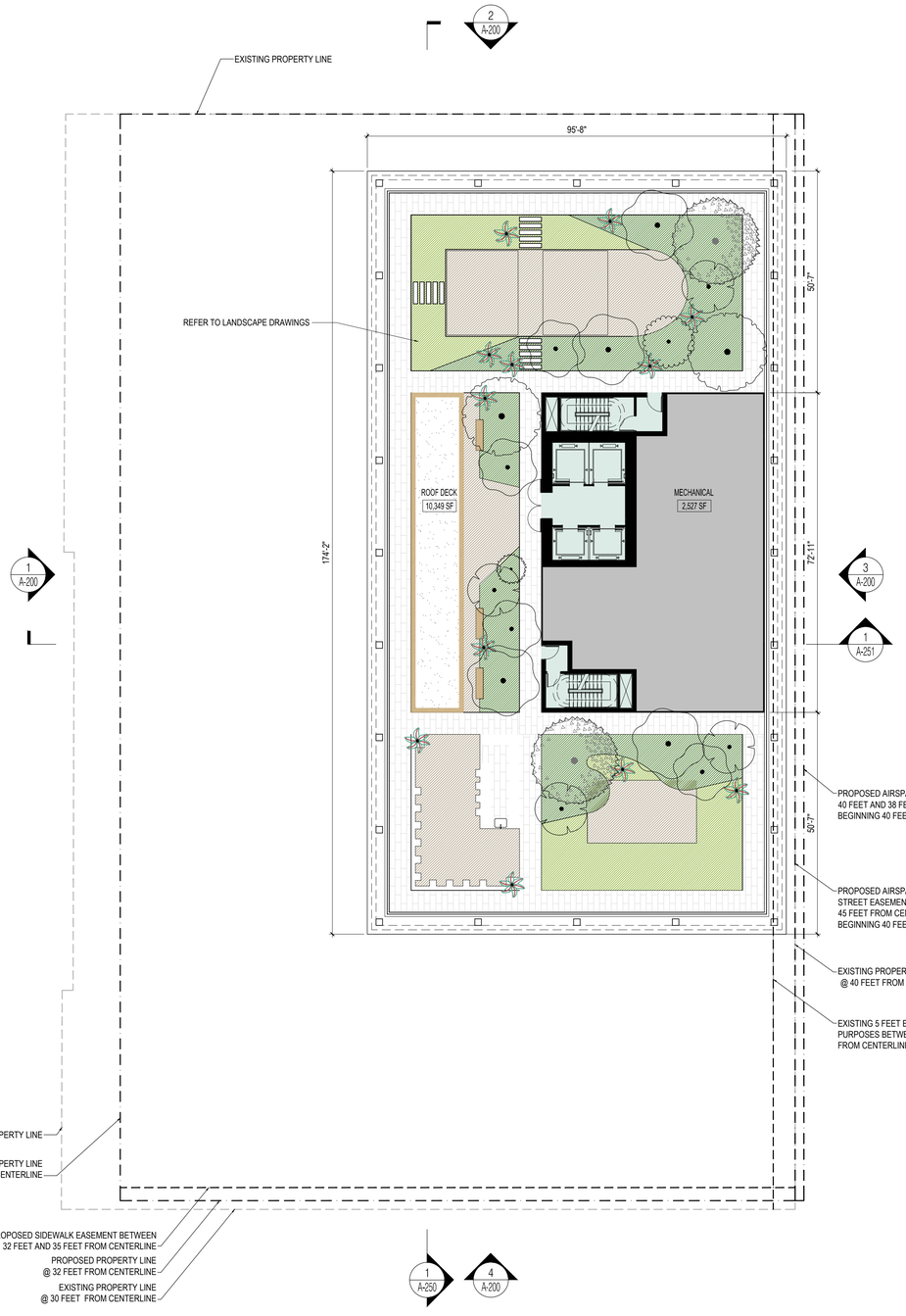
FLOOR PLANS: 55TH & 56TH-60TH FLOOR

A-108



1 61ST-70TH FLOOR PLAN
SCALE: 1/16" = 1'-0"

LEVELS 61-70							UNITS/FL.	# OF FLOORS	TOTAL
STUDIO	JUNIOR 1BR	1BR	1BR+D	2BR	2BR+D	3BR			
				2	2	4	8	10	80



2 ROOF PLAN
SCALE: 1/16" = 1'-0"

NEW YORK
250 Park Ave South 3rd Floor
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NO.	DATE	REVISION
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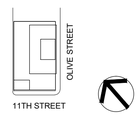
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KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



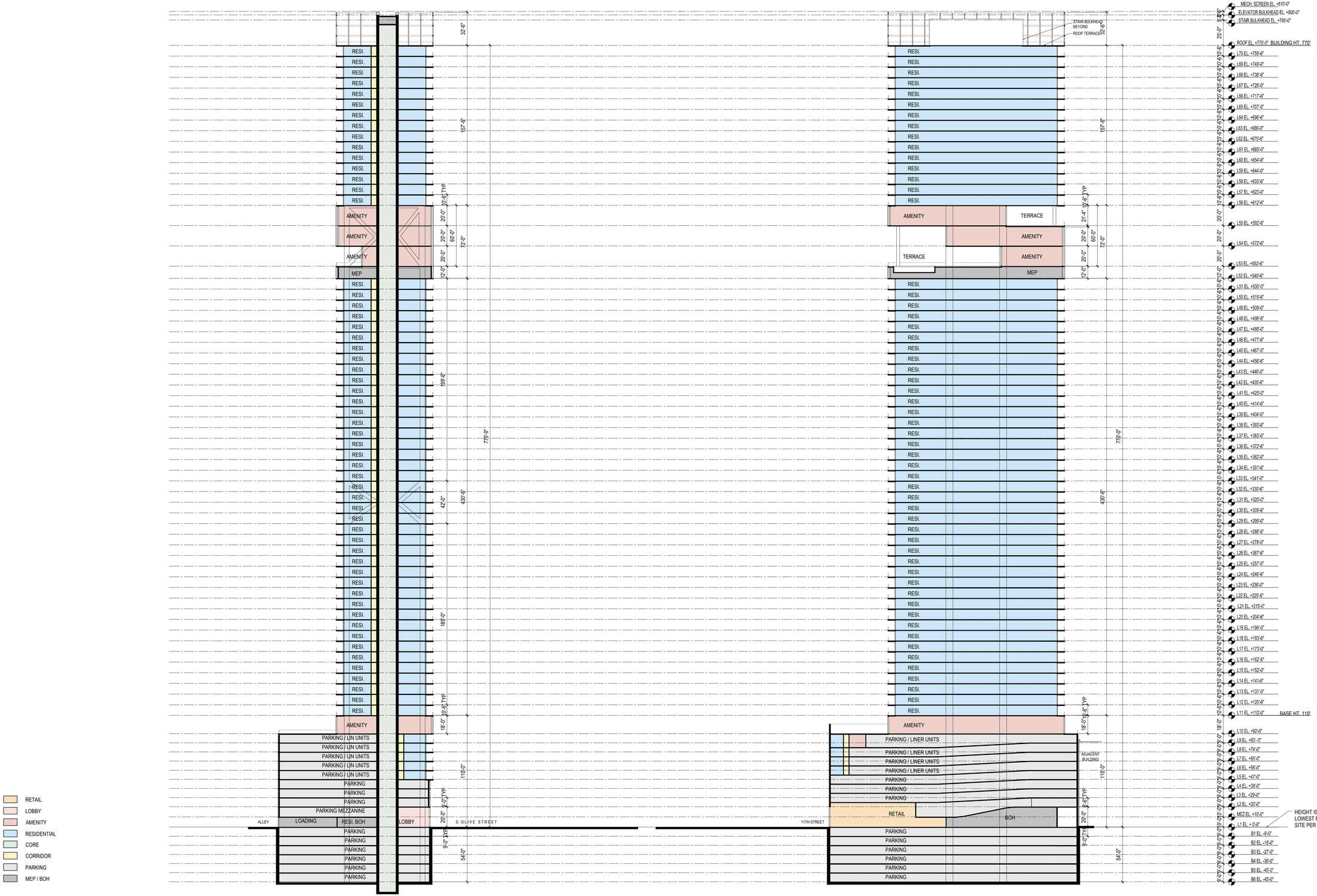
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

FLOOR PLANS: 61ST-70TH FLOOR & ROOF

A-109



1 TRANSVERSE SECTION
SCALE: 3/128" = 1'-0"

2 LONGITUDINAL SECTION
SCALE: 3/128" = 1'-0"

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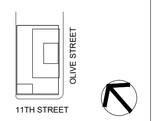
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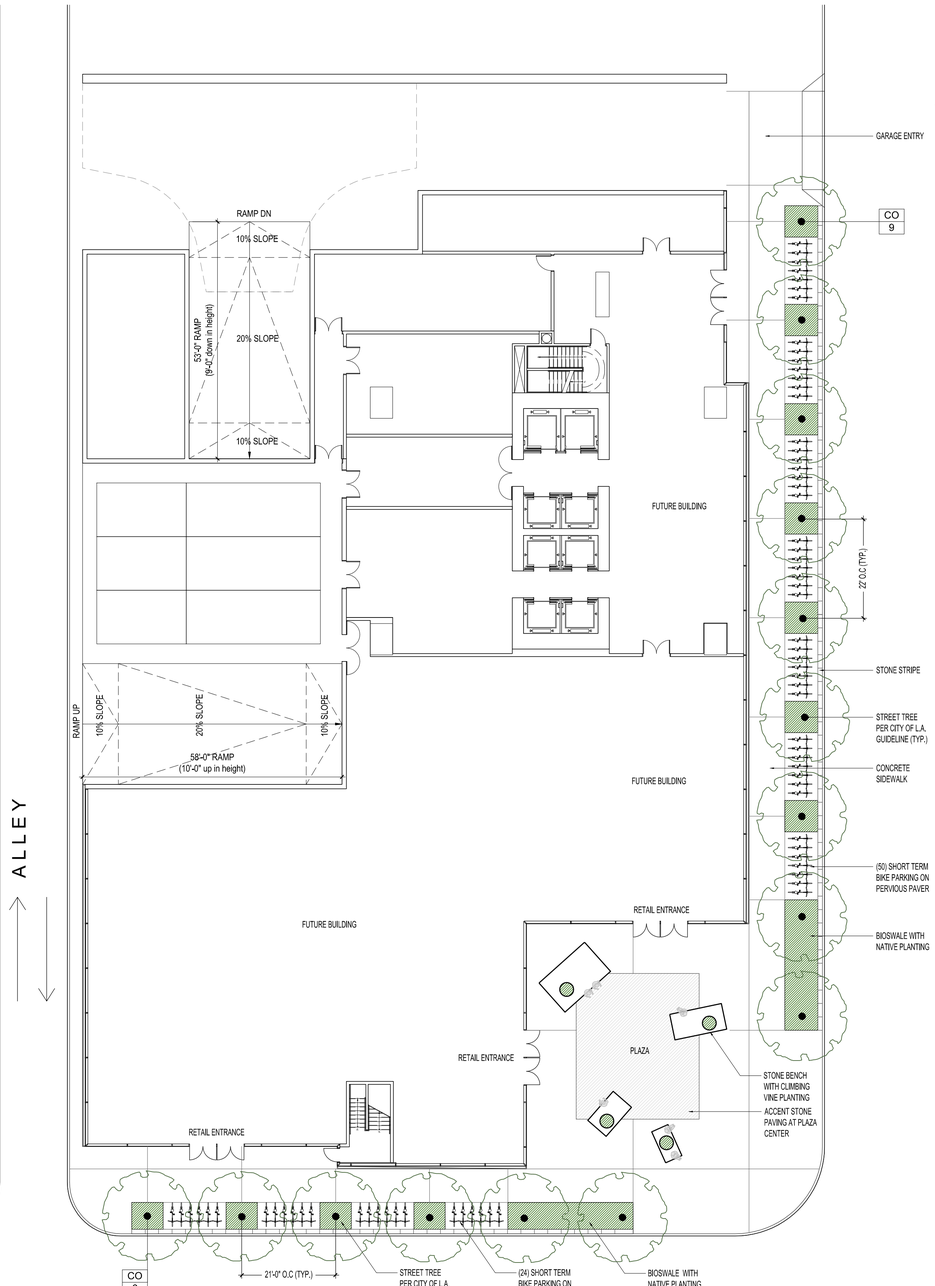
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 3/128"= 1'-0"

BUILDING SECTIONS

A-250



1 1ST FLOOR LANDSCAPE PLAN
SCALE: 1/16" = 1'-0"

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PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT
	CO	15	CELTIS OCCIDENTALIS / COMMON HACKBERRY	36"BOX

SHRUBS AND GROUNDCOVER

REFER TO LANDSCAPE NOTES SHEET FOR CONCEPTUAL SHRUBS AND GROUNDCOVER SPECIES AND SIZES.

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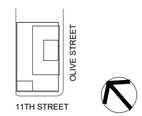
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KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

1ST FLOOR LANDSCAPE PLAN

L-100



1 8-10TH FLOOR LANDSCAPE PLAN
SCALE: 1/16" = 1'-0"

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PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME / COMMON NAME	CONT
AB	5	ACACIA BAILEYANA / BAILEY ACACIA	24"BOX
AM	5	ARBUTUS MENZIESII / PACIFIC MADRONE	24"BOX
BN	10	BETULA NIGRA / RIVER BIRCH MULTI-TRUNK	24"BOX
CW	12	CERCIS OCCIDENTALIS / WESTERN REDBUD MULTI-TRUNK	24"BOX
CM	20	CUPRESSUS MACROCARPA / MONTEREY CYPRESS	24"BOX
ER	1	EUCALYPTUS SIDEROXYLON `ROSEA` / RED IRONBARK	36"BOX
MM	2	MAGNOLIA GRANDIFLORA `MAJESTIC BEAUTY` TM / SOUTHERN MAGNOLIA	24"BOX
OM	4	OLEA EUROPAEA / OLIVE MULTI-TRUNK	36"BOX
PR	4	PINUS RADIATA / MONTEREY PINE	24"BOX
PG	402	PODOCARPUS GRACILIOR / FERN PINE	24"BOX
RL	7	RHUS LANCEOLATA / PRAIRIE SUMAC	24"BOX

SHRUBS AND GROUNDCOVER

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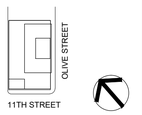
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KEY PLAN

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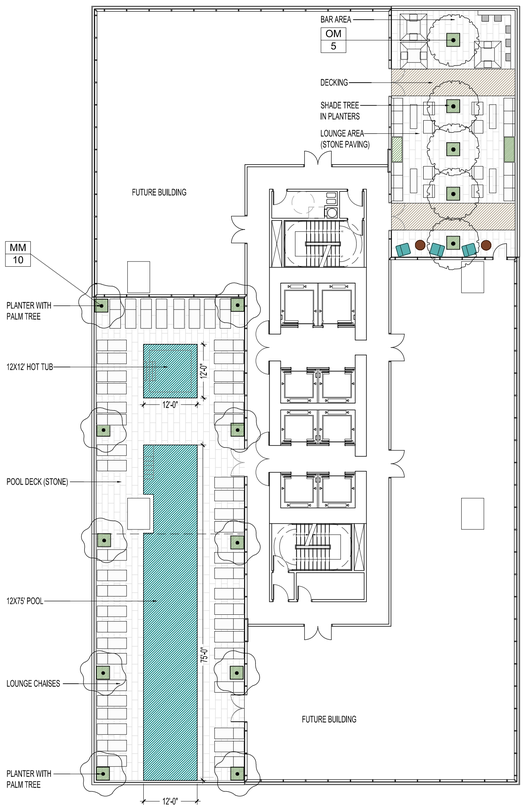
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

8TH & 10TH FLOOR LANDSCAPE PLAN

L-101



1 53RD FLOOR LANDSCAPE PLAN
SCALE: 1/16" = 1'-0"

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PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME / COMMON NAME	CONT
MM	10	MAGNOLIA GRANDIFLORA `MAJESTIC BEAUTY` TM / SOUTHERN MAGNOLIA	24"BOX
OM	5	OLEA EUROPAEA / OLIVE MULTI-TRUNK	36"BOX

SHRUBS AND GROUNDCOVER

REFER TO LANDSCAPE NOTES SHEET FOR CONCEPTUAL SHRUBS AND GROUNDCOVER SPECIES AND SIZES.

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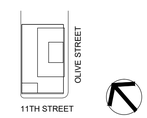
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KEY PLAN

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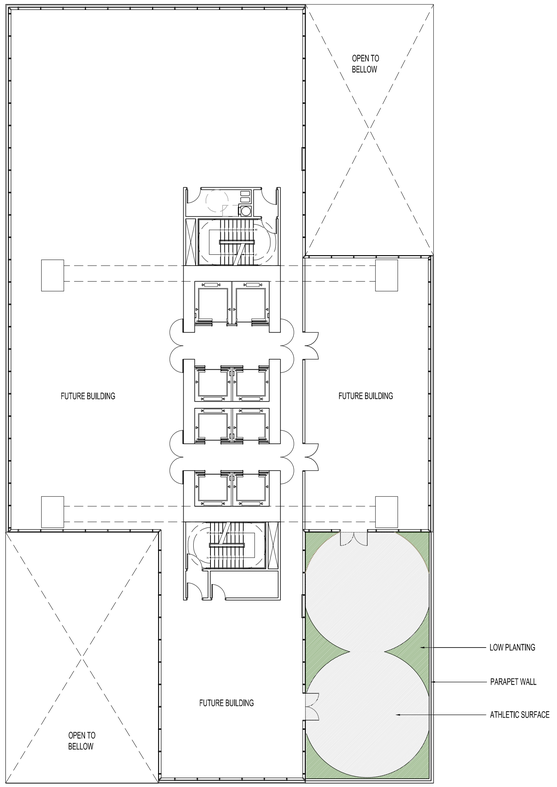
1045 OLIVE

NEW CONSTRUCTION

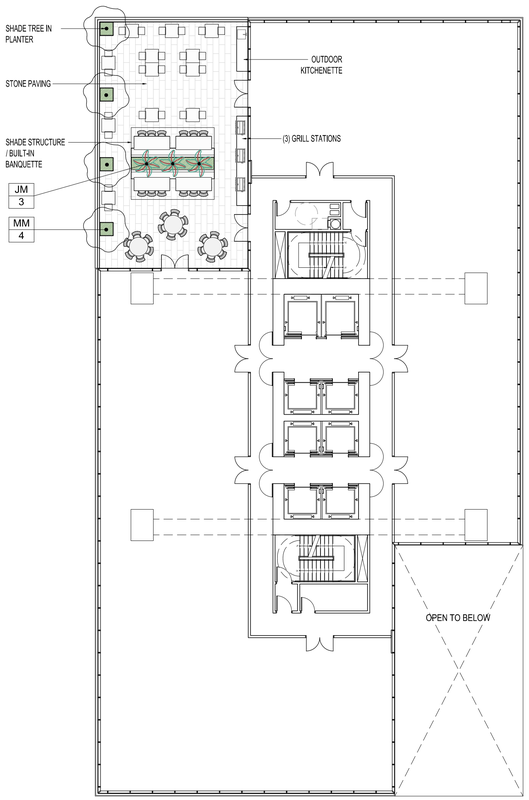
PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

53RD FLOOR LANDSCAPE PLAN

L-102



1 54TH FLOOR LANDSCAPE PLAN
SCALE: 1/16" = 1'-0"



2 55TH FLOOR LANDSCAPE PLAN
SCALE: 1/16" = 1'-0"

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PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME / COMMON NAME	CONT
JM	3	JACARANDA MIMOSIFOLIA / JACARANDA MULTI-TRUNK	24"BOX
MM	4	MAGNOLIA GRANDIFLORA `MAJESTIC BEAUTY` TM / SOUTHERN MAGNOLIA	24"BOX

SHRUBS AND GROUNDCOVER

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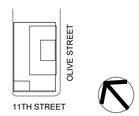
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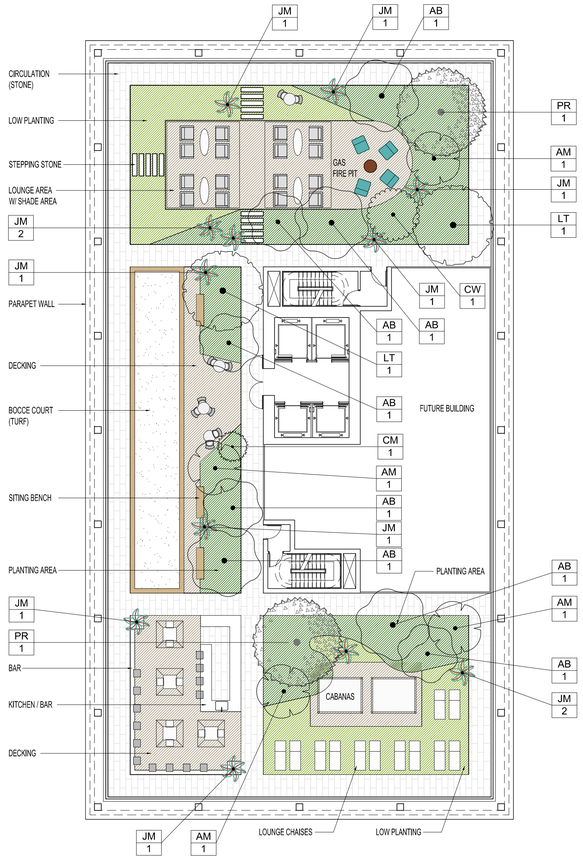
1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

54TH-55TH FLOOR LANDSCAPE PLAN

L-103



1 ROOF LANDSCAPE PLAN
SCALE: 1/16" = 1'-0"

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AM	4	ARBUTUS MENZIESII / PACIFIC MADRONE	24"BOX
CW	1	CERCIS OCCIDENTALIS / WESTERN REDBUD MULTI-TRUNK	24"BOX
CM	1	CUPRESSUS MACROCARPA / MONTEREY CYPRESS	24"BOX
JM	12	JACARANDA MIMOSIFOLIA / JACARANDA MULTI-TRUNK	24"BOX
LT	2	LIRIODENDRON TULIPIFERA / TULIP TREE	36"BOX
PR	2	PINUS RADIATA / MONTEREY PINE	24"BOX

SHRUBS AND GROUNDCOVER

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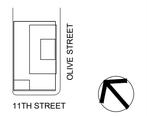
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T. (949) 474-1591

KEY PLAN

1033, 1041, 1045, 1053, 1057 S. OLIVE ST
LOS ANGELES, CA 90015



1045 OLIVE

NEW CONSTRUCTION

PROJECT NO:1658.00 | SCALE: 1/16" = 1'-0"

ROOF GARDEN LANDSCAPE PLAN

L-104

IRRIGATION NOTES:

1. ALL IRRIGATION IMPROVEMENTS SHALL FOLLOW WATER EFFICIENCY ORDINANCE AB 1881, THE CITY OF LOS ANGELES GUIDELINES, AND COUNTY OF LOS ANGELES GUIDELINES.
2. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED TO PROVIDE COVERAGE FOR ALL PLANTING AREAS SHOWN ON THE PLAN. LOW VOLUME EQUIPMENT SHALL PROVIDE SUFFICIENT WATER FOR PLANT GROWTH WITH A MINIMUM WATER LOSS DUE TO WATER RUN-OFF. IRRIGATION SYSTEMS SHALL USE HIGH QUALITY AUTOMATIC CONTROL VALVES, CONTROLLERS, AND OTHER NECESSARY IRRIGATION EQUIPMENT. ALL COMPONENTS SHALL BE OF NON-CORROSIVE MATERIAL. ALL DRIP SYSTEMS SHALL BE ADEQUATELY FILTERED AND REGULATED PER THE MANUFACTURER'S RECOMMENDED DESIGN PARAMETERS.
3. THE IRRIGATION SYSTEM SHALL UTILIZE DRIP IRRIGATION, HIGH EFFICIENCY SPRAY HEADS, AND/OR BUBBLERS. THE SYSTEM CONTROLS SHALL BE SELF ADJUSTING VIA ON SITE WEATHER DATA AND HISTORICAL WEATHER DATA.THE SYSTEM SHALL BE DESIGNED FOR DEDICATED HYDROZONES BASED ON PLANT WATER REQUIREMENTS AND IRRIGATION EFFICIENCY.
4. THE DESIGN OF THE IRRIGATION SYSTEM SHALL INCLUDE A WATER BUDGET, A DEDICATED WATER METER, A WEATHER BASED CONTROLLER, AND BE DESIGNED BY AN EPA WATERSENSE PARTNER.
5. THE IRRIGATION PRODUCTS SELECTED SHALL COME FROM COMMERCIAL GRADE IRRIGATION MANUFACTURING COMPANIES WITH OUTSTANDING TECHNICAL SUPPORT, INCLUDING RAINBIRD AND HUNTER.
6. THE IRRIGATION COMPONENTS TOGETHER SHALL PROVIDE AN IRRIGATION EFFICIENCY RATING EQUAL TO OR GREATER THAN 80%.
7. ESTIMATED WATER USAGE CALCULATIONS, SCHEDULES, AND POINT OF CONNECTION WATER PRESSURE CALCULATIONS SHALL BE MADE AVAILABLE AT THE PERMIT SUBMITTAL PHASE. ALL CALCULATIONS AND FACTORS SHALL BE DERIVED FROM CALIFORNIA ASSEMBLY BILL 1881.

PLANTING NOTES:

1. ALL LANDSCAPE PLANTING IMPROVEMENTS SHALL FOLLOW THE CITY OF LOS ANGELES GUIDELINES, AND COUNTY OF LOS ANGELES GUIDELINES.

2. THE SELECTION OF PLANT MATERIAL IS BASED ON CULTURAL, AESTHETIC, WATER EFFICIENCY, AND MAINTENANCE CONSIDERATIONS.

3. ALL PLANTING AREAS SHALL BE PREPARED WITH APPROPRIATE SOIL AMENDMENTS, FERTILIZERS, AND APPROPRIATE SUPPLEMENTS BASED UPON A SOILS REPORT FROM A SAMPLE TAKEN FROM THE PROJECT SITE.

4. GROUNDCOVER OR BARK MULCH SHALL FILL IN BETWEEN THE SHRUBS TO SHIELD THE SOIL FROM THE SUN, EVAPOTRANSPIRATION, AND RUNOFF. ALL SHRUB BEDS SHALL BE MULCHED TO A 3" DEPTH TO HELP CONSERVE WATER, LOWER THE SOIL TEMPERATURE, AND REDUCE WEED GROWTH.

5. TREES AND SHRUBS SHALL BE ALLOWED TO GROW TO THEIR NATURAL FORMS.

6. FINAL LANDSCAPE PLANS SHALL ACCURATELY SHOW PLACEMENT OF TREES, SHRUBS, AND GROUNDCOVERS.

7. ALL REQUIRED LANDSCAPE PLANTING AREAS SHALL BE MAINTAINED BY OWNER PER THE CITY'S REQUIREMENTS.

8. THE LANDSCAPE ARCHITECT SHALL BE AWARE OF UTILITY, SEWER, AND STORM DRAIN

GENERAL NOTES:

THE IMAGES, ILLUSTRATIONS, DRAWINGS, AND STATEMENTS ("INFORMATION") CONTAINED HEREIN ARE CONCEPTUAL ONLY AND BASED UPON A PRELIMINARY REVIEW OF ENTITLEMENT REQUIREMENTS; THUS ARE SUBJECT TO CHANGE DURING THE DESIGN REVIEW PROCESS. THE INFORMATION IS PROVIDED MERELY TO ASSIST IN EXPLORING HOW THE SITE MAY EVENTUALLY BE DEVELOPED. CONSEQUENTLY, THERE IS NO GUARANTEE THAT THE IMPROVEMENTS DEPICTED WILL BE BUILT, OR IF BUILT, WILL BE OF THE SAME TYPE, MATERIAL, SIZE, DENSITY, APPEARANCE, OR USE AS PRESENTED.

CONCEPTUAL PLANT LIST:

SHRUBS	BOTANICAL NAME / COMMON NAME	SIZE	FIELD2	SPACING
AL	ACACIA REDOLENS `LOWBOY` / BANK CATCLAW	1 GAL	2` O.C	48" o.c.
AH	AGAVE ATTENUATA `HUNTINGTON BLUE` / CENTURY PLANT	3 GAL	3` O.C	48" o.c.
AH2	ALOE X `HERCULES` / HERCULES ALOE	5 GAL	2` O.C	48" o.c.
BP	BACCHARIS PILULARIS / DWARF COYOTE BRUSH	5 GAL	2` O.C	48" o.c.
BB	BOUGAINVILLEA BRASILIENSIS `PURPLE` / PURPLE BOUGAINVILLEA	5 GAL	3` O.C	48" o.c.
CL	CALLISTEMON CITRINUS `LITTLE JOHN` / DWARF BOTTLE BRUSH	5 GAL	2` O.C	48" o.c.
CS	CALLISTEMON SALIGNUS / WHITE BOTTLEBRUSH	5 GAL	2` O.C	48" o.c.
CM2	CARISSA MACROCARPA / NATAL PLUM	1 GAL	2` O.C	48" o.c.
CA	CORDYLINE AUSTRALIS / GRASS PALM	15 GAL	4` O.C	48" o.c.
DI	DIANELLA INTERMEDIA / TURUTU	5 GAL	2` O.C	48" o.c.
D`	DIANELLA REVOLUTA `KENTLYN` / DIANELLA KENTLYN	5 GAL	2` O.C	48" o.c.
DD	DRACAENA DRACO / DRAGON TREE	15 GAL	5` O.C	48" o.c.
EB	ECHEVERIA X `BLUE ATOLL` / BLUE ATOLL ECHEVERIA	1 GAL	1` O.C	48" o.c.
EV	ECHINOCACTUS POLYCEPHALUS POLYCEPHALUS / COTTONTOP CACTUS	5 GAL	1` O.C	48" o.c.
FP	FRAGARIA X ANANASSA `PUGET SUMMER` / LATE SEASON STRAWBERRIES	1 GAL	2` O.C	48" o.c.
HP	HESPERALOE PARVIFLORA / RED YUCCA	5 GAL	2` O.C	48" o.c.
HC	HEUCHERA CANYON SERIES `CANYON DELIGHT` / CORAL BELLS	1 GAL	2` O.C	48" o.c.
JP	JUNCUS PATENS / CALIFORNIA GRAY RUSH	5 GAL	3` O.C	48" o.c.
KA	KECKIELLA ANTIRHINNOIDES / YELLOW PENSTEMMON	1 GAL	2` O.C	48" o.c.
LA	LAVATERA ASSURGENTIFLORA / MALLOW	5 GAL	3` O.C	48" o.c.
LC	LEUCADENDRON X `CLOUDBANK GINNY` / CONEBUSH	5 GAL	4` O.C	48" o.c.
LB	LEUCOPHYLLUM FRUTESCENS `BERTSTAR DWARF` / TEXAS SAGE	15 GAL	4` O.C	48" o.c.
MA	MAHONIA AQUIFOLIUM / OREGON GRAPE	5 GAL	2` O.C	48" o.c.
MB	MUHLENBERGIA BUSHII / NODDING MUHLY	5 GAL	3` O.C	48" o.c.
PA	PITTOSPORUM ANGUSTIFOLIUM	5 GAL	2` O.C	48" o.c.
PN	PODOCARPUS NERIIFOLIUS / BROWN PINE	15 GAL	4` O.C	48" o.c.
SM3	SAMBUCUS MEXICANA / MEXICAN ELDERBERRY	15 GAL	5` O.C	48" o.c.
SM4	SENECIO MANDRALISCAE / BLUE FINGER	1 GAL	1` O.C	48" o.c.
WF	WESTRINGIA FRUTICOSA / COAST ROSEMARY	5 GAL	2` O.C	48" o.c.

ODA NEW YORK
250 Park Ave South 3rd Floor
New York, New York 10003
646-478-7455

NO.	DATE	REVISION
	08/07/2017	ENTITLEMENT SUBMISSION

OWNER / APPLICANT

1045 OLIVE, LLC
2200 BISCAYNE BLVD
MIAMI, FL 33137

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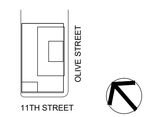
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KEY PLAN

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1045 OLIVE

NEW CONSTRUCTION

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GENERAL NOTES

L-105

4. Environmental Leadership Development Project (ELDP) Application, Part 3

Exhibit 2 Project Renderings



CPCRH05.EP

SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-4
Conceptual Project Rendering

ESA



Plaza and Commercial at 11th Street and Olive Street



Commercial and Residential Entry on Olive Street



Nighttime - Residential Amenity Floors

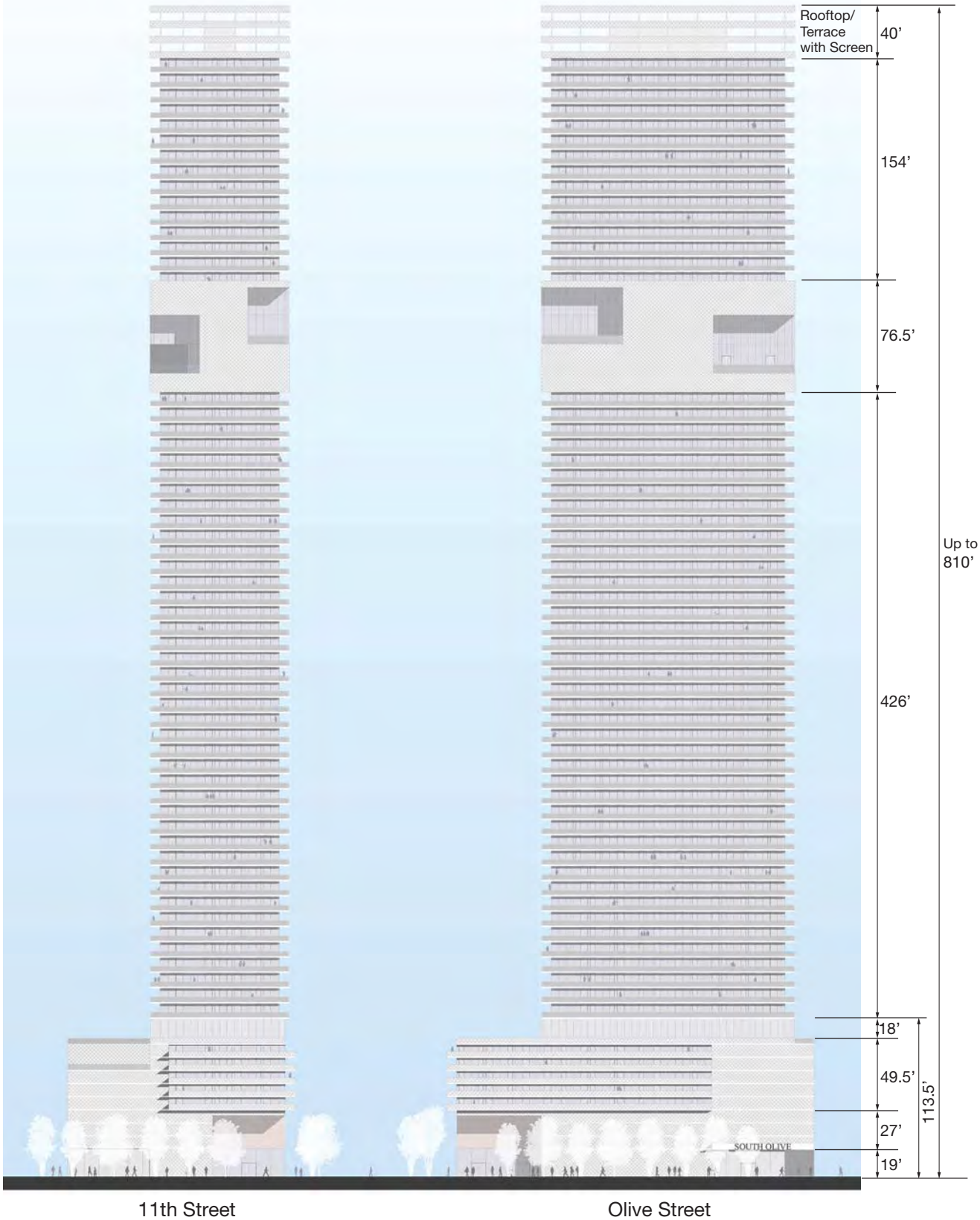
CPCRH05.EP

SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-5
Selected Rendering Details

ESA



Note: Building heights shown are approximate.

CPCRH05.EP

SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-6
Conceptual 11th Street and Olive Street Elevations

ESA

Exhibit 3 GHG Emissions Offset Approach for the 1045 Olive Street Project / Commitment Letter and LEED Measures

December 19, 2017

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: Greenhouse Gas Emissions Offset Approach for the 1045 Olive Project

Dear Ms. Huang:

This letter is provided as a supplement to the application filed by 1045 Olive, LLC. (the "Project Applicant"), who proposes to develop the 1045 Olive Project (the "Project") in the Central City Community Plan and the City Center Redevelopment Plan Project area of the City of Los Angeles.

As you know, the Project Applicant has applied for certification by the Governor as a leadership project under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (collectively, "AB 900" or the "Act"). The application includes projected emissions for the Project that show certain projected net additional emissions of greenhouse gases (GHG) as a result of the construction of the Project and as a consequence of Project operations. The Project Applicant proposes to meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through the implementation of GHG-reducing Project Design Features and/or acquisition of voluntary carbon credits sufficient to offset all projected additional emissions, in the following manner:

1. No later than six (6) months after the issuance of a Temporary Certificate of Occupancy for the Project, the Project Sponsor shall provide to the lead agency, the City of Los Angeles, a calculation of the net additional emissions resulting from the construction of the Project (the "Construction Emissions"), to be calculated in accordance with the methodology agreed upon by the Air Resources Board (ARB) in connection with the AB 900 certification of the Project (the "Agreed Methodology"). Project Sponsor shall provide courtesy copies of the calculations to the ARB and the Governor's Office promptly following transmittal of the calculations to the City of Los Angeles. Project Sponsor shall enter into one or more contracts for the implementation of GHG-reducing Project Design Features and/or purchase voluntary carbon credits from a qualified GHG emissions broker in an amount sufficient to offset the Construction Emissions. The Project Sponsor shall provide courtesy copies of any such contracts to the ARB and the Governor's Office promptly following the execution of such contracts.

2. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits from a qualified GHG emissions broker (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

   Prior to execution of the contract(s), the Applicant and its consultant shall calculate the Operational Emissions, in accordance with the methodology described in the Applicant's "Application for Environmental Leadership Development Project," specifically the "Greenhouse Gas Emissions Methodology and Documentation" prepared by Environmental Science Associates (ESA).

   Once the City has had an opportunity to review and approve the methodology and associated calculations, the Applicant shall provide copies of the calculation methodology to the California Air Resources Board (CARB) and Governor's Office of Planning and Research (OPR), which is then subject to a determination signed by the Executive Officer of CARB pursuant to the procedures set forth in Section 6 of OPR's Guidelines. The City will issue a Certificate of Occupancy upon receipt of the following: (1) a fully executed copy of the carbon offset purchase agreement(s); (2) a final CARB Determination that the Project will not result in any net additional GHG emissions; and (3) a copy of OPR's Certification Letter for the Project.

3. The following project design features were accounted for in the AB 900 application for purposes of reducing GHG emissions and are, therefore, included as commitments in this letter.

   A. The design of the new buildings shall incorporate features to be capable of achieving Gold certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)-CS® or LEED-NC® Rating System as of January 1, 2011. Specific sustainability features that are integrated into the Project design to enable the Project to achieve at least LEED® Gold certification would include but not be limited to the following:

      a. The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.

      b. The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

c. The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.

d. The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

e. The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.

f. The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

B. The residential units within the Project shall not include the use of natural gas-fueled fireplaces.

The commitments outlined herein will be incorporated into the Project's Final Environmental Impact Report (FEIR) as a proposed improvement measure. The Project Sponsor will agree to comply with all improvement measures and mitigation measures contained in the FEIR through the Project's Mitigation Monitoring and Reporting Program, which represents a binding and enforceable agreement with the Project's lead agency, the City of Los Angeles.

Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Elliott Kahn
Its: Authorized Signatory

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

1045 Olive Project

LEED Measures

The following list highlights the main sustainability strategies to be implemented into the 1045 Olive Project in order to achieve Gold certification or greater under LEED v3 or the LEED v4 rating system, as applicable. This is in addition to the strategies needed to reduce the greenhouse gas (GHG) emissions, as required by the California Air Resources Board (CARB).

Design

- Prior to Project approvals, a preliminary LEED action plan will be submitted to the City of Los Angeles Department of City Planning. Prior to issuance of a building permit, conduct a preliminary LEED meeting with a minimum of four key Project team members and the owner or owner's representative. As part of the meeting, review a LEED action plan that, at a minimum (1) determines the LEED certification level to pursue (Gold or Platinum); (2) selects the LEED credits to meet the targeted certification level; and (3) identifies the responsible parties, including but not limited to the Los Angeles Department of Building and Safety, the City of Los Angeles Department of City Planning, the City of Los Angeles Department of Public Works, Bureau of Engineering, to ensure the LEED requirements for each prerequisite and selected credit are met. Modifications to the selected criteria are permissible during construction as long as the targeted LEED certification level continues to be met.

Site

- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

Transportation

- The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to the site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

Water Quality

- Use of on-site storm water treatment in accordance with City standards.
- Installation of catch basin inserts and screens to provide runoff contaminant removal in accordance with City standards.
- Preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plan (SUSMP), both of which would include Best Management Practices (BMPs) to control stormwater runoff, minimize pollutant loading and erosion effects during and after construction.

Energy Conservation and Efficiency

- Use of full-cutoff or fully shielded on-street lighting oriented to pedestrian areas/sidewalks so as to minimize overlighting, light trespass, and glare.
- Inclusion of outdoor air flow measuring devices, additional outdoor air ventilation, and use of low emitting materials to promote indoor environmental quality.
- Use of refrigerants that reduce ozone depletion.
- Provision of conduit that is appropriate for future photovoltaic and solar thermal collectors.
- Post-construction commissioning of building energy systems performed on an ongoing basis to ensure all systems are running at optimal efficiency.
- Purchase of renewable source power (“green power”) or implementation of other carbon offset programs or carbon offset purchases to minimize carbon emissions.
- Review of commissioning activities by an independent Commissioning Agency and development and implementation of commissioning plan.
- Implementation of building level energy meter to provide monthly tracking of energy consumption.
- Provision of metering for tenant space.

Solid Waste

- Provision of on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied.

- Implementation of a construction waste management plan to recycle and/or salvage a minimum of 65 percent of nonhazardous construction debris.

- Diversion of construction materials from landfill. Diversion must include at least three material streams (e.g., recovery, reuse, and recycling).

Air Quality

- Employment of practices that prohibit the use of chlorofluorocarbons (CFCs) in heating, ventilation, and air conditioning (HVAC) systems.

- Installation of MERV 11 filtration at outside air intakes to improve indoor air quality (per LEED minimum indoor air quality performance requirements).

- Meeting applicable California and/or Los Angeles air emissions requirements for all heating or cogeneration equipment utilized at the Project Site.

- Installation of landscaping and canopy trees throughout the Project Site, including roof decks, pool decks, and terraces, to provide shading and capture carbon dioxide (CO_2) emissions.

- Use of adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air pollutants.

- Development of an Indoor Air Quality Management Plan for construction and pre-occupancy phases.

- Provision of individual control on thermostats to 50 percent of building occupants. For residential buildings, the credit can be achieved by providing access to operable windows. For commercial spaces, control must be provided to 50 percent of occupants in order to meet the intent of the credit.

- HVAC system design compliance to ASHRAE 55. The Core & Shell base building mechanical systems must allow for the tenant build-out to meet the requirement of this credit.

Exhibit 4 AB 900 Traffic Assessment for the 1045 Olive Street Project

The **Mobility** Group
Transportation Strategies & Solutions

Memorandum

To: Alan Sako, ESA

From: Michael Bates, Iain Conway

Subject: 1045 S Olive Project – AB 900 Traffic Assessment

Date: October 2, 2017

This Memorandum provides a transportation assessment of the 1045 S Olive Project to determine whether it meets the transportation efficiency requirements for classification as an Environmental Leadership Development Project under California Assembly Bill 900 (AB 900).

1. Project Location

The Project Site is located in downtown Los Angeles, the dense, mixed-use urban core of the extensive metropolitan region. Downtown Los Angeles serves as the hub of the regional transit system with many regional rail and bus public transit services passing through or beginning and terminating services there. Downtown Los Angeles is also a highly walkable and bicycle-friendly area.

The Project Site is located at the northwest corner of Olive Street and 11th Street, and is bounded by Olive Street on the east, 11th Street on the south, an alley on the west and private property on the north. The block on which the Project is located is also bounded by Grand Avenue on the west and Olympic Boulevard to the north. The surrounding area includes a large range of newer mixed-use development, and older commercial, office, residential and warehouse uses.

The Project Site is directly served by Olive Street and 11th Street, which are designated as a Modified Avenue II and a Modified Collector Street respectively, in the City of Los Angeles Mobility Plan 2035. Adjacent streets are Grand Avenue and Olympic Boulevard which are designated as a Modified Avenue II and a Modified Avenue I respectively. There are bike lanes on Olive Street and on Grand Avenue.

The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is located less than 0.5 miles from the Pico Metro Station at Pico Boulevard and Flower Street. The Pico Metro Station serves the Metro Blue Line (Downtown Los Angeles – Long Beach) and Metro Expo Line (Downtown Los Angeles – Santa Monica), which travel at 6-minute and 12-minute intervals during weekday peak hours. These services terminate at 7th Street Metro Center Station in Downtown Los Angeles, providing access to the Metro Red and Purple Lines. The Project Site is also located within 0.7 miles of the 7th Street/Metro Center Station, which serves the Metro Red Line (Downtown Los Angeles – North Hollywood / Universal City) and Metro Purple Line (Downtown Los Angeles – Koreatown), which travel at 5-minute intervals during weekday peak hours. The Metro Red and Purple Lines also provide access to Union Station, with connections to the Metro Gold Line and the Metrolink Commuter Rail system.

The 1.9 mile Metro Regional Connector Project is currently under construction to connect Union Station and the 7th Street/Metro Center Station and will serve Little Tokyo, the Arts District, Civic Center, The Historic Core, Broadway, Grand Avenue, Bunker Hill, Flower Street and the Financial District. Additionally, the Regional Connector will provide direct connections between the Metro Gold Line and the Blue, Expo, Red and Purple Lines at 7th Street/Metro Center Station, eliminating the need for passenger transfers.

The Project Site is located approximately 0.27 miles east of Figueroa Street. The MyFig Project is currently being implemented on Figueroa Street and will add protected bike lanes, enhanced sidewalks, landscaping and pedestrian facilities, which along with the existing northbound bus lane will transform the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFig Project will also install a protected bike lane and similar enhancements along the north side of 11th Street from Broadway to Figueroa Street.

The Los Angeles Streetcar is a streetcar project planned for downtown Los Angeles, which will run on streets in a loop connecting the Civic Center, Broadway Corridor, Financial District and 7th Street. In the vicinity of the Project, it will run south on Broadway, west on 11th Street immediately adjacent to the Project, and north on Figueroa Street.

Bicycle facilities in the Project Area include bike lanes on Olive Street, Grand Avenue and Spring Street (3 blocks east of the Project). Additionally, there are bike lanes planned on Flower Street (3 blocks west of the Project) and Broadway (2 blocks east of the Project), according to City of Los Angeles' Mobility Plan 2035.

Metro Bike Share is a bicycle-sharing system with approximately 60 stations in and around downtown Los Angeles. Many stations are located at transit hubs, such as Union Station and

7th Street/Metro Center Station. Access to the system is provided 24 hours per day and payment can be made for an individual trip or on a monthly basis. The nearest stations to the Project Site are located at 11th Street & Hope Street, 12th Street & Hill Street and Olympic Boulevard & Grand Avenue, each being approximately a two-block walk from the Project Site.

2. Project Description

The Project Site is currently occupied by four commercial buildings totaling 35,651 sq. ft. and approximately 5,952 square feet paved parking area. The four buildings are one-story in height and are reflective of the older single story development in the Downtown area. Existing active land uses include 14,653 sq. ft. of manufacturing space and 5,171 sq. ft. of retail space. The remaining 15,827 sq. ft. is currently vacant.

The Proposed Project is a mixed-use development comprising 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground and mezzanine levels. The commercial space has been conservatively assessed as half high-turnover restaurant and half quality restaurant for trip generation purposes. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors. Approximately 100,652 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and public art display (Plaza). On-site open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies.

3. Site Access and Circulation

Vehicle access would be provided from one driveway on Olive Street, near the northern property line, and from two driveways on the alley between 11th Street and Olympic. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. An additional service driveway on the alley near the center of the Project Site would provide access to on-site loading and move-in/out services.

Pedestrian access to the Project Site would be provided from a 17-foot sidewalk along Olive Street. Access to the retail uses would be provided from a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street and the 17-foot sidewalk along Olive Street. Pedestrian access into the local neighborhood is facilitated by a midblock signalized pedestrian crosswalk on Olive Street between Olympic Boulevard and 11th Street and signalized crosswalks at all intersections in the vicinity of the Project. Additionally, there are midblock crosswalks on Grand Avenue south of 14th Street, on Hill Street (one block east of the Project) between 8th Street and 9th Street and between 11th Street and 12th Street, on Broadway (2 blocks east of the

Project) between 8th Street and 9th Street, between 9th Street and Olympic Boulevard, between Olympic Boulevard and 11th Street and between 11th Street and 12th Street.

The Project Site is located on the downtown bicycle network, comprising a bike lane on Grand Avenue, half a block west of the Project Site and by a bike lane running along Olive Street adjacent to the Project Site. The wider Project Area contains a high-level of bicycle access, with bike lanes as described earlier in Section 1.

4. Existing Transit Service

The Project Site is served by numerous transit lines within a one block walking distance on Olive Street, Grand Avenue, and Olympic Boulevard, including two Rapid Lines 770 and 728, eleven Metro lines 14, 28, 37, 70, 71, 76, 78, 79, 378, and 96, one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB 10), and two LADOT Commuter Express Lines CE 431 and CE 437. There are twelve bus services on Olive Street, twelve services on Grand Avenue, nine services on Hill Street, six on Broadway, four on 9th Street, four on Olympic Boulevard, two on 11th Street and one on Pico Boulevard.

The Project Site is located within 0.5 miles of the Pico Light Rail Station, which provides services to the Metro Blue and Expo Lines. The Project Site is also located within 0.7 miles of the 7th Street Metro Center Station, which provides services to Metro Red and Purple Lines. The Metro Blue Line travels between Long Beach Transit Mall and 7th Street Metro Center at 6-minute intervals during weekday peak hours, the Metro Expo Line travels between Santa Monica and Downtown Los Angeles at 12-minute intervals during weekday peak hours, and the Metro Red and Purple Lines travel between North Hollywood and Downtown Los Angeles at 5-minute intervals during weekday peak hours.

5. Project Trip Generation and Vehicle Miles Travelled (VMT)

Trip generation for the Proposed Project was estimated using ITE's 9th Edition Trip Generation Manual, as shown in Table 1. ITE trip rates for Apartments, High-Turnover Restaurant and Quality Restaurant were used for the land uses of the Proposed Project and ITE trip rates for Manufacturing and Specialty Retail were used for the existing uses. The trip generation estimates were adjusted for trip credits for existing active land uses to be removed and reductions for pass-by, transit, walk and internal capture. The Proposed Project is estimated to generate 4,817 net daily trips, 359 net trips in the AM Peak Hour, comprising 79 net inbound trips and 280 net outbound trips and 440 net trips in the PM Peak Hour, comprising 287 net inbound trips and 153 net outbound trips.

The Project type and location enjoy a number of advantages that will reduce the number of trips that will be generated. These include:

- Removal of Existing Uses from the Project Site.
- Internal Capture within Project land uses.
- Use of Transit and Walk/Bike.
- Pass-by trips.
- Transportation Demand Management (TDM) measures.

In order to demonstrate the efficacy of these trip reductions, trip generation was estimated for the Proposed Project without trip credits for the existing active land uses and without reductions for pass-by, transit, walk/bike and internal capture, as shown in Table 2. Trip generation was estimated at 6,637 daily trips, 478 trips in the AM peak hour and 601 trips in the PM peak hour.

Table 2 also shows the estimated vehicle miles travelled (VMT) without trip reductions. Average trip lengths for each land use were estimated using the California Emissions Estimator Model (CalEEMod) for the South Coast Air Basin (LA County except for the Antelope Valley, Orange County, and the urbanized portions of Riverside and San Bernardino Counties). CalEEMod specifies average trip lengths for the South Coast Air Basin by trip purpose (Home-Work, Home-Shop, Home-Other, Commercial-Customer, Commercial-Work and Commercial-Nonwork). For each land use, CalEEMod specifies the proportion of trips that are of each trip purpose, thus enabling the calculation of average trip lengths by land use. Trip lengths were calculated for the Home-Work, Home-Shop, Home-Other trip purposes for the residential units, and for the for the Commercial-Customer, Commercial-Work and Commercial-Nonwork trip purposes for the commercial uses. Table 2 shows the average trip length for each land use. As shown in Table 2, the average trip length from CalEEMod for the South Coast Air Basin is estimated at 10.6 miles for residential apartments, 8.8 miles for high-turnover restaurant and 9.1 miles for quality restaurant. These trip lengths were applied to the Project trips to develop the total vehicle miles traveled (VMT) of the Project.

As shown in Table 2, the Proposed Project prior to accounting for applicable reductions is estimated to generate 68,078 daily VMT, 4,937 VMT in the AM Peak Hour and 6,189 VMT in the PM Peak Hour.

6. Comparable Project

The Proposed Project's performance has been assessed in comparison to a Comparable Project, which represents a baseline case. The Comparable Project has the same land uses and quantities as the Proposed Project, but does not have the location-specific nor the Proposed Project design-specific benefits nor the infill nature of the Proposed Project that would lead to trip reductions.

For the purposes of analysis it is considered that pass-by trip reductions would be equally applicable to the Comparable Project and the Proposed Project, as these reductions are generally applied to all projects in the City of Los Angeles regardless of location, in accordance with LADOT's Transportation Impact Study Guidelines (December 2016). Trip reductions made for the removal of existing buildings are associated with the infill nature of the site of the Proposed Project and would therefore be applicable to the Proposed Project and not to the Comparable Project. Trip reductions made for the Project being located in a highly walkable and transit-friendly area are location-specific benefits and as such, would only be applicable to the Proposed Project. Trip reductions made for the internal capture of trips and trip reductions due to the Transportation Demand Management package are considered to be design-specific benefits of the Proposed Project and therefore would be applicable to the Proposed Project and not to the Comparable Project.

As noted above, reductions for pass-by trips should apply to both the Comparable Project and the Proposed Project. As shown in Table 3, there would be a pass-by reduction of 148 daily trips, 9 trips in the AM peak hour and 12 trips in the PM peak hour. These trip reductions result in reductions of 1,314 daily VMT, 79 VMT in the AM peak hour and 106 VMT in the PM peak hour.

7. Project Related Reductions to Trip Generation and VMT

The Project's infill nature, location, design and TDM program will reduce vehicle trips and VMT compared with the Comparable Project. The quantitative analysis of these reductions to vehicle trips and VMT follows.

Removal of Existing Uses from Project Site

The project site currently has four existing buildings with a total of 19,824 sq. ft. existing active uses, of which 14,653 sq. ft. is manufacturing space and 5,171 sq. ft. is retail space. These land uses would be removed from the site prior to construction of the Proposed Project.

As shown in Table 4, removal of the existing active land uses would eliminate the trips currently generated by those uses, and would result in a reduction of 231 daily trips, 9 trips in the AM peak hour and 20 trips in the PM peak hour. These trip reductions result in reductions of 2,356 daily VMT, 117 VMT in the AM peak hour and 222 VMT in the PM peak hour.

Internal Capture Reduction

The Proposed Project restaurant space would provide a convenient local destination for the residential element of the Proposed Project without having to drive to other locations. It was estimated that 15% of the trips to and from the restaurant space would come from the onsite residential element of the Proposed Project.

As shown in Table 5, there would be an internal capture reduction of 203 daily trips, 11 trips in the AM peak hour and 16 trips in the PM peak hour. These trip reductions result in reductions of 1,811 daily VMT, 97 VMT in the AM peak hour and 143 VMT in the PM peak hour.

Transit & Walk/Bike Reduction

The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Proposed Project. Therefore, it was estimated that vehicle trips would be reduced by 20% due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

As shown in Table 6, the use of transit and walk/bike would reduce vehicle trips by 1,238 daily trips, 90 trips in the AM peak hour and 113 trips in the PM peak hour. These trip reductions result in reductions of 12,751 daily VMT, 933 VMT in the AM peak hour and 1,168 VMT in the PM peak hour.

Transportation Demand Management (TDM) Reduction

The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:

- Promotion and support of carpools and rideshares, including parking and transit incentives.
- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.

- Unbundling of residential parking.

- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.

- Discounts for employees who utilize public transit to travel to the site.

- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
- Participate in the City's Bike Share Program by providing an area for bike share facilities.

The implementation of the TDM package would result in an estimated reduction of 10% of the vehicle trips to and from the residential element of the Proposed Project.

As shown in Table 7, the TDM program would result in a reduction of 426 daily residential trips, 33 trips in the AM peak hour and 40 trips in the PM peak hour. These trip reductions result in reductions of 4,516 daily VMT, 350 VMT in the AM peak hour and 424 VMT in the PM peak hour.

8. Total Proposed Project Trips and VMT

A summary of the total trips and VMT for the Proposed Project and comparison with the Comparable Project is shown in Table 8. It was estimated that the Proposed Project would generate 4,391 daily trips, resulting in 45,330 daily VMT. It was estimated that the Comparable Project would generate 6,489 daily trips, resulting in 66,764 daily VMT.

Table 9 shows a summary of absolute and proportional differences between the generated trips and VMT of the Proposed Project and the Comparable Project. It was estimated that the Proposed Project would generate 32% less daily trips than the Comparable Project, resulting in a reduction of 32% daily VMT compared with the Comparable Project. In the AM peak hour, it was estimated that the Proposed Project would generate 30% less trips than the Comparable Project, resulting in a reduction of 31% AM peak hour VMT compared with the Comparable Project. In the PM peak hour, it was estimated that the Proposed Project would generate 32%

less trips than the Comparable Project, resulting in a reduction of 32% PM peak hour VMT compared with the Comparable Project.

The substantial reductions in generated trips and VMT from the Comparable Project to the Proposed Project noted above are due to the location-specific benefits, the design-specific benefits and the infill nature of the Proposed Project with respect to the Comparable Project.

The analysis shows that the Proposed Project exceeds the threshold of 10% transportation efficiency that is required for the Environmental Leadership Development Project application.

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

Daily Trips

Land Use Assumptions		Source [1] & Code	Quantity	Units	Daily			
						Trip Rate		Total Trips
Existing Uses								
Manufacturing [2,3]		ITE 140	14,653	SF		3.82		-56
(Reduction for transit trips) -	15%							8
(Reduction for walk/bike trips) -	5%							2
Net Manufacturing								-46
Specialty Retail [2,3]		ITE 826	5,171	SF		44.32		-229
(Reduction for transit trips) -	15%							34
(Reduction for walk/bike trips) -	5%							10
Net Specialty Retail								-185
Total Existing								-231
Proposed Uses								
Apartment [2]		ITE 220	794	DU		6.65		5,280
(Reduction for transit trips) -	15%							-792
(Reduction for walk/bike trips) -	5%							-224
Net Apartments								4,264
High-Turnover Restaurant [2]		ITE 932	6,252	SF		127.15		795
(Reduction for internal trips) -	15%							-119
(Reduction for transit trips) -	15%							-101
(Reduction for walk/bike trips) -	5%							-29
(Reduction for pass-by trips) -	20%							-109
Net High-Turnover Restaurant								437
Quality Restaurant [2]		ITE 931	6,252	SF		89.95		562
(Reduction for internal trips) -	15%							-84
(Reduction for transit trips) -	15%							-72
(Reduction for walk/bike trips) -	5%							-20
(Reduction for pass-by trips) -	10%							-39
Net Quality Restaurant								347
Total Proposed								5,048
Total Net								4,817

AM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	AM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.57	0.16	0.73	-8	-3	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-7	-2	-9
Specialty Retail [2,3,4]		ITE 826	5,171	SF	0.00	0.00	0.00	0	0	0
(Reduction for transit trips) -	15%							0	0	0
(Reduction for walk/bike trips) -	5%							0	0	0
Net Specialty Retail								0	0	0
Total Existing								-7	-2	-9
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.10	0.41	0.51	79	326	405
(Reduction for transit trips) -	15%							-12	-49	-61
(Reduction for walk/bike trips) -	5%							-3	-14	-17
Net Apartments								64	263	327
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.95	4.86	10.81	37	31	68
(Reduction for internal trips) -	15%							-6	-4	-10
(Reduction for transit trips) -	15%							-5	-4	-9
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	18	38
Quality Restaurant [2,5]		ITE 932	6,252	SF	0.45	0.36	0.81	3	2	5
(Reduction for internal trips) -	15%							-1	0	-1
(Reduction for transit trips) -	15%							0	-1	-1
(Reduction for walk/bike trips) -	5%							0	0	0
(Reduction for pass-by trips) -	10%							0	0	0
Net Quality Restaurant								2	1	3
Total Proposed								86	282	368
Total Net								79	280	359

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

PM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	PM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.26	0.47	0.73	-4	-7	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-3	-6	-9
Specialty Retail [2,3]		ITE 826	5,171	SF	1.19	1.52	2.71	-6	-8	-14
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	1	1
Net Specialty Retail								-5	-6	-11
Total Existing								-8	-12	-20
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.40	0.22	0.62	318	174	492
(Reduction for transit trips) -	15%							-48	-26	-74
(Reduction for walk/bike trips) -	5%							-14	-7	-21
Net Apartments								256	141	397
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.91	3.94	9.85	37	25	62
(Reduction for internal trips) -	15%							-6	-3	-9
(Reduction for transit trips) -	15%							-5	-3	-8
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	14	34
Quality Restaurant [2]		ITE 932	6,252	SF	5.02	2.47	7.49	31	16	47
(Reduction for internal trips) -	15%							-5	-2	-7
(Reduction for transit trips) -	15%							-4	-2	-6
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	10%							-2	-1	-3
Net Quality Restaurant								19	10	29
Total Proposed								295	165	460
Total Net								287	153	440

Notes:

1. ITE Rates from Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington, DC, 2012, except otherwise noted.
2. Trip rate reductions were applied per LADOT's Transportation Impact Study Guidelines, December 2016.
3. Existing land use data from Crescent Heights and site observations on 9/5/2017.
4. Existing Specialty Retail is closed on weekday mornings, therefore no existing trip credit is claimed for the AM peak hour.
5. Directional Distribution for AM peak from High-Turnover Restaurant, as non published for Quality Restaurant.

Table 2. Proposed Project - Total Unadjusted Project Trips and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation Estimates (Without Trip Reductions)								
Apartments	794 DU	5,280	79	326	405	318	174	492
High-Turnover Restaurant	6,252 SF	795	37	31	68	37	25	62
Quality Restaurant	6,252 SF	562	3	2	5	31	16	47
Total Project Trips Before Reductions		6,637	119	359	478	386	215	601
Vehicle Miles Travelled (Without Trip Reductions)								
Apartments	10.6 Miles	55,968	837	3,456	4,293	3,371	1,844	5,215
High-Turnover Restaurant	8.8 Miles	6,996	326	273	598	326	220	546
Quality Restaurant	9.1 Miles	5,114	27	18	46	282	146	428
Gross Project VMT Before Reductions		68,078	1,190	3,747	4,937	3,979	2,210	6,189

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- DU = Dwelling Unit, SF = Square Feet.

Table 3. Comparable Project - Trips Generated with Pass-by Trip Reduction and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Pass-by Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	20%	109	5	4	9	5	4	9
Quality Restaurant	10%	39	0	0	0	2	1	3
Subtotal - Pass-by Trip Reduction		148	5	4	9	7	5	12
Total Project Trips with Pass-by Reduction		6,489	114	355	469	379	210	589
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	959	44	35	79	44	35	79
Quality Restaurant	9.1 Miles	355	0	0	0	18	9	27
Subtotal - Pass-by VMT Reduction		1,314	44	35	79	62	44	106
Comparable Project VMT		66,764	1,146	3,712	4,858	3,917	2,166	6,083

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Pass-by Trip Reductions based on estimates shown in Table 1.
- Comparable Project VMT calculated as the difference between the Gross Project VMT Before Reductions from Table 2 and the Pass-by VMT Reduction.

Table 4. Proposed Project - Existing Land Uses to be Removed - Trip Reduction and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trips								
Manufacturing	14,653 SF	46	7	2	9	3	6	9
Retail	5,171 SF	185	0	0	0	5	6	11
Existing Project Site Trips		231	7	2	9	8	12	20
Vehicle Miles Travelled								
Manufacturing	13.0 Miles	598	91	26	117	39	78	117
Retail	9.5 Miles	1,758	0	0	0	48	57	105
Existing Project Site VMT		2,356	91	26	117	87	135	222

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Existing Land Use Trip Reductions based on estimates shown in Table 1.

Table 5. Proposed Project - Internal Capture - Trip Reduction and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Internal Capture Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	15%	119	6	4	10	6	3	9
Quality Restaurant	15%	84	0	1	1	5	2	7
Trips Reduced by Internal Capture		203	6	5	11	11	5	16
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	1,047	53	35	88	53	26	79
Quality Restaurant	9.1 Miles	764	0	9	9	46	18	64
VMT Reduced by Internal Capture		1,811	53	44	97	99	44	143

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Internal Capture Trip Reductions based on estimates shown in Table 1.

Table 6. Proposed Project - Transit & Walk/Bike - Trip Reduction and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Transit & Walk Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	20%	1,016	15	63	78	62	33	95
High-Turnover Restaurant	20%	130	6	5	11	6	4	10
Quality Restaurant	20%	92	0	1	1	5	3	8
Trips Reduced by Transit & Walk		1,238	21	69	90	73	40	113
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	10,770	159	668	827	657	350	1,007
High-Turnover Restaurant	8.8 Miles	1,144	53	44	97	53	35	88
Quality Restaurant	9.1 Miles	837	0	9	9	46	27	73
VMT Reduced by Transit & Walk		12,751	212	721	933	756	412	1,168

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transit & Walk Trip reductions based on estimates shown in Table 1.

Table 7. Proposed Project - Transportation Demand Management - Trip Reduction an Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Transportation Demand Management Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	10%	426	6	27	33	26	14	40
High-Turnover Restaurant	0%	0	0	0	0	0	0	0
Quality Restaurant	0%	0	0	0	0	0	0	0
Trips Reduced by Transportation Demand Management		426	6	27	33	26	14	40
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	4,516	64	286	350	276	148	424
High-Turnover Restaurant	8.8 Miles	0	0	0	0	0	0	0
Quality Restaurant	9.1 Miles	0	0	0	0	0	0	0
VMT Reduced by Transportation Demand Management		4,516	64	286	350	276	148	424

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transportation Demand Management Trip Reductions based on net trip generation estimates for proposed land uses shown in Table 1, multiplied by the Transportation Demand Management Reduction %.

Table 8. Comparison of Proposed Project to Comparable Project
Trip Reductions and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Existing Land Use Trip Reduction (From Table 4)	231	7	2	9	8	12	20
Internal Capture Trip Reduction (From Table 5)	203	7	4	11	11	5	16
Transit & Walk Trip Reduction (From Table 6)	1,238	21	69	90	73	40	113
TDM Program Trip Reduction (From Table 7)	426	6	27	33	26	14	40
Net Proposed Project Trips	4,391	73	253	326	261	139	400
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Existing Land Use VMT Reduction (From Table 4)	2,356	91	26	117	87	135	222
Internal Capture VMT Reduction (From Table 5)	1,811	53	44	97	99	44	143
Transit & Walk VMT Reduction (From Table 6)	12,751	212	721	933	756	412	1,168
TDM Program VMT Reduction (From Table 7)	4,516	64	286	350	276	148	424
Net Proposed Project VMT	45,330	726	2,635	3,361	2,699	1,427	4,126

Table 9. Comparison of Proposed Project to Comparable Project
Percentage Trip Reductions and Percentage Vehicle Miles Travelled Reductions

9/22/2017

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Proposed Project (From Table 8)	4,391	73	253	326	261	139	400
Trip Reduction from Comparable Project to Proposed Project	2,098	41	102	143	118	71	189
Percentage Trip Reduction from Comparable Project to Proposed Project	32%	36%	29%	30%	31%	34%	32%
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Proposed Project (From Table 8)	45,330	726	2,635	3,361	2,699	1,427	4,126
VMT Reduction from Comparable Project to Proposed Project	21,434	420	1,077	1,497	1,218	739	1,957
Percentage VMT Reduction from Comparable Project to Proposed Project	32%	37%	29%	31%	31%	34%	32%

Exhibit 5 1045 Olive Street, Fiscal Impact and Economic Benefit Analysis

1045 OLIVE



AN ECONOMIC AND FISCAL IMPACT ANALYSIS



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This report was commissioned by 1045 Olive, LLC

The LAEDC Institute for Applied Economics provides objective economic and policy research for public agencies and private firms. The group focuses on economic impact studies, regional industry analyses, economic forecasts and issue studies, particularly in workforce development, transportation, infrastructure and environmental policy.

Every reasonable effort has been made to ensure that the data contained herein reflect the most accurate and timely information possible and they are believed to be reliable.

This report is provided solely for informational purposes and is not to be construed as providing advice, recommendations, endorsements, representations or warranties of any kind whatsoever.

EXECUTIVE SUMMARY

1045 Olive is a proposed mixed-use development located at the northwest corner of Olive Street and 11th Street in downtown Los Angeles. The existing single story commercial buildings will be replaced with a mixed-use high-rise building with over 750 thousand square feet of space.

The LAEDC Institute for Applied Economics (LAEDC) has quantified the total economic impact in Los Angeles County of the development of the Project and of its ongoing annual operations once completed and occupied. The findings are as follows:

One-Time Project Development Impacts

It is estimated that the Project development is anticipated to cost $454 million, net of land acquisition. The total economic impact of this development cost in Los Angeles County, including direct, indirect and induced impacts, is shown in Exhibit ES-1

- 4,720 total jobs in Los Angeles County
- $327.4 million in labor income in Los Angeles County;
- $808.2 million in total output (business revenues) in Los Angeles County;
- $98.9 million in local, state and federal tax revenues

Annual Impacts of Ongoing Operations

Once completed, 1045 Olive is expected to host a variety of activity, including residential living and commercial activity. The ongoing impact for Los Angeles County will be significant.

The total annual economic impact in Los Angeles County of all ongoing activity occurring in 1045 Olive, including direct, indirect and induced impacts, is shown in Exhibit ES-2.

- 550 permanent jobs in Los Angeles County;
- $20.5 million in annual labor income in Los Angeles County;
- $67.1 million in annual total output (business revenues) in Los Angeles;
- $14.2 million in local, state and federal tax revenues

Exhibit ES-1

Economic and Fiscal Impact
Project Development

Total Economic Impact:		
Output ($ millions)		$808.2
Employment (jobs)		4,720
Direct	*2,460*	
Indirect and induced	*2,260*	
Labor earnings ($ millions)		$327.4
Total Fiscal Impact ($ millions)		
State and local tax revenues		$33.2
Federal tax revenues		65.7

Source: Estimates by LAEDC



Exhibit ES-2

Economic and Fiscal Impact
Ongoing Operations

Total Economic Impact:		
Output ($ millions)		$67.1
Employment (jobs)		550
Direct	*400*	
Indirect and induced	*150*	
Labor earnings ($ millions)		$20.5
Total Fiscal Impact ($ millions)		
State and local tax revenues		$8.6
Federal tax revenues		5.6

Source: Estimates by LAEDC

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1045 Olive

1045 Olive is envisioned to be a mixed-use high-rise building located at the northwest corner of Olive Street and 11th Street in downtown Los Angeles.

Once completed, the Project is planned to consist of 794 residential units and just over 12,500 square feet of commercial space. There will be over 103 thousand square feet of open space including a ground level public plaza with streetscaping, landscaping and public art display. Residents will have access to various open space and recreational facilities including atop the Podium on the 10th Floor Terrace and the rooftop with the Tower Roof Terrace.

The McKinsey Global Institute reports in *A Tool Kit to Close California's Housing Gap: 3.5 Million Homes by 2025* that there is a critical shortage of housing in California. The rental units that are planned to be built in 1045 Olive are anticipated to be instrumental in addressing the shortage and alleviating some of the pressures on the housing market in Los Angeles County. Moreover, employment opportunities provided in commercial space of 1045 Olive are expected to fulfill some of the anticipated employment needs of the growing populace in Los Angeles County. The unit mix provided by 1045 Olive include studios, one-bedrooms and two-bedrooms to address the housing needs of singles, small families, empty-nesters and larger families.

The project will also provide up to 891 parking spaces and 886 bicycle spaces on the premises.

Project Development

The development and construction of 1045 Olive will support substantial economic activity that will reverberate throughout Los Angeles County.

Methodology

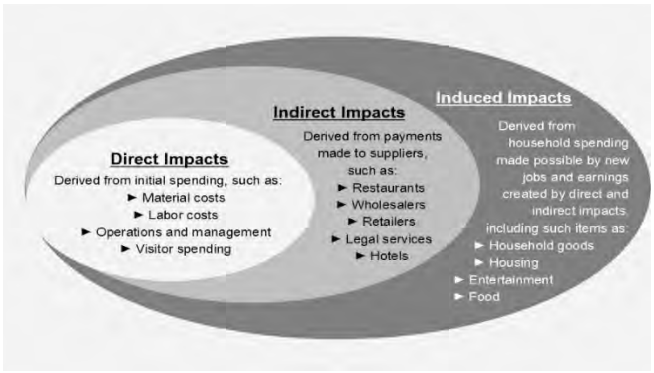
Economic impact analysis is used to estimate the overall economic activity, including spill-over and multiplier impacts, that occurs as a result of a particular development, business, event or geography. The economic activity related to the new construction and expected ongoing operations of 1045 Olive totals millions



of dollars of goods and services purchased from local vendors and the wages and benefits paid to local workers.

During the development and construction phase, millions of dollars will be spent on wages and benefits for construction employees. These workers, as well as employees of all suppliers, will spend a portion of their wages on household consumer goods such as groceries, rent, vehicle expenses, healthcare, and so on. Once the development is completed and occupied, commercial development activity and new residential households will spend millions of dollars annually in the course of their day-to-day activities. This recirculation of the original expenditures multiplies their impact through these indirect and induced effects.

A visual depiction of the different impacts is shown below.



The extent to which the initial expenditures multiply is estimated using economic models that depict the relationships between industries (such as the construction industry and its suppliers) and among economic agents (such as firms and their employees).

These models are built upon expenditure patterns that are reported to the U.S. Bureau of Labor Statistics, the U.S. Census Bureau and the Bureau of Economic Analysis of the U.S. Department of Commerce. Data is regionalized so that it reflects and incorporates local conditions such as prevailing wage rates, expenditure patterns, and resource availability costs.

The magnitude of the multiplying effect differs from one region to another depending on the extent to which the local region can fill the demand for all rounds of supplying materials, goods and services. For example, the automobile manufacturing industry has high multipliers in Detroit and Indiana since these regions have deep and wide supplier networks, while the same industry multiplier in Phoenix is quite small. In another example, the jobs multiplier for the construction industry is higher in Arkansas than in California because the same amount of spending will support fewer workers in Los Angeles than in Little Rock.

Multipliers can also differ from year to year as relative material and labor costs change, and as the production "formula" of industries changes. For example, the IT revolution significantly reduced the job multiplier of many industries (such as manufacturing, accounting, architecture and publishing) as computers replaced administrative and production workers.

Approach

The analysis here uses the development budget for 1045 Olive combined with the estimated revenues of operations once the development is occupied. Data was provided by the client and supplemented with regional and local data and analysis to provide revenue estimates.

Impacts are estimated using models developed with software and data from the IMPLAN Group, Inc. a robust input-output model which traces inter-industry transactions resulting from an increase in demand in a given region. This model estimates the indirect and induced impacts from construction as well as ongoing operations. The economic region of interest is Los Angeles County.

The total estimated economic impact includes *direct, indirect* and *induced* effects. *Direct activity* includes the materials purchased and the employees hired by the developer and its construction contractors. Included are operations staff such as management, human resources and maintenance, and construction workers such as laborers, electricians and other trades. *Indirect effects* include those expenditures which stem from purchases made by the contractors and their suppliers. *Induced effects* are those generated by the household spending of employees whose wages are sustained by both direct and indirect spending, such as groceries, rent, vehicles, expenses, healthcare, and so on.

As an example, for every $10 million spent on construction in Los Angeles County in 2017, a total of 100 jobs are supported. The table below shows the breakdown between direct, indirect and induced jobs:

Exhibit 1

Every $10M in Construction Spending

	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	-	-	-	-
21 Mining	-	-	-	-
22 Utilities	-	-	-	-
23 Construction	55	-	-	56
31-33 Manufacturing	-	1	-	1
42 Wholesale Trade	-	2	1	3
44-45 Retail trade	-	8	3	11
48-49 Transportation & Warehousing	-	2	1	2
51 Information	-	-	-	1
52 Finance & insurance	-	1	2	2
53 Real estate & rental	-	2	1	3
54 Professional- scientific & tech svcs	-	3	1	4
55 Management of companies	-	-	-	-
56 Administrative & waste services	-	2	1	3
61 Educational svcs	-	-	1	1
62 Health & social services	-	-	5	5
71 Arts- entertainment & recreation	-	-	1	1
72 Accomodation & food services	-	1	3	4
81 Other services	-	1	2	3
92 Government & non NAICs	-	-	-	-
Total	55	21	24	100

Source: Estimates by LAEDC

Of the 100 jobs supported by $10 million in construction, 55 are direct jobs. These are jobs at the construction companies, architecture and engineering firms, etc. associated with development of the project. An additional 21 jobs are indirect jobs. These are the jobs supported by the purchases made by the companies

associated with the construction, such as, building materials, wood, nails, etc. The direct and indirect jobs, together, support the induced jobs. These are the jobs supported by the spending of both the construction worker as well as the building material supplier.

The metrics used to define the value of the economic impact are employment, labor income, and the value of output.



Employment includes full-time, part-time, permanent and seasonal employees and the self-employed, and is measured on a job-count basis regardless of the number of hours worked. *Labor income* includes all income received by both payroll employees and the self-employed, including wages and benefits, such as health insurance and pension plan contributions. *Output* is the value of the goods and services produced. Unless noted otherwise, estimates for labor income and output are expressed in 2017 dollars.

The project's residential component will be occupied by new residents, and the commercial portion of the property will house retail and restaurant businesses. Given expected population growth over the development period, the undersupply of new housing in the area, and the lack of existing residential uses on-site, it is reasonable to assume that the addition of households represents new activity. The economic and fiscal impact results should therefore be interpreted as those that are *attributable* to the new development rather than assuming the new development will *generate* such net new activities.

Construction Budget

As is standard for estimating the economic impact attributable to new developments, transfers to other economic agents are excluded, including land purchases, water acquisition rights, environmental rights, and subsidies given by the developer as they do not generate *new* economic activity.

Thus, development costs, less transfers, is estimated at $454 million and was provided by the developer.

Exhibit 2

Direct Development Costs

	$ millions	% of Total
Design	$9.0	2.0%
TFAR/Public Benefits	$10.0	2.2%
Permit Fees	$20.0	4.4%
Other soft costs	$65.0	14.3%
Hard costs	$350.0	77.1%
Total Direct Development Costs	$454.0	100.0%

Source: Developer; Estimates by LAEDC

Ongoing Activity

The project will have significant recurring impact on the Los Angeles County economy once construction is completed and the residential and commercial space becomes occupied. Revenues related to 1045 Olive will likely be derived from both new households and new businesses, including the revenues earned by onsite retail stores and restaurants. New resident households are anticipated to make purchases at both on-site and off-site businesses, adding even more economic activity to the county.

Operational revenues in 1045 Olive is a combination of residential rent revenues, property management revenues and revenues generated by commercial activities

Residential Rent Revenue

Residential rent revenue is the total amount of rent paid annually by resident tenants who will occupy the new units. Occupancy rates are based upon the most recently available vacancy rates from the *American Community*



Survey from the U.S. Census Bureau. The number of units, unit types and projected rental rates were provided by the developer. Occupancy rates are based upon vacancy rates for Los Angeles, CA from the *American Community Survey*. The vacancy rate in this report for rental homes is 2.9 percent.

The aggregate net revenues from rental residences is shown in Exhibit 3.

Exhibit 3
Estimated Rent Revenues

	Number of Units	Total Rent ($ millions)
Studio	152	$2.4
One bedroom	362	$8.7
Two bedrooms	240	$9.1
Three bedrooms	40	$2.3
Total Estimated Rent	794	$22.5

Estimates by LAEDC; Adjusted for occupancy

Revenues Generated by Commercial Activities

Revenue attributable to proposed commercial activity from retail and restaurant space was derived using employment density estimates. It is assumed that the commercial will be a combination of retail and food service places. A portion of the spending at retail stores and restaurants at 1045 Olive are expected to be from new households and their expenditures, we discount a portion of these revenues to avoid double counting the impact of commercial activities. 90 percent of retail and restaurant revenue in 1045 Olive are considered. This means that an estimated 10 percent of the revenues generated by commercial activities on-site are assumed to be from the new resident spending which is accounted for elsewhere. The percentage of spending by new residents on-site may vary.

Along with the retail and restaurant revenues generated on the premises, it is estimated by the developer that there will be approximately 60 property management staff on the premises who will also generate economic activity.

Exhibit 3
Estimated Commercial Revenues

	$1000s
Retail	$2.6
Restaurant	8.7
Property management	41.1
Total Commercial Revenues	$52.3

Sources: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics; Estimates by LAEDC

These estimates do not include any revenues generated by the parking spaces at 1045 Olive. As such, the revenues generated by commercial activities are likely to be *underestimated.*

New Resident Spending

Along with the new ongoing commercial activity, an additional impact on the local economy will derive from the addition of the new resident households (and their spending) to the neighborhood. To quantify this impact, the annual income and local spending patterns for each new household is estimated.

Using expected rents, income levels of future tenants are derived by applying the percentage of income typically dedicated to housing costs. According to the U.S. Census Bureau's *American Community Survey* report on housing characteristics, the median household in Los Angeles that rents its primary residence pays at least 36.1 percent of its before-tax income on housing costs. The overall estimated annual income of households will reach $62.3 million.

To quantify the impact from new households, local spending patterns for each new household is estimated. The *Consumer Expenditure Survey* produced by the Bureau of Labor Statistics of the U.S. Department of Commerce provides the estimates for the Los Angeles metropolitan area for 2016. This survey disaggregates spending for various categories, including housing, transportation, food, and health care. Not all categories of

spending are likely to occur in the local area. Expenditures on, for example, insurance payments and utility costs are not always purchased in the local area. Estimated rents are tallied in a previous section of this analysis.



Exhibit 4

Total Local Spending by New Resident Households

	Overall % of Annual Income	Total Estimated Local Expenditures ($ millions)
Food	15.7%	$ 9.3
Utilities	1.7	1.1
Household operations, furnishings, supplies	6.7	4.1
Apparel	3.0	1.9
Vehicle purchases (net outlay)	7.8	4.8
Gasoline and other vehicle expenses	9.1	5.9
Public and other transportation	1.0	0.6
Medical services and supplies	2.6	1.6
Entertainment	5.1	3.2
Personal care products and services	1.2	0.7
Education and reading	1.9	1.1
Miscellaneous	2.3	1.4
Total New Household Expenditures	58.1%	$35.7

Estimates by LAEDC

Economic Impact of Construction

- The total economic impact attributable to construction spending:
  - $802.2 million in total output in L.A. County
  - 4,720 total jobs in L.A. County $547.2 million in labor income in L.A. County
  - $98.9 million in federal, state, and local taxes

Exhibit 5

Economic and Fiscal Impact
Project Development

Total Economic Impact:		
Output ($ millions)		$808.2
Employment (jobs)		4,720
Direct	*2,460*	
Indirect and induced	*2,260*	
Labor earnings ($ millions)		$327.4
Total Fiscal Impact ($ millions)		
State and local tax revenues		$33.2
Federal tax revenues		65.7

Source: Estimates by LAEDC

Exhibit 6

Detailed Fiscal Impact of Project Development
One-Time

By Type of Tax ($ millions):	LA County
Personal income taxes	$34.5
Social insurance	34.5
Sales and excise taxes	11.4
Property taxes	8.2
Corporate income taxes	5.4
Other taxes and fees	4.9
Total	$98.9
By Type of Government ($ millions):	
Federal	$65.7
State	20.8
County	
Property taxes	*6.8*
Sales taxes	*1.9*
Total County taxes	8.6
Cities	
Property taxes	*1.5*
Sales taxes	*0.8*
Other fees and fines	*1.5*
Total Cities taxes	3.8
Total	$98.9

Source: Estimates by LAEDC; May not sum due to rounding



Exhibit 7

One-time Economic Impacts by Industry Sector

	Jobs	Labor Income ($ mllions)	Output ($ mllions)
Agriculture	0	$0.0	$0.0
Mining	5	0.9	2.4
Utilities	2	0.3	1.7
Construction	1,969	138.6	357.2
Manufacturing	39	3.3	34.2
Wholesale trade	101	7.9	24.0
Retail trade	446	17.0	41.6
Transportation/Warehousing	95	6.2	15.4
Information	35	4.6	19.6
Finance and insurance	134	10.4	26.8
Real estate and rental	141	5.0	53.9
Prof/Sci/Technical	670	72.1	111.7
Management of companies	20	2.4	5.0
Administrative/Waste	218	8.3	14.7
Educational services	54	2.8	4.6
Health and social services	272	16.1	27.5
Arts/Entertainment/Recreation	50	1.8	4.1
Accommodation/Food services	213	6.7	15.3
Other services	157	7.5	13.1
Government	102	15.5	35.5
Total	4,720	$327.4	$808.2

Source: Estimates by LAEDC; May not sum due to rounding
.

Economic Impact of Ongoing Activity

- The total economic impact attributed to the ongoing economic activity:
  - $67.1 million in annual total output in L.A. County
  - 550 permanent jobs in L.A. County
  - $20.5 million in annual labor income in L.A. County
  - $14.2 million in annual federal, state, and local taxes

Exhibit 8

Economic and Fiscal Impact
Project Development

Total Economic Impact:		
Output ($ millions)		$67.1
Employment (jobs)		550
Direct	*400*	
Indirect and induced	*150*	
Labor earnings ($ millions)		$20.5
Total Fiscal Impact ($ millions)		
State and local tax revenues		$8.6
Federal tax revenues		5.6

Source: Estimates by LAEDC

Exhibit 9

Detailed Fiscal Impact of Project Development
One-Time

By Type of Tax ($ millions):	LA County
Personal income taxes	$2.2
Social insurance	2.1
Sales and excise taxes	1.9
Property taxes	1.3
Corporate income taxes	1.9
Other taxes and fees	0.6
Incremental Property Tax	4.2
Total	$14.2
By Type of Government ($ millions):	
Federal	$5.6
State	2.4
County	
Property taxes	*1.1*
Incremental Property Taxes	*3.4*
Sales taxes	*0.3*
Total County taxes	4.8
Cities	
Property taxes	*0.2*
Incremental Property Taxes	*0.8*
Sales taxes	*0.1*
Other fees and fines	*0.2*
Total Cities taxes	1.4
Total	$14.2

Source: Estimates by LAEDC; May not sum due to rounding



Exhibit 10

Annual Economic Impacts by Industry Sector

	Jobs	Labor Income ($ mllions)	Output ($ mllions)
Agriculture	0	$0.0	$0.0
Mining	0	0.0	0.1
Utilities	1	0.2	1.2
Construction	4	0.3	0.8
Information	3	0.4	1.8
Manufacturing	2	0.1	1.1
Wholesale trade	3	0.2	0.7
Retail trade	74	3.1	6.6
Transportation/Warehousing	5	0.3	0.8
Finance and insurance	10	0.4	1.8
Real estate and rental	126	2.4	27.2
Prof/Sci/Technical	9	0.8	1.6
Management of companies	2	0.2	0.5
Administrative/Waste	89	2.9	5.95
Educational services	11	0.5	0.9
Health and social services	24	1.3	2.6
Arts/entertainment/Recreation	30	1.0	2.1
Accommodation/Food services	59	1.7	3.9
Other services	100	3.8	6.5
Government	2	0.3	0.8
Total	550	$20.5	$67.1

Source: Estimates by LAEDC; May not sum due to rounding

Property Tax Revenues

1045 Olive is estimated to trigger an annual increase in property tax revenues. The increase in property tax revenues attributable to 1045 Olive development is based on the construction of each property and excludes exemptions (except for the institutional exemption), exclusions, and tax relief recipients.



The cost of construction was used to calculate the expected property tax revenues derived from apartments and commercial properties.

As property tax rates are also expected to grow once new development is put in place, we assumed a tax rate of 1.193 percent, which is in line with the current tax rate area.

Based on these assumptions, 1045 Olive is projected to generate $4,175,595 in property taxes annually.

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Los Angeles County Economic Development Corporation
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Exhibit 6 Greenhouse Gas Emissions Methodology and Documentation

GREENHOUSE GAS EMISSIONS METHODOLOGY AND DOCUMENTATION FOR THE 1045 OLIVE STREET PROJECT

Application for CEQA Streamlining Under the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.)

Prepared for
1045 Olive LLC

December 2017

ESA

GREENHOUSE GAS EMISSIONS METHODOLOGY AND DOCUMENTATION FOR THE 1045 OLIVE STREET PROJECT

Application for CEQA Streamlining Under the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.)

Prepared for
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SECTION 1
Executive Summary

ESA has been retained to conduct a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project ("the Project") and to demonstrate that the Project meets the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.), also referred to as Assembly Bill (AB) 900. In September 2011, the Governor signed the Act, which required the Governor to establish procedures for applying for streamlined environmental review under the California Environmental Quality Act (CEQA) for projects that meet certain requirements. In 2016, Senate Bill (SB) 734 was signed, which extends the authority of the Governor to certify a project to January 1, 2018 and provides that the certification expires and is no longer valid if the lead agency fails to approve a certified project before January 1, 2019. In October 2017, AB 246 was signed, which further extends the authority of the Governor to certify a project to January 1, 2020 and provides that the certification expires and is no longer valid if the lead agency fails to approve a certified project before January 1, 2021. The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c).

The Project is located at 1045 S. Olive Street in Downtown Los Angeles, California. The approximately 0.96-acre site occupies a parcel on the southeast corner of the block bounded by 11th Street to the southwest and S. Olive Street to the southeast ("the Project Site"). The property currently contains four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. The Project would demolish and remove the existing uses from the site.

The proposed mix of uses would be developed within one building with a podium structure. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[1] The mixed-use high-rise building will contain a mix of residential and commercial uses. The Project would include 739,273 square feet of residential uses (zoning area) with 794 residential units, and 12,504 square feet of commercial uses accessible at the ground level. Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements and is proposed to be located within a parking structure with 6 subterranean levels and 8 partial levels above grade (as certain above grade levels will contain

[1] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

residential units and other active uses along the 11th and Olive Street frontages) with a total of 891 spaces (878 residential and 13 commercial). Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 886 bicycle spaces provided within the parking garage on ground level, mezzanine and one level below grade.

Under the Baseline Condition, which is defined as the year 2017 existing site operating conditions, the site generates approximately 603 metric tons of carbon dioxide equivalents ($MTCO_2e$) per year. This excludes any one-time construction GHG emissions that were generated when the existing uses and related infrastructure were originally built. Construction of the Project would generate one-time GHG emissions of approximately 1,121 $MTCO_2e$, during the first year, 1,748 $MTCO_2e$ during the second year, 2,795 $MTCO_2e$ during the third year and 1,573 $MTCO_2e$ during the 4th year. At Project buildout, emissions of approximately 9,968 $MTCO_2e$ would be generated during the first full year of operation. Compared to the Baseline Condition, the Project's operational GHG emissions represent a net increase in GHG emissions from the site of approximately 5,563 $MTCO_2e$ during the first full year of operation. The net Project operational GHG emissions would decline in future years primarily as a result of vehicle fleet turnover and as utilities provide a greater percentage of electricity from renewable sources. Future year emissions would decline as a greater percentage of motor vehicles meet more stringent emissions standards, including the Pavley Phase I and Phase II emissions standards,[2] and the a greater percentage of electricity is provided by renewable sources in accordance with the Renewables Portfolio Standard, which requires 50 percent renewable electricity by 2030.[3] The Project would obtain GHG offsets that would result in the Project to having no net increase in GHG emissions. As a result, the Project would generate decreased GHG emissions in future years and would require decreased offsets to achieve no net increase in GHG emissions.

Based on this assessment, the Project would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). Therefore, the Project would meet the GHG emissions requirements for streamlined environmental review under CEQA.

[2] Assembly Bill 1493 (Pavley Regulations) reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.

[3] On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 was signed into law on October 7, 2015.

SECTION 2
Introduction

2.1 Purpose

ESA has been retained to conduct a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project ("the Project") and to demonstrate that the Project meets the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.). This assessment describes the methodology used to estimate the GHG emissions from baseline and Project conditions, provides an estimate of the net change in GHG emissions for the Project as compared to baseline conditions, and describes the methodology used to quantify GHG emission reductions from Project design features and mitigation measures. The following baseline and Project-related emission sources have been evaluated:

- Construction Activities – Fossil fueled on- and off-road vehicles and equipment needed for demolition, mass and fine grading, building construction, paving, and architectural coating;
- Direct Emission Sources – Consumption of natural gas on-site for cooking, space heating and water heating, combustion of fossil fuels for lawn care and maintenance activities, and motor vehicles including employee transportation; and
- Indirect Emission Sources – Off-site electricity generation, wastewater treatment and water conveyance, and solid waste disposal.

2.2 Project Description, Site Location, Existing Uses

1045 Olive, LLC (Applicant) proposes a new mixed-use development on an approximately 0.96-acre site located at 1045 S. Olive Street on the northwest corner of Olive Street and 11th Street ("the Project Site"). Four existing single story commercial buildings would be removed and replaced with a new 751,777 square foot (net) mixed-use high-rise building. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[4] The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. The residential units would be mostly located within the residential tower; however, approximately 40 units, would be located along the top five levels of the Podium facing

[4] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

Olive Street and 11th Street. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing GHG emissions, this assessment conservatively assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.[5]

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover at the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

The Project Site is located in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. The size of the Project Site will be reduced during Project implementation to increase the width of the alley and adjacent sidewalks to meet current standards. The post dedication Site would be 37,172 square feet. Uses within the block that lie adjacent to the Project

[5] Calculations included in the analysis of environmental impacts for this Project conservatively assume that all of the commercial space would be used for restaurant uses. This provides for conservative analyses as restaurant uses generate greater impacts than retail uses. For example, restaurant uses generate greater levels of traffic, consumption of resources such as energy and water consumption, and associated GHG emissions.

include a 7-story mixed-use development to the north, 7-story mixed-use development to the northwest, and a two story commercial building and 25-story mixed-use high-rise building to the west. Adjacent development across Olive Street to the east includes single story commercial uses; and across 11th Street to the south includes a surface parking. Surrounding development includes a large array of newer mixed use development, and older commercial, office, residential and warehouse uses.

The Project vicinity is highly urbanized and generally built-out. The South Park community of Downtown Los Angeles is one of nine-districts in the Central City Community Plan area, and is representative of the Downtown Center with its concentration of government-related uses, high- and mid-rise office buildings, residential buildings, hotels, retail uses, museums, and cultural districts. The South Park area includes a mix of residential, medical, commercial, and retail uses; with a substantial concentration of housing located next to and over support services, such as retail and commercial developments that provide employment opportunities for area residents.

The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

Construction of the Project would be completed over an approximately 3.5-year period. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

The Project Site and surrounding uses are shown in **Figure 1**. The site plan for the Project is provide in **Figure 2**.



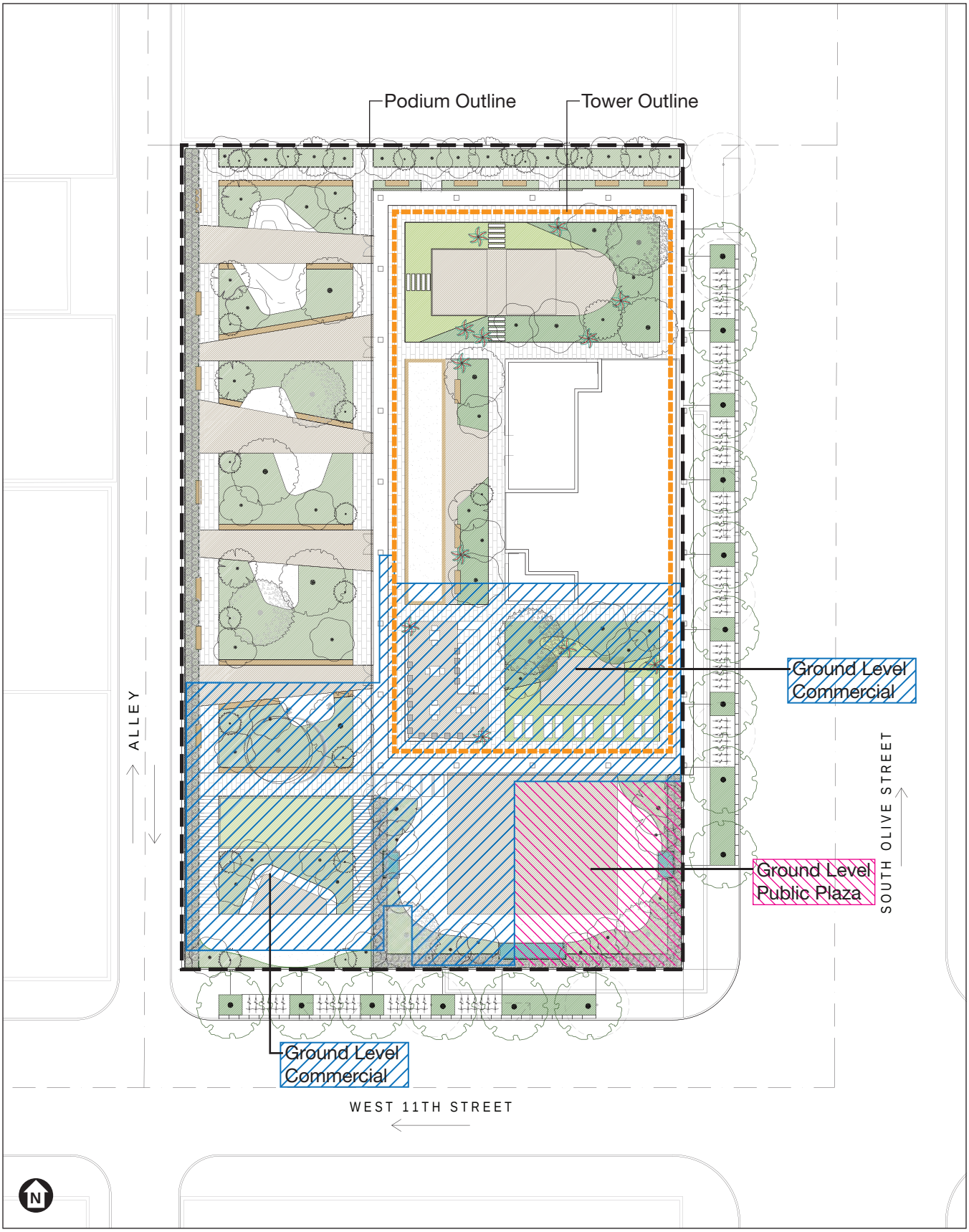
SOURCE: Google Earth, 2016

1045 Olive Street

Figure 1

Aerial Photograph with Surrounding Land Uses

ESA



SOURCE: ODA New York, 2017; ESA, 2017

1045 Olive Street

Figure 2

Proposed Site Plan

ESA

2.3 Jobs and Economic Improvement Through Environmental Leadership Act

In September 2011, the Governor signed the Act, which required the Governor to establish procedures for applying for streamlined environmental review under the California Environmental Quality Act (CEQA) for projects that meet certain requirements. The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). For purposes of California Public Resources Code Section 21183(c) the following process applies:

a. The applicant shall submit electronically to AB900ARBsubmittals@arb.ca.gov a proposed methodology for quantifying the project's net additional greenhouse gas emissions. The Air Resources Board will review and comment on the methodology, at its discretion, within 30 days of submission.

b. At the same time, the applicant shall submit to AB900ARBsubmittals@arb.ca.gov documentation that the project does not result in any net additional greenhouse gas emissions. The documentation must at least quantify:

   (1) Both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and

   (2) The net emissions of the project after accounting for any mitigation measures that will be monitored and enforced consistent with Public Resources Code section 21183(d).

c. Within 60 days of receiving the documentation in 6.b. above, the Board will determine whether the condition specified in Public Resources section 21183(c) has been met or, if more time is needed, notify the applicant of the expected completion date.

d. The Board will determine and report to the Governor in writing that a project does not result in any net additional emissions of greenhouse gases if the project demonstrates through a combination of project design features, compliance with (or exceeding minimum requirements of) existing regulations, and mitigation that it would result in zero additional greenhouse gas emissions.

SECTION 3
Greenhouse Gas Emissions

3.1 Global Climate Change and Greenhouse Gases

The natural process through which heat is retained in the troposphere[6] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a three-fold process as follows: (1) short wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation re-emitted by the Earth; and (3) GHGs in the atmosphere absorbing or trapping the long-wave radiation and re-emitting it back towards the Earth and into space. This third process is the focus of global climate change actions.

The most commonly emitted GHG from anthropogenic (i.e., human) activities is carbon dioxide (CO_2). Not all GHGs possess the same ability to induce climate change; as a result, GHG contributions are commonly quantified in the units of equivalent mass of carbon dioxide (CO_2e). Mass emissions are calculated by converting pollutant-specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value.[7] These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 are currently in use by the State of California for official GHG emission inventory purposes. By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons of CO_2e ($MTCO_2e$) per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The CO_2e values are calculated for construction years as well as existing and Project build-out conditions in order to generate a net change in GHG emissions for construction and operation. Compounds that are regulated as GHGs are discussed below.

- Carbon Dioxide (CO2): CO2 is the most abundant GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO2 is the reference gas (GWP of 1) for determining the GWPs of other GHGs.
- Methane (CH4): CH4 is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and

6 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

7 GWPs and associated CO2e values were developed by the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The California Air Resources Board (CARB) has begun reporting GHG emission inventories for California, starting with the 2012 inventory, using the GWP values from the IPCC AR4.

leaks in natural gas pipelines. The GWP of CH4 is 21 in the IPCC SAR and 25 in the IPCC AR4.

- Nitrous Oxide (N2O): N2O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N2O is 310 in the IPCC SAR and 298 in the IPCC AR4.
- Hydrofluorocarbons (HFCs): HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs ranges from 140 for HFC-152a to 11,700 for HFC-23 in the IPCC SAR and 124 to 14,800 in the IPCC AR4.
- Perfluorocarbons (PFCs): PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. The GWPs of PFCs range from 6,500 to 9,200 in the IPCC SAR and 7,390 to 17,700 in the IPCC AR4.
- Sulfur Hexafluoride (SF6): SF6 is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF6 has a GWP of 23,900 in the IPCC SAR and 22,800 in the IPCC AR4.

The Climate Registry (TCR) has prepared the General Reporting Protocol for calculating and reporting GHG emissions from a number of general and industry-specific activities.[8] No specific protocols are available for land use development projects; however, the General Reporting Protocol has been adapted to address the land use development GHG emissions in this assessment. The information provided in this assessment is generally consistent with the General Reporting Protocol minimum reporting requirements. The General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include:

- Scope 1: Direct GHG emissions from human activity (e.g., stationary combustion of fuels, mobile combustion of fuels in transportation).
- Scope 2: Indirect GHG emissions associated with activities of the reporting entity but occur at sources controlled by another entity (e.g., purchased electricity or purchased steam).
- Scope 3: Indirect emissions associated with other emissions sources, such as employee commute and business travel and waste disposal.

According to the California Air Resources Board (CARB), the consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility: "As facilities consider changes that would affect their emissions – addition of a cogeneration unit to boost overall efficiency even as it increases direct emissions, for example – the relative impact on total (direct plus indirect) emissions by the facility should be monitored. Annually reported indirect energy usage also aids the conservation awareness of the facility and provides information" to

8 The Climate Registry, General Reporting Protocol, Version 2.1, (2016).

CARB to be considered for future strategies by the industrial sector.[9] Additionally, the Office of Planning and Research directs lead agencies to "make a good-faith effort, based on available information, to calculate, model, or estimate…GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[10] Therefore, direct and indirect emissions are considered in this assessment.

3.2 Baseline Operational Emissions

3.2.1 Description of Baseline Condition

The Project Site encompasses four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. Existing active land uses include 14,653 square feet of manufacturing space and 5,171 square feet of retail space. The remaining 15,827 square feet is currently vacant and not included in the analysis. For the purposes of estimating emissions within CalEEMod, the existing active uses were modeled as retail (strip mall) and manufacturing uses. The buildings were originally constructed between about the 1910s to the 1950s. The Project would demolish and remove the existing structures and associated infrastructure from the Project Site and the existing uses would be vacated prior to construction and would cease to operate. Therefore, the GHG emissions from the existing site uses would not occur contemporaneously with either Project construction emissions or Project operational emissions. The square footage for these existing land uses are provided in **Table 1**.

TABLE 1
BASELINE CONDITION FLOOR AREA

Land Use	Modeled CalEEMod Land Use	Square Feet (sqft)
Retail	Strip Mall	5,171
Manufacturing	Unrefrigerated Waterhouse-No Rail	14,653
Parking Lot/Hardscape Areas	Parking Lot	5,952

SOURCE: 1045 Olive, LLC 2017.

3.2.2 GHG Emission Sources and Calculation Methodology

Construction

The Project Site is currently built-out. Construction of the buildings and associated parking areas and infrastructure resulted in one-time GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from heavy-duty construction equipment, haul trucks, and worker vehicles. However, sufficient detail is not available with respect to the construction schedule, equipment usage, and number of haul trips to provide a quantitative construction GHG emissions assessment for the

[9] California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (AB 32), (2007).

[10] Office of Planning and Research, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review, page 5, (2008).

Baseline Condition. Therefore, construction-related GHG emissions are not included for the Baseline Condition. This is a conservative approach since, by excluding the Baseline Condition construction-related GHG emissions, the Project would need to provide slightly greater GHG reductions in order to meet the requirements of AB 900 of no net additional GHG emissions.

Operational Energy – Electricity

The generation of electricity in California is achieved through the combustion of fossil fuels, primarily natural gas, using steam boilers, internal combustion engines, and combustion turbines. A portion of the electricity in California is imported from outside the state and is derived from the combustion of coal and other non-gaseous fossil fuels. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. These emissions occur due to the electrical demand of the existing land uses that currently operate on the Project Site. The electricity generation occurs off-site; therefore, electricity use results in GHG emissions that are considered to be indirect.

Emissions of GHGs associated with the Baseline Condition energy demand are based on the size of the retail, manufacturing, and parking/hardscape land uses, the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions in units of $MTCO_2e$ are generally calculated as follows:

Electricity:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_E \times EF_E \times GWP)_i \right) \div 2204.62 \quad \textbf{[Equation 1]}$$

Where:
- Units = Number of land use units (same land use type) [dwelling unit (DU) or 1000 sqft]
- D_E = Electrical demand factor [megawatt-hour (MWh)/DU or 1000 sqft/year]
- EF_E = GHG emission factor [pounds per megawatt-hour (MWh)]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 2204.62 = Conversion factor [pounds/MT]
- i = Summation index

Electrical demand is based on data from the California Energy Commission (CEC) *California Commercial End Use Survey* (CEUS), which lists energy demand by building type,[11] as incorporated into the California Emissions Estimator Model (CalEEMod).[12] The data from the CEUS is from 2002. Since 1978, the CEC has established building energy efficiency standards, which are updated periodically. CalEEMod (version 2016.3.2) incorporates correction factors to account for the 2016 Title 24 Building Energy Efficiency Standards. The existing buildings on the Project Site were built in the 1910s to the 1950s. Thus, the building electricity usage rates are

[11] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017

[12] See: http://www.caleemod.com.

adjusted within CalEEMod using the "historical data" option to use the prior 2005 Title 24 Building Energy Efficiency Standards.[13] This is considered a conservative adjustment because the existing buildings were built prior to implementation of the 2005 Standards and thus would have been built to a less stringent energy standard and data is not available within CalEEMod to adjust usage factors prior to the 2005 Standards. Parking lot and hardscape areas result in electricity usage due to lighting needs and were included as sources.

The Los Angeles Department of Water and Power (LADWP) provides electric service to the Project Site. Emission factors for GHGs due to electrical generation to serve the electrical demands of the Baseline Condition were obtained from the LADWP 2016 Draft Power Integrated Resource Plan, which provides a CO_2 intensity of 1,132 pounds of CO_2 per MWh in 2015 (the most recent year for which data is provided).[14] LADWP has achieved average renewable energy sales of approximately 20 percent for the 2010 through 2013 period.[15] Emission factors for CH_4 and N_2O were obtained from CalEEMod.[16]

The estimated annual emissions from electrical demand from the Baseline Condition are provided in **Table 2**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 2
BASELINE CONDITION ELECTRICAL DEMAND GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
Existing Site						
Retail	5.17	82.5	1,132	0.029	0.0062	42.5
Manufacturing	14.65	67.0	1,132	0.029	0.0062	34.5
Parking/Hardscape	5.95	5.2	1,132	0.029	0.0062	2.7
Subtotal						**80**

[a] California Air Resources Board, CalEEMod User's Guide, Appendix D, Section 5, November 2017, http://caleemod.com/. Accessed December 2017. Factors are based on the historical data option.

[b] Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) C-13.

[c] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[d] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

13 California Air Resources Board, CalEEMod User's Guide, Section 4.6, November 2017, http://caleemod.com/. Accessed December 2017.

14 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) C-13.

15 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-1.

16 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

Operational Energy – Natural Gas

The existing land uses under the Baseline Condition utilize natural gas primarily for heating needs. The combustion of natural gas results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The combustion of natural gas occurs on-site; therefore, the associated GHG emissions are considered to be direct.

The emissions of GHGs associated with natural gas combustion under the Baseline Condition are based on the size of the existing land uses, the natural gas combustion factors for the land uses in units of million British thermal units (MMBtu), the GHG emission factors for natural gas combustion, and the GWP values for the GHGs emitted. Annual natural gas GHG emissions in units of $MTCO_2e$ are generally calculated as follows:

Natural Gas:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_{NG} \times EF_{NG} \times GWP)_i \right) \div 2204.62 \quad \textbf{[Equation 2]}$$

Where:	Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
	D_{NG}	=	Natural gas combustion factor [MMBtu/DU or 1000 sqft/year]
	EF_{NG}	=	GHG emission factor [pounds/MMBtu]
	GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
	2204.62	=	Conversion factor [pounds/MT]
	i	=	Summation index

Similar to the electricity calculations, natural gas demand is based on data from the CEUS, which lists energy demand by building type, as incorporated into CalEEMod. As discussed previously, the existing buildings on the Project Site were built in the 1910s to the 1950s. Thus, the building natural gas usage rates are adjusted within CalEEMod using the "historical data" option to use the prior 2005 Title 24 Building Energy Efficiency Standards. This is considered a conservative adjustment because the existing buildings were built prior to implementation of the 2005 Standards and thus would have been built to a less stringent energy standard and data is not available within CalEEMod to adjust usage factors prior to the 2005 Standards. Parking lot and hardscape areas do not result in natural gas combustion and were excluded as sources.

The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the Baseline Condition were obtained from CalEEMod, which provides statewide emission factors.

The estimated annual emissions from natural gas combustion from the Baseline Condition are provided in **Table 3**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 3
BASELINE CONDITION NATURAL GAS GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Natural Gas Demand Factor, D_{NG} (MMBtu/year) [a]	Emission Factor, EF_{NG} (pounds/MMBtu)			Annual GHG Emissions ($MTCO_2e$/year) [c]
			CO_2 [b]	CH_4 [b]	N_2O [b]	
Existing Site						
Retail	5.17	9.4	117.65	0.0023	0.0022	0.5
Manufacturing	14.65	15.2	117.65	0.0023	0.0022	0.8
Subtotal						**1**

[a] California Air Resources Board, CalEEMod User's Guide, Appendix D, Section 5, November 2017, http://caleemod.com/. Accessed December 2017. Factors are based on the historical data option.

[b] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

Operational Mobile

Mobile source emission calculations associated with the Baseline Condition are calculated using vehicle miles traveled (VMT) from the traffic analysis prepared for the Project.[17] The estimated VMT in the traffic analysis is based on average trip lengths for each land use were determined using CalEEMod. The trip type describes the purpose of the trip generated at each land use, such as for commercial trips. Commercial trips include commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW). The trip lengths are based on the location and urbanization of the Project area. The average trip length of each land use is the sum of the trip length of each trip type multiplied by the percentage of trip type and accounting for applicable reductions from proximity to transit and other VMT-reducing land use characteristics.

The annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic analysis prepared for the Project.[18] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses. The VMT calculations for the existing site uses are provided in **Appendix A**.

The analysis is also based on the CARB on-road vehicle emissions factor model (EMFAC). EMFAC2014 "represents ARB's current understanding of motor vehicle travel activities and their associated emission levels."[19] Emissions of GHGs associated with mobile sources under the Baseline Condition are based on the average daily trip rate, trip distance, the GHG emission factors for the mobile sources, and the GWP values for the GHGs emitted. The types of vehicles

[17] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

[18] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

[19] California Air Resources Board, Mobile Source Emissions Inventory, http://www.arb.ca.gov/msei/categories.htm#emfac2014. Accessed September 2017.

that visit the Project Site include all vehicle types including automobiles, light-duty trucks, delivery trucks, and waste haul trucks. Modeling for the Baseline Condition was conducted using the vehicle fleet mix for the South Coast Air Basin for all vehicle types as provided in EMFAC2014.

Emission factors were obtained from EMFAC2014, which was run in the emissions mode (also referred to as the "Burden" mode) and used to generate South Coast Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile, which is the same methodology used by CalEEMod. Emissions of GHGs from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the existing Project Site. The emissions were calculated using the South Coast Air Basin motor vehicle fleet mix for year 2017 as provided in EMFAC2014. Mobile source emissions are the product of the CalEEMod estimated VMT and the EMFAC2014 emission factors. The estimated annual emissions from mobile sources from the Baseline Condition are provided in **Table 4**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 4
BASELINE CONDITION MOBILE SOURCE GREENHOUSE GAS EMISSIONS

Land Use	Estimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
Existing Site			
Retail/Manufacturing (2017)	760,945	462.4	352
Subtotal			**352**

[a] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017. Based on the estimated weekday VMT multiplied by 261 days per year and the estimated weekend VMT, using the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses multiplied by 104 days per year.

[b] EMFAC2014 Emission Factors for the South Coast Air Basin motor vehicle fleet mix.

SOURCE: ESA 2017.

Operational Solid Waste

The existing land uses under the Baseline Condition generate municipal solid waste (MSW) from day-to-day operational activities, which generally consists of product packaging, bottles, food scraps, paper, plastic, and other items routinely disposed of in municipal trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the Baseline Condition are calculated using CalEEMod. The emissions are based on the size of the existing land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Solid Waste:

Annual Emissions [$MTCO_2e$] = ($\sum_i$ (Units × D_{MSW} × EF_{MSW} × GWP)$_i$) ÷ 1.1023
[Equation 3]

Where:	Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
	D_{MSW}	=	Waste disposal rate [tons/DU or 1000 sqft/year]
	EF_{MSW}	=	GHG emission factor [tons/ton waste]
	GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
	1.1023	=	Conversion factor [tons/MT]
	i	=	Summation index

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. Annual waste disposal rates used in CalEEMod are based on data from the California Department of Resources Recycling and Recovery (CalRecycle).[20] The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of approximately 76 percent, according to the most recent data available.[21] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, are used in this assessment.

The estimated annual emissions from solid waste disposal from the Baseline Condition are provided in **Table 5**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 5
BASELINE CONDITION SOLID WASTE DISPOSAL GREENHOUSE GAS EMISSIONS

Land Use	Waste Diversion Rate [a]	Waste Disposal after Diversion, D_{MSW} (tons/year) [b]	Landfill gas (no capture)	Landfill Gas (capture with flaring)	Annual GHG Emissions ($MTCO_2e$/year) [c]
Existing Site					
Retail/Manufacturing	76%	9.6	6%	94%	5
Subtotal					**5**

[a] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

[b] CalRecycle, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 Manufacturing – All Other (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017.

[c] Emissions are based on CalEEMod default values for landfill gas capture and flaring for the South Coast Air Basin region. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

[20] CalRecycle, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 Manufacturing – All Other (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017.

[21] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

Operational Water and Wastewater

Water and wastewater generated from the existing land uses under the Baseline Condition requires energy to supply, distribute and treat. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The electricity generation occurs off-site; therefore, the electricity use from water and wastewater results in GHG emissions that are considered to be indirect. Wastewater also results in emissions of GHGs from wastewater treatment systems (e.g., septic, aerobic, or lagoons) as well as from solids that are digested either through an anaerobic digester or with co-generation from combustion of digester gas.

The emissions of GHGs associated with water demand and wastewater generation under the Baseline Condition are calculated using CalEEMod. The emissions are based on the size of the existing land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod as follows for indoor and outdoor water demand:

Water Supply, Treatment, and Distribution; Wastewater Treatment (electricity):

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_W \times (EI_W \div 1000) \times EF_W \times GWP)_i \right) \div 2204.62$$

[Equation 4]

Where:

Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
D_W	=	Water demand factor [million gallons (Mgal)/DU or 1000 sqft/year]
EI_W	=	Electricity intensity factor [kilowatt-hours (kWh)/Mgal]
1000	=	Conversion factor [kWh/MWh]
EF_W	=	GHG emission factor [pounds/MWh]
GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
2204.62	=	Conversion factor [pounds/MT]
i	=	Summation index

The estimated water demand is based on CalEEMod factors, which are based on annual water demand rates in the Pacific Institute *Waste Not Want Not* report.[22] There is no landscaping at the existing land uses at the Project Site. There are currently no trees or other substantial landscaping located on the Project Site with the exception of five street trees located along the street-side edge of Olive Street that are maintained by the City. Therefore, under the Baseline Condition, this analysis assumes no outdoor water demand associated with the existing land uses.

[22] Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm.

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report Refining Estimates of Water-Related Energy Use in California, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[23] The same electricity GHG emissions factors discussed under the **Operational Energy – Electricity** subheading are used for water and wastewater energy usage.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in CalEEMod for the type of wastewater treatment. Calculation formulas are described in detail in the California Emissions Estimator Model User's Guide, Appendix A.[24] As stated in the User's Guide, the GHGs emitted from each type of wastewater treatment are based on the CARB's Local Government Operations Protocol (LGOP),[25] which are in turn based on United States Environmental Protection Agency (USEPA) methodologies.[26] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas.

The estimated annual emissions from water and wastewater from the Baseline Condition are provided in **Table 6**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 6
BASELINE CONDITION WATER AND WASTEWATER GAS GREENHOUSE GAS EMISSIONS

Land Use	Water Demand, D_W (gal/year) [a]	Electricity Intensity Factor, EI_W (kWh/Mgal) [b]				Annual GHG Emissions ($MTCO_2e$/year) [c]
		Supply	Treat	Distribute	Treatment	
Existing Site						
Retail	382,955 (indoor) / 0 (outdoor)	9,727	111	1,272	1,911	3.1
Manufacturing	3,387,810 (indoor) / 0 (outdoor)	9,727	111	1,272	1,911	27.3
Subtotal						**30**

[a] City of Los Angeles, Department of Public Works, Bureau of Sanitation, Sewerage Facilities Charge, Sewage Generation Factors for Residential and Commercial Categories. Provided in the L.A. CEQA Thresholds Guide, pages M.2-22-M.2-26 (2006). Water demand rates are derived based on the wastewater generation rates.

[b] California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

23 California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

24 California Air Resources Board, CalEEMod User's Guide, Appendix A, November 2017, http://caleemod.com/. Accessed December 2017.

25 California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, (2008).

26 United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, (2008).

Operational Area and Stationary

Area sources of GHG emissions typically result from the operation of equipment used to maintain landscaping, such as lawnmowers and trimmers. The combustion of fossil fuels to operate these equipment results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. There is no landscaping at the existing land uses at the Project Site. There are currently no trees or other substantial landscaping located on the Project Site with the exception of five street trees located along the street-side edge of Olive Street that are maintained by the City. There are no other substantial stationary sources on-site, such as generators or industrial sized boilers. Therefore, under the Baseline Condition, this analysis does not include operational area or stationary sources of emissions associated with the existing land uses.

Summary of Baseline Condition GHG Emissions

A summary of the GHG emissions under the Baseline Condition is provided in **Table 7**.

TABLE 7
BASELINE CONDITION SUMMARY OF ANNUAL GREENHOUSE GAS EMISSIONS

Source	Annual GHG Emissions ($MTCO_2e$/year) [a]
Existing Site	
Electricity	80
Natural Gas	1
Mobile	352
Solid Waste	5
Water and Wastewater	30
Area and Stationary	0
Total	**468**

[a] Totals may not add up exactly due to rounding in the modeling calculations.

SOURCE: ESA 2017.

3.3 Project Construction and Operational Emissions

3.3.1 Description of Project Condition

The Project would demolish all existing buildings and surface parking/hardscape on the Project Site. The Project would construct an approximately 751,777 square foot (net) mixed-use high-rise building with 794 multi-family residential units and 12,504 square feet of neighborhood serving commercial uses. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art Plaza. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. The square footage for the Project land uses and modeled in CalEEMod are provided in **Table 8**.

TABLE 8
PROJECT FLOOR AREA

Land Use	Modeled CalEEMod Land Use	Units
Residential Apartments	Apartments High Rise	794 dwelling units (739,273 sqft)
Commercial [a]	High Turnover (Sit Down Restaurant)	12,504 sqft
Common Amenity Area for Residents (exterior/lounge/activity)	General Office	37,927 sqft
Common Amenity Area for Residents (interior/lounge/activity)	General Office	23,025 sqft
Private Balcony Space for Residents	Other Non-Asphalt Surfaces	39,700 sqft
Public Plaza Area	City Park	2,728 sqft
Parking	Enclosed Parking with Elevator	891 spaces (426,458 sqft)

[a] The commercial use is modeled as high turnover (sit down restaurant) in order to provide a conservative analysis. The high turnover (sit down restaurant) use generates more vehicle trips and has greater energy demand compared to other commercial (i.e., retail, office) uses.

SOURCE: 1045 Olive, LLC 2017.

For the purposes of this assessment, in order to provide a comparison of the Project's GHG emissions with the Baseline Condition, and to assess future GHG emissions trends of the Project, emissions of GHGs are estimated for the Project's construction and operational lifetime. Within the Project's operational lifetime, there are several key milestone years. The milestone years correspond to the following circumstances:[27, 28]

- 2023: Expected full initial operational year of the Project (electric utilities, including LADWP, are required to supply a minimum of 33 percent of electricity via renewable sources during this year);
- 2024: The year in which electric utilities, including LADWP, are expected to supply a minimum of 40 percent of electricity via renewable sources;
- 2025: The year in which the model year 2017-2025 light-duty vehicle GHG emissions and Corporate Average Fuel Economy standards are to be fully implemented for new vehicles;
- 2027: The year in which electric utilities, including LADWP, are expected to supply a minimum of 45 percent of electricity via renewable sources;
- 2030: The year in which electric utilities, including LADWP, are expected to supply a minimum of 50 percent of electricity via renewable sources.

[27] Assembly Bill 1493 (Pavley Regulations) reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.

[28] On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 was signed into law on October 7, 2015.

3.3.2 GHG Emission Sources and Calculation Methodology

Construction

Construction of the Project would result in one-time GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from heavy-duty construction equipment, haul trucks, and worker vehicles. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road and on-road emissions factors. The emissions are estimated using the CalEEMod tool, which incorporates the CARB off-road equipment emissions factor model (OFFROAD) and on-road vehicle emissions factor model (EMFAC). The output values used in this analysis are adjusted to be Project-specific based on equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year. The CalEEMod tool provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Since a construction contractor(s) has not yet been retained for the Project, specific equipment specifications are not yet known. Therefore, recommended equipment and vehicle horsepower ratings and load factors provided in CalEEMod are used in this assessment. According to the CalEEMod User's Guide, the model "utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available."[29] Therefore, the use of the recommended CalEEMod data is an appropriate methodology. In addition, certain equipment, such as tower cranes and compressors, would be electric powered and were modeled in CalEEMod using the electric fuel input, rather than diesel fuel. Haul trucks would be used to export soil from the Project Site. Concrete trucks would be used to import concrete to the Project Site. Emissions from haul trucks and continuous pour concrete trucks were estimated outside of CalEEMod using EMFAC2014 emission factors for heavy-duty trucks because soil would be exported for only a portion of the days during the site preparation and grading/excavation construction phases, and the continuous concrete pour would occur for approximately 1 day (CalEEMod would incorrectly assume soil export and concrete import would occur every day during these phases).

Construction of the Project would occur over a number of phases and include activities such as demolition, debris and soil hauling, building construction, architectural coating, and paving. Information regarding the activities that would occur during these phases is provided below:

- **Demolition:** This phase is anticipated to begin as early as 2019 and last for approximately one month. If construction commences at a later date, this assessment would be considered conservative as future year emission factors tend to decline in future years. Construction equipment would include a concrete saw, loader, haul trucks, jackhammer, sweeper/scrubber and other construction equipment.
- **Site Preparation:** This phase is anticipated to occur during demolition and last for approximately one month. Construction equipment would include a concrete saw, excavator, and sweeper/scrubber.

[29] California Air Resources Board, CalEEMod User's Guide, p.1, November 2017, http://caleemod.com/. Accessed December 2017.

- **Grading and Excavation:** This phase is anticipated to have some overlap with the demolition and site preparation phase and last for approximately four months. Construction equipment would include a backhoe, drill rig, excavators, haul trucks, loaders, and sweeper/scrubber. Up to approximately 80,000 cubic yards of soil would be excavated and exported.
- **Utilities/Trenching:** This activity is anticipated to have some overlap with grading and excavation and last for approximately 3 months. During this phase, trenching for site utilizes would occur. Construction equipment would include a backhoe and sweeper/scrubber.
- **Foundation/Concrete Pouring:** This activity is anticipated to have some overlap with grading and excavation and utilities/trenching and would be on-going through building construction activities for approximately 2.5 years. During this activity, the building foundations would be prepared and concrete pouring would occur. Construction equipment would include a concrete trucks, backhoe, crane, forklift, and sweeper/scrubber.
- **Building Construction:** This phase is anticipated to begin after grading and excavation and after the building foundations have been prepared and last for just over 2 years. During this phase, the building would be constructed. Construction equipment would include cranes, forklifts, sweeper/scrubber, and material/vendor supply trucks.
- **Paving:** This activity is anticipated to last for approximately 2 months and occur during the building construction phase. During this activity, paving materials would be poured during construction of the buildings and related features and the surfaces would be paved. Construction equipment would include a backhoe, sweeper/scrubber, and other equipment.
- **Architectural Coating:** This activity is anticipated to last for approximately 2 years and occur during the building construction phase. During this activity, the interior and exterior coating would be applied to the residential and commercial uses as the floors are built out. Specific coating equipment would include an air compressor and forklift.

The emissions of GHGs associated with construction of the Project were calculated for each year of construction activity. Detailed emissions calculations are provided in **Appendix B**. Results of the GHG emissions calculations are presented in **Table 9**. Although GHGs are generated during construction and are accordingly considered one-time emissions, it is important to them when assessing all of the long-term GHG emissions associated with the Project.

TABLE 9
ESTIMATED UNMITIGATED PROJECT CONSTRUCTION GREENHOUSE GAS EMISSIONS

Emission Source	Annual GHG Emissions [a] (MTCO2e)
Construction Year 1	1,262
Construction Year 2	1,678
Construction Year 3	2,666
Construction Year 4	1,507

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

SOURCE: ESA 2017.

Operational Energy – Electricity

Electricity-related emissions of GHGs associated with operation of the Project are based on the size of the commercial and residential land uses (including residential amenities), the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions are calculated using the general formula shown previously as **Equation 1**. For residential land uses, emission factors are specified in units of dwelling units (DU). For nonresidential land uses, emission factors are specified in units of 1,000 square feet. This assessment also includes electricity-related GHG emissions from the proposed enclosed parking structure, which would include elevators, lighting, and a ventilation system.

Electricity demand is based on data from the CEUS, which lists energy demand by building type.[30] However, since the data from the CEUS is from 2002, CalEEMod incorporates correction factors to account for compliance with the 2016 Title 24 Building Standards Code, which went into effect on January 1, 2017. The Project would be required to meet the Title 24 standards in effect at the time of building permit application. For example, new Title 24 standards are anticipated to be adopted in the 2019 timeframe. Although the energy efficiency requirements of these future standards are not yet known, if these standards are in effect at the time of building permit application, the project would be expected achieve greater levels of energy efficiency compared to the 2016 Title 24 standards and energy-related GHG emissions would be reduced further below the levels shown in the analysis.

The Project would be designed to incorporate Project Design Features (PDFs) that would reduce its energy demand with the goal of achieving or exceeding the requirem-ents of the State of California Green Building Standards (CALGreen) Code, the City of Los Angeles Green Building Code, and the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification.[31] According to the USGBC, LEED is the most widely used green building rating system in the world. Thus, the Project would reduce its electricity demand as compared to the default electricity factors in CalEEMod. The PDFs were accounted for in CalEEMod by selecting the appropriate options in the "mitigation measures" section of the model. Green building features that would result in quantifiable reductions in GHG emissions would include the following:

> **Green Building Features**: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below:

[30] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017

[31] The LEED Gold Certification requirement for the Jobs and Economic Improvement Through Environmental Leadership Act for ELDP projects is established pursuant to AB 246 (Santiago, Ch. 522, Statutes of 2017), which was signed by the Governor on October 6, 2017.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

The LEED building energy efficiency credits are earned relative to the increase in energy efficiency as compared to the LEED building energy baseline, which is established based on prior building energy efficiency standards. While the Project would optimize building energy performance and achieve LEED credits for building energy performance, additional energy reductions from LEED energy efficiency measures are not applied to avoid double counting reductions in the modeling from compliance with California's current 2016 Title 24 building energy requirements.[32]

The LADWP provides electric service to the Project Site. Currently, LADWP provides 20 percent of electricity via renewable sources.[33] LADWP is required to provide an increasing percentage from renewable sources in compliance with the Renewables Portfolio Standard with 33 percent by 2020, 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. During calendar year 2015, 37 percent of the energy delivered to LADWP customers was generated from two coal-fired generating stations: the Intermountain Power Project (IPP), located in Utah, and the Navajo Generating Station (NGS), located in Arizona. These stations provide base load generation to Los Angeles; however, they emit about twice as much CO_2 as energy generated from natural gas.[34] On July 1, 2016, LADWP sold its 477 MW share in NGS to Salt River Project, three and a half years before the operating agreement and land lease expires in December 2019.[35] LADWP continues to focus on early coal replacement options as a means to lower LADWP's CO_2 emission levels and increase renewable sources in accordance with the Renewables Portfolio Standard.

32 The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards. The LEED baseline uses prior energy standards; therefore, in order to avoid double counting reductions, additional energy reductions for LEED compliance are not included in the current calculations. As a result, this assessment provides a conservative assessment of energy-related GHG emissions.

33 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-1.

34 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-8.

35 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-8.

Based on data obtained from CARB staff, "[i]f an applicant would like to use an EF [emission factor] that represents the state's Renewable Portfolio Standard (RPS) law and growth in electricity demand, the EF of 595 [pounds] CO_2/MWh may be used."[36] According to CARB staff, the "EF represents a 'marginal' supply profile for new generation that will be added to the grid in the years 2020 and beyond, and is consistent with the methodology used in state emission rule impact assessments."[37] Therefore, consistent with the CARB staff recommendation, a CO_2 intensity factor of 595 pounds of CO_2 per MWh was used for electricity emissions for Project operational year 2023. Future year CO_2 intensity factors were scaled proportionately based on the future year renewable energy targets of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Emission factors for CH_4 and N_2O were obtained from CalEEMod.[38] The estimated annual emissions from electrical demand from the project's land uses during the opening year are provided in **Table 10**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 10
PROJECT ELECTRICAL DEMAND GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
2023						
Apartment	794 DU	3,060.0	595	0.029	0.0062	829.3
High Turnover (Sit Down Rest.)	12.5	551.9	595	0.029	0.0062	149.6
Publicly Accessible Plaza Area	2.7	0.95	595	0.029	0.0062	0.3
Common Open Space (Exterior)	37.9	492.7	595	0.029	0.0062	133.5
Common Open Space (Interior)	23.0	299.1	595	0.029	0.0062	81.1
Private Balconies for Residents	39.7	13.9	595	0.029	0.0062	3.8
Enclosed Parking with Elevator	426.5	2,499.0	595	0.029	0.0062	677.3
Subtotal						**1,875**
2024-2026						
Apartment	794 DU	3,060.0	533	0.029	0.0062	743.3
High Turnover (Sit Down Rest.)	12.5	551.9	533	0.029	0.0062	134.1
Publicly Accessible Plaza Area	2.7	0.95	533	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	533	0.029	0.0062	119.7
Common Open Space (Interior)	23.0	299.1	533	0.029	0.0062	72.6
Private Balconies for Residents	39.7	13.9	533	0.029	0.0062	3.4
Enclosed Parking with Elevator	426.5	2,499.0	533	0.029	0.0062	607.0
Subtotal						**1,680**

36 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017. The emission factor of 595 pounds CO_2/MWh is from the California LEV III Initial Statement Of Reasons (ISOR, Dec. 7, 2011), http://www.arb.ca.gov/regact/2012/leviiighg2012/leviiighg2012.htm, based on analysis with CA-GREET model. This document is provided in **Appendix C**.

37 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017.

38 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
2027-2029						
Apartment	794 DU	3,060.0	488	0.029	0.0062	680.8
High Turnover (Sit Down Rest.)	12.5	551.9	488	0.029	0.0062	122.8
Publicly Accessible Plaza Area	2.7	0.95	488	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	488	0.029	0.0062	109.6
Common Open Space (Interior)	23.0	299.1	488	0.029	0.0062	66.5
Private Balconies for Residents	39.7	13.9	488	0.029	0.0062	3.1
Enclosed Parking with Elevator	426.5	2,499.0	488	0.029	0.0062	556.0
Subtotal						**1,539**
2030-2052						
Apartment	794 DU	3,060.0	444	0.029	0.0062	619.8
High Turnover (Sit Down Rest.)	12.5	551.9	444	0.029	0.0062	111.8
Publicly Accessible Plaza Area	2.7	0.95	444	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	444	0.029	0.0062	99.8
Common Open Space (Interior)	23.0	299.1	444	0.029	0.0062	60.6
Private Balconies for Residents	39.7	13.9	444	0.029	0.0062	2.8
Enclosed Parking with Elevator	426.5	2,499.0	444	0.029	0.0062	506.1
Subtotal						**1,401**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, Climate Zone 11, http://www.caleemod.com/. Accessed December 2017. The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards.

[b] California Air Resources Board, Statewide Emission Factors (EF) for Use with AB 900 Projects, January 2017.

[c] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[d] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

Operational Energy – Natural Gas

Natural gas-related emissions of GHGs associated with operation of the project are based on the size of the commercial, restaurant, and residential land uses (including residential amenities), the natural gas demand factors for the land uses, the GHG emission factors for the natural gas combustion, and the GWP values for the GHGs emitted. Annual natural gas GHG emissions are calculated using the general formula shown previously as **Equation 2**. For residential land uses, emission factors are specified in units of DU. For nonresidential land uses, emission factors are specified in units of 1,000 square feet.

Natural gas demand is based on data from the CEUS, which lists energy demand by building type.[39] However, since the data from the CEUS is from 2002, CalEEMod incorporates correction

[39] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017.

factors to account for compliance with the 2016 Title 24 Building Standards Code, which went into effect on January 1, 2017 (since the LEED baseline is established based on prior building energy efficiency standards, additional energy reductions from LEED energy efficiency measures are not applied to avoid double counting reductions).[40] The project would be designed to incorporate PDFs that would reduce its energy demand with the goal of achieving or exceeding the requirements of the CALGreen Code, the City of Los Angeles Green Building Code, and the USGBC LEED Gold Certification. Thus, the project would reduce its natural gas demand as compared to the default electricity factors in CalEEMod. The PDFs were accounted for in CalEEMod by selecting the appropriate options in the "mitigation measures" section of the model. A summary of the energy-efficiency PDFs is provided above in PDF-GHG-1.

The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the project were obtained from CalEEMod, which provides statewide emission factors.[41] The emissions of GHGs due to natural gas demand would be relatively steady for the years assessed. The estimated annual emissions from natural gas combustion from the project are provided in **Table 11**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 11
PROJECT NATURAL GAS COMBUSTION GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Natural Gas Demand Factor (MBtu/year) [a]	Emission Factor (pounds/MMBtu)			Annual GHG Emissions ($MTCO_2e$/year) [c]
			CO_2 [b]	CH_4 [b]	N_2O [b]	
2023-2052						
Apartment [e]	739.3	7,318.3	117.65	0.0023	0.0022	392.9
High Turnover (Sit Down Rest.)	12.5	2,885.4	117.65	0.0023	0.0022	154.9
Publicly Accessible Plaza Area	2.7	0	117.65	0.0023	0.0022	0
Common Open Space (Exterior)	37.9	394.8	117.65	0.0023	0.0022	21.2
Common Open Space (Interior)	23.0	239.7	117.65	0.0023	0.0022	12.9
Private Balconies for Residents	39.7	0	117.65	0.0023	0.0022	0
Enclosed Parking with Elevator	426.5	0	117.65	0.0023	0.0022	0
Subtotal						**582**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, Climate Zone 11, http://www.caleemod.com/. Accessed December 2017. The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards.

[b] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

[40] The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards. The LEED baseline uses prior energy standards; therefore, in order to avoid double counting reductions, additional energy reductions for LEED compliance are not included in the current calculations. As a result, this assessment provides a conservative assessment of energy-related GHG emissions.

[41] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

SOURCE: ESA 2017.

Operational Mobile

Mobile source emission calculations associated with the project are calculated using the VMT from the traffic analysis prepared for the project.[42] The estimated VMT in the traffic analysis is based on average trip lengths for each land use were determined using CalEEMod. The trip type describes the purpose of the trip generated at each land use, such as residential trips and commercial trips. Residential trips include home-work (H-W), home-shop (H-S), and home-other (H-O). Commercial trips include commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW). The trip lengths are based on the location and urbanization of the project area. The average trip length of each land use is the sum of the trip length of each trip type multiplied by the percentage of trip type.

The project is considered an "infill" project, as it is replacing existing commercial uses with a high-density, mixed-use development. The project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services provided by the nearby Metro Blue Line and Expo Line, where the Blue line provides convenient access to locations within Downtown Los Angeles, Long Beach and Compton, and where the Expo line provides convenient access to locations in Los Angeles, Culver City and Santa Monica. Both provide direct connections to the Metro Gold, Purple, and Expo lines that provide transit service to a multitude of locations through the Los Angeles region. The project would be located within a half-mile of public transportation, including 10 existing Metro bus routes (14, 28, 37, 70, 71, 76, 78, 79, 96 and 378), two Rapid Lines (770 and 728), one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB10), and two LADOT Commuter Express Lines CE 431 and CE 437. New housing and job growth, as a result of the completed project, is focused in a high-quality transit area (HQTA), which the Southern California Association of Governments (SCAG) defines as an area within a half mile of a well-serviced transit stop. These land use characteristics are analyzed below to demonstrate that the project would result in reduced vehicle trips, VMT, and associated transportation-related GHG emissions, as well as air pollutant emissions, compared to the statewide and South Coast Air Basin average.

Based on the AB 900 Traffic Assessment prepared by The Mobility Group, Project related reductions in trip generation and VMT due to the Project's infill nature, location, design, and TDM program were quantified.[43] The characteristics of the Project listed below would result in a reduction in VMT and associated GHG and air pollutant emissions.

- **Internal Capture Reduction:** The Project's restaurant space would provide a convenient local destination for the residential element of the Project without having to drive to other locations. It was estimated that a reduction of 15 percent of the trips to and from the restaurant space would come from the on-site residential element of the Project.

[42] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.
[43] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

- **Transit and Walk/Bike Reduction:** The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. Therefore, it was estimated that vehicle trips would be reduced by 20 percent due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

- **Transportation Demand Management (TDM) Reduction:** The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with information on alternate modes and walk destination opportunities.
  - Unbundling of residential parking
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers/showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

  The implementation of the TDM package would result in an estimated reduction of 10 percent of the vehicle trips to and from the residential element of the Proposed Project.

- **Pass-by Trip Reduction:** The Project's commercial restaurant space would provide a convenient local destination for residents in the local neighborhood without having to drive to other locations. It was estimated that a reduction of 20 percent of trips to and from the restaurant space would result from pass-by customers.

The annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic

analysis prepared for the Project.[44] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses. The VMT calculations for the project site uses are provided in **Appendix B**.

Emissions of GHGs from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the existing project site. The national policy for fuel efficiency and emissions standards for the United States auto industry requires that new passenger cars and light-duty trucks achieve an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016 (Phase I standards), based on USEPA calculation methods. In August 2012, more stringent phased-in standards were adopted for new model year 2017 through 2025 passenger cars and light-duty trucks. By 2020, new vehicles are projected to achieve 41.7 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 213 grams of CO_2 per mile (Phase II standards). By 2025, new vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile (Phase II standards). All vehicle types would visit the project site. Therefore, this assessment uses the South Coast Air Basin motor vehicle fleet mix and the fleet average calendar year emissions factors from EMFAC2014 to estimate mobile source GHG emissions. Mobile source emissions are estimates for calendar years 2023 through 2052.

The estimated annual emissions from mobile sources from the project are provided in **Table 12**, *Project Mobile Source Greenhouse Gas Emissions*. Detailed emissions calculations are provided in **Appendix B**.

TABLE 12
PROJECT MOBILE SOURCE GREENHOUSE GAS EMISSIONS

Fleet Mix Year (All Vehicle Classes)	Extimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
2023-2052			
2023	17,103,425	392.7	6,716
2024	17,103,425	382.7	6,546
2025	17,103,425	371.0	6,346
2026	17,103,425	361.2	6,178
2027	17,103,425	352.5	6,029
2028	17,103,425	344.9	5,899
2029	17,103,425	338.2	5,785
2030	17,103,425	332.4	5,686
2031	17,103,425	327.7	5,604
2032	17,103,425	323.3	5,529
2033	17,103,425	319.4	5,463
2034	17,103,425	316.2	5,408

44 The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

Fleet Mix Year (All Vehicle Classes)	Extimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
2023-2052			
2035	17,103,425	313.6	5,363
2036	17,103,425	311.6	5,330
2037	17,103,425	310.0	5,302
2038	17,103,425	308.8	5,281
2039	17,103,425	307.9	5,266
2040	17,103,425	307.2	5,255
2041	17,103,425	306.8	5,247
2042	17,103,425	306.5	5,243
2043	17,103,425	306.5	5,242
2044	17,103,425	306.5	5,242
2045	17,103,425	306.6	5,244
2046	17,103,425	306.9	5,249
2047	17,103,425	307.2	5,254
2048	17,103,425	307.6	5,261
2049	17,103,425	308.0	5,269
2050	17,103,425	308.6	5,279
2051 [c]	17,103,425	308.6	5,279
2052 [c]	17,103,425	308.6	5,279

[a] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017. Based on the estimated weekday VMT multiplied by 261 days per year and the estimated weekend VMT, using the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses multiplied by 104 days per year.

[b] EMFAC2014 Emission Factors for the South Coast Air Basin motor vehicle fleet mix.

[c] EMFAC2014 does not generate emission factors for calendar years after 2050. Therefore, 2050 emission factors were used to represent emissions in calendar years 2051 and 2052.

SOURCE: ESA 2017.

Operational Solid Waste

The project would generate MSW from day-to-day operational activities, which generally consists of product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, plastic, and other items routinely disposed of in trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the project are calculated using CalEEMod. The emissions are based on the size of the commercial and residential land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod using the general formula shown previously as **Equation 3**.

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. Annual waste disposal rates used in CalEEMod are based on waste generation data for applicable residential and nonresidential land uses from the City of Los Angeles and CalRecycle. The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of 76 percent, according to data available from the City.[45] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, are used in this assessment.

The estimated annual emissions from solid waste disposal from the project are provided in **Table 13**. The emissions of GHGs due to waste generation would be relatively steady for the years assessed. Detailed emissions calculations are provided in **Appendix B**.

TABLE 13
PROJECT SOLID WASTE DISPOSAL GREENHOUSE GAS EMISSIONS

Land Use [a]	Waste Diversion [b]	Waste Disposal Rate After Diversion (tons/year)	Landfill gas (no capture)	Landfill Gas (capture with flaring)	Annual GHG Emissions ($MTCO_2e$/year) [c]
2023-2052					
Apartment	76%	425.3	6%	94%	213.9
High Turnover (Sit Down Rest.)	76%	23.8	6%	94%	11.9
Subtotal					**226**

[a] Waste generation factors provided by
Apartment: City of Los Angeles (LA) California Environmental Quality Act (CEQA) Thresholds Guide, Chapter M.3 Solid Waste, (2006). Available at: http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf. Accessed September 2017.
Commercial (Restaurant): CalRecycle 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017. The calculation assumes all of the commercial space would be used for restaurant uses. If other types of retail use are located on the Project Site their solid waste generation would be less than this calculation.

[b] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

[c] Emissions are based on CalEEMod default values for landfill gas capture and flaring for the South Coast Air Basin region. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

With respect to municipal solid waste, the State has enacted regulations to address solid waste services and recycling. California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649 et seq. requires businesses that produce four cubic yards or more of solid waste per week or multifamily residential dwellings of five units or more to arrange for recycling services that are consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection, handling, or recycling of solid waste, to the extent that

[45] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

these services are offered and reasonably available from a local service provider.[46] In addition, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.8 et seq. requires after January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during 2014, a business that generates two cubic yards or more per week of commercial solid waste is required to arrange for organic waste recycling services that include at least one of the following actions: (1) source separate of organic waste from other waste and subscribe to a basic level of organic waste recycling service that includes collection and recycling of organic waste, (2) recycle its organic waste on-site or self-haul its own organic waste for recycling, (3) subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste, (4) make other arrangements to meet the organic waste requirements of a local governmental agency that are more stringent or comprehensive than the requirements of Chapter 12.9, unless the department determines that this requirement will not result in significant additional reductions of organics disposal.[47] The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan (SWIRP), also referred to as the City's Zero Waste Plan, whose goal is to lead Los Angeles towards being a "zero waste" City by 2030.[48] These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion (e.g., recycling) for the City to 76 percent as of 2013.[49] The City has also approved Ordinance No. 181519 (Los Angeles Municipal Code (LAMC) Chapter VI, Article 6, Section 66.32-66.32.5), which requires the diversion of mixed construction and demolition debris to City certified construction and demolition waste processors. The project would be consistent with the City and State waste requirements by utilizing waste collection services that are approved by the City and that meet the applicable requirements for waste diversion and recycling mandates. The City generally relies on single-stream waste recycling where mixed waste is collected and sorted for recycling at a waste reclamation facility. The project would subscribe to a municipal solid waste collection service that is approved by the City and that meets applicable City and State waste collection, management, recycling and diversion requirements.

Operational Water and Wastewater

Water and wastewater generated from the existing land uses under the project would require energy to supply, distribute and treat. Emissions of GHGs would result from the combustion of

46 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649. 2011, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.8.&article=. Access October 2017

47 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.9. January 2015, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.9.&article=. Accessed October 2017.

48 City of Los Angeles Department of Public Works, LA Sanitation, Solid Waste Integrated Resources Plan (SWIRP) – A Zero Waste Management Plan, October 2013, https://www.lacitysan.org/san/sandocview?docname=cnt012522. Accessed October 2017.

49 City of Los Angeles Department of Public Works, LA Sanitation, Recycling, 2017, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r?_adf.ctrl-state=kq9mn3h5a_188. Accessed October 2017.

fossil fuels to produce electricity as well as the wastewater treatment process itself, which results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O.

The emissions of GHGs associated with water demand and wastewater generation under the project are calculated using CalEEMod. The emissions are based on the size of the commercial and residential land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod using the general formula shown previously as **Equation 4**.

CalEEMod calculates water demand based on annual rates in the Pacific Institute *Waste Not Want Not* report.[50] CalEEMod provides options to account for the use of water saving features such as the use of low-flow water fixtures (e.g., low-flow faucets, low-flow toilets). The project would incorporate PDFs to reduce indoor and outdoor water usage, as summarized previous in PDF-GHG-1. Implementation of these PDFs would reduce indoor water usage by approximately 35 percent compared to typical usage values for developments meeting the minimum requirements. These water reduction factors have been accounted for in CalEEMod.

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report *Refining Estimates of Water-Related Energy Use in California*, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[51] The same electricity GHG emissions factors discussed under the **Operational Energy – Electricity** subheading are used for water and wastewater energy usage.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in CalEEMod for the type of wastewater treatment. Calculation formulas are described in detail in the *California Emissions Estimator Model User's Guide, Appendix A*.[52] As stated in the *User's Guide*, the GHGs emitted from each type of wastewater treatment are based on the CARB's *Local Government Operations Protocol* (LGOP),[53] which are in turn based on United States Environmental Protection Agency (USEPA) methodologies.[54] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas. The estimated annual emissions

50 Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm.

51 California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

52 California Air Resources Board, CalEEMod User's Guide, Appendix A, November 2017, http://caleemod.com/. Accessed December 2017.

53 California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, (2008).

54 United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, (2008).

from water and wastewater from the project are provided in **Table 14**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 14
PROJECT WATER AND WASTEWATER GREENHOUSE GAS EMISSIONS

Land Use	Indoor Water Demand (gal/year) [a]	Outdoor Water Demand (gal/year) [a]	Suppy Water (kwh/Mgal)	Treat Water (kWh/Mgal)	Distribute Water (kWh/Mgal)	Wastewater Treatment (kWh/Mgal)	Annual GHG Emissions ($MTCO_2e$/year) [b]
2023							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	200.9
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	11.5
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	41.8
Subtotal							**254**
2024-2026							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	184.4
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	10.6
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	38.4
Subtotal							**234**
2027-2029							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	172.5
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	10.0
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	35.9
Subtotal							**218**
2030-2052							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	160.8
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	9.4
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	33.5
Subtotal							**204**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[b] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

[c] For emissions calculation purposes, Common Open Space (Interior/Exterior) was categorized in CalEEMod as the land use type General Office Building which is defined as land uses that house multiple tenants where affairs of businesses commercial or industrial organizations or professional persons or firms are conducted. This was determined to provide a reasonably conservative estimate of emissions for these project uses.

SOURCE: ESA 2017.

Operational Area and Stationary

Area sources of GHG emissions resulting from operation of the Project include equipment used to maintain landscaping, such as lawnmowers and trimmers. The combustion of fossil fuels to operate these equipment results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. There are no other substantial stationary sources on-site, such as generators or industrial sized boilers. Residential hearths would not be installed in the project's residential uses.

The emissions of GHGs associated with operational area sources under the Project are calculated using CalEEMod. The emissions for landscaping equipment are based on the size of the commercial and residential land uses, the GHG emission factors for fuel combustion, and the GWP values for the GHGs emitted. Annual GHG emissions from landscaping equipment in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Landscaping Equipment:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times EF_{LE} \times A_{LE} \times GWP)_i \right) \div 10^6 \qquad \textbf{[Equation 5]}$$

Where:
- Units = Number of land use units (same land use type) [DU or 1000 sqft]
- EF_{LE} = GHG emission factor [grams (g)/DU or 1000 sqft/day]
- A_{LE} = Landscaping equipment operating days per year [day/year]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 10^6 = Conversion factor [g/MT]
- i = Summation index

CalEEMod uses landscaping equipment GHG emission factors from the CARB OFFROAD model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003).* [55] CalEEMod estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin.

Stationary sources would include on-site emergency generator with an estimated capacity rated at approximately 708 kilowatts (950 horsepower), which would provide emergency power primarily for lighting and other emergency building systems. Emissions of GHGs would be generated during maintenance and testing operations and emissions were estimated separately outside of the CalEEMod software. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines). Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470. In general, stationary-source emergency generator emissions are calculated as follows:

[55] California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, (6/13/2003), http://www.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_ act.pdf. Accessed September 2017.

Stationary Source Emergency Generator:

$$Emissions_{Diesel}\,[g] = \sum_i (EF \times Pop \times HP \times Load \times Activity)_i \quad \textbf{[Equation 6]}$$

Where:
EF = Emission factor [g/bhp-hr]
Pop = Population [quantity of same equipment type]
HP = Maximum rated horsepower [hp]
Load = Load Factor [dimensionless]
Activity = Hours of operation [hours per day, hours per year]
i = Summation index

The estimated annual emissions from area and stationary sources under the project are provided in **Table 15**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 15
PROJECT AREA AND STATIONARY SOURCE GREENHOUSE GAS EMISSIONS

Emission Source	Annual GHG Emissions [a]
Landscaping Equipment	14
Emergency Generator	19
Total GHG Emissions	**33**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

SOURCE: ESA 2017.

Carbon Sequestration from Vegetation

The Project site includes a number of green spaces that will include a mix of canopy trees and native shrubs, perennials, and ground cover. Canopy trees will provide a source of carbon sequestration that would offer a reduction in GHG emissions produced by the project. Native shrubs, perennials, and ground cover would also contribute to carbon sequestration.

Carbon sequestration was estimated using CalEEMod, which calculates carbon sequestration from vegetation based on the Project's net addition of vegetated land uses, the number of new trees, and the types of trees being planted. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. According the methodology in the CalEEMod User's Guide, carbon sequestration from vegetation are calculated as follows:

Carbon Sequestration from Vegetation (Land Use Change):

$$\text{Total Sequestered } CO_2 = \sum_i (SeqCO_2 \times Area)_i - \sum_j (SeqCO_2 \times Area)_j \quad \textbf{[Equation 7]}$$

Where:
$SeqCO_2$ = Mass of sequestered CO_2 per unit area [$MTCO_2$/acre]
Area = Area of land for specific land use type [acre]
i = Summation index for final land use type
j = Summation index for initial land use type

Carbon Sequestration from Vegetation (Trees):

Total Sequestered $CO_2 = GP \times \sum_i (SeqCO_2 \times Trees)_i$ **[Equation 8]**

Where:
- GP = Growing period for all trees, expressed in years (20)
- $SeqCO_2$ = Annual CO_2 accumulation per tree for species class [$MTCO_2$/tree]
- Trees = Number of net new trees of broad species class
- i = Summation index for broad species class

The Project's planting area of native plants, shrubs, perennials, and ground-cover was modeled using the "grassland" category which is the most applicable vegetation category for the Project. The "grassland" category represents the lowest non-zero carbon sequestration value of the available categories in CalEEMod,[56] thus providing for a conservative estimate of the Project's carbon sequestration from the net addition of native plants, shrubs, perennials, and ground-cover to the Project Site. The Project will provide 137 canopy trees; however, the exact type and species are not known at this Project planning stage. According to the CalEEMod User's Guide, if specific tree types are not known, the "miscellaneous" tree type should be used.[57] Therefore, therefore, the "miscellaneous" tree type option was used per the CalEEMod User's Guide.

The effects of carbon sequestration from canopy trees assumes the IPCC active growing period of 20 years. Accumulation of carbon in biomass decreases as the trees age and would eventually be offset by clipping, pruning, and tree death. Therefore, GHG reductions from carbon sequestration are only applied to the first 20 years of the project's operation. The estimated annual carbon sequestration rate is provided in **Table 16**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 16
CARBON SEQUESTRATION FROM VEGETATION

Reduction Source	Carbon Sequestered ($MTCO_2e$) [a]
Total GHG Reduction	98
Yearly GHG Reduction (20-year growing period) [b]	**5**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

[b] Annual CO_2 sequestration applied over a 20-year period beginning in the Project's first full operational year.

SOURCE: ESA 2017.

Summary of Project GHG Emissions

A summary of the GHG emissions under the project is provided in **Table 17**.

[56] Grassland applies to all grassland as well as woody vegetation and other non-grass vegetation such as herbs and brushes, which are consistent with the types of vegetation (native plants, shrubs, perennials, and ground-cover) proposed for this Project. Cropland and forest have higher carbon sequestration values, but are also less applicable to this Project.

[57] California Air Resources Board, CalEEMod User's Guide, Appendix A, Section 11.2, November 2017, http://caleemod.com/. Accessed December 2017.

TABLE 17
SUMMARY OF ANNUAL GHG EMISSIONS

	Annual GHG Emissions ($MTCO_2e$/year)								
Year	Construc-tion	Electricity	Natural Gas	Mobile	Waste	Water and Waste Water	Area and Stationary	CO_2 Seq. from Net New Vegetation [a]	Total [b]
Const Yr 1	1,262	–	–	–	–	–	–	–	1,262
Const Yr 2	1,678	–	–	–	–	–	–	–	1,678
Const Yr 3	2,666	–	–	–	–	–	–	–	2,666
Const Yr 4 [c]	1,507	781	243	2,895	94	106	14	–	5,640
2023	–	1,875	582	6,716	226	254	33	(5)	9,681
2024	–	1,680	582	6,546	226	234	33	(5)	9,296
2025	–	1,680	582	6,346	226	234	33	(5)	9,096
2026	–	1,680	582	6,178	226	234	33	(5)	8,928
2027	–	1,539	582	6,029	226	218	33	(5)	8,622
2028	–	1,539	582	5,899	226	218	33	(5)	8,492
2029	–	1,539	582	5,785	226	218	33	(5)	8,378
2030	–	1,401	582	5,686	226	204	33	(5)	8,127
2031	–	1,401	582	5,604	226	204	33	(5)	8,045
2032	–	1,401	582	5,529	226	204	33	(5)	7,970
2033	–	1,401	582	5,463	226	204	33	(5)	7,904
2034	–	1,401	582	5,408	226	204	33	(5)	7,849
2035	–	1,401	582	5,363	226	204	33	(5)	7,804
2036	–	1,401	582	5,330	226	204	33	(5)	7,771
2037	–	1,401	582	5,302	226	204	33	(5)	7,743
2038	–	1,401	582	5,281	226	204	33	(5)	7,722
2039	–	1,401	582	5,266	226	204	33	(5)	7,707
2040	–	1,401	582	5,255	226	204	33	(5)	7,696
2041	–	1,401	582	5,247	226	204	33	(5)	7,688
2042	–	1,401	582	5,243	226	204	33	(5)	7,684
2043	–	1,401	582	5,242	226	204	33	–	7,688
2044	–	1,401	582	5,242	226	204	33	–	7,688
2045	–	1,401	582	5,244	226	204	33	–	7,690
2046	–	1,401	582	5,249	226	204	33	–	7,695
2047	–	1,401	582	5,254	226	204	33	–	7,700
2048	–	1,401	582	5,261	226	204	33	–	7,707
2049	–	1,401	582	5,269	226	204	33	–	7,715
2050	–	1,401	582	5,279	226	204	33	–	7,725
2051	–	1,401	582	5,279	226	204	33	–	7,725
2052	–	1,401	582	5,279	226	204	33	–	7,725

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

[b] The Project GHG emissions may be re-evaluated periodically to account for future reductions from the promulgation of state regulations, such as post-2025 model year vehicle emissions standards and post-2030 Renewables Portfolio Standard and other regulations that would reduce Project-related operational GHG emissions but cannot be quantified at this time.

[c] Based on the anticipated Project construction schedule, the Project could be operational during the last 5 months of year 2022. Therefore, estimated operational emissions associated with approximately 5 months of operational activity are included for year 2022.

SOURCE: ESA 2017.

3.3.3 Project GHG Emissions Offsets

Annual emissions of GHGs from the Project will incorporate GHG emission offsets as necessary to achieve a net zero increase in site GHG emissions, relative to the baseline annual GHG emissions, for the estimated Project lifetime. The Project proposes to meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through Project-based or community-based program measures that will reduce GHG emissions in the region. Examples of the types of Project-based or community-based program measures that could be implemented are as follows:

- Install solar photovoltaic panels on Project building rooftops based on available physical roof space taking into account space dedicated for rooftop amenities, open space/landscaping, decks/pool areas, and space required for rooftop equipment, such as heating, ventilation, and air conditioning units.
- Purchase certified green-power from the local utility provider to offset Project-related GHG emissions from electricity demand.
- Coordinating with property owners in the City of Los Angeles or in other cities or communities in California for the installation of rooftop solar photovoltaic panels in accordance with state and local permitting standards on existing buildings, parking structures, carports, or other facilities.
- Seek opportunities for offsetting GHG emissions from existing sources in the City of Los Angeles or in other cities or communities in California. Examples include coordinating with local transportation agencies and property owners and establishing electric vehicle supply equipment (EVSE) at park-and-ride lots or other appropriate locations, coordinating with local transportation agencies and school districts and replacing diesel- or gasoline-fueled buses with less-polluting technologies such as compressed natural gas, electric, hybrid-electric, fuel cell, or other commercially available technologies, implementing methane capture and destruction programs at dairy farms, or other GHG emissions offset programs.
- Plant new drought-tolerant, high-carbon sequestering, and/or native trees of appropriate size and type at off-site locations such as parks in the City of Los Angeles or in other cities or communities in California, that would result in a net sequestration of CO_2 emissions.
- Purchase carbon credits from a reputable carbon market. Priority should be given to those credits generated within the City of Los Angeles, and in decreasing preference, credits generated within the region, in-state, and out-of-state.

Through implementation of the Project-based or community-based GHG reduction program, the Project will meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG emissions. The acquisition of carbon credits as part of the Project-based or community-based GHG reduction program will serve to ensure that all projected additional GHG emissions are offset. If acquiring carbon credits, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits from a qualified GHG emissions broker (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to achieve a net zero increase in site GHG emissions. Consistent with SCAQMD's definition of the "life of

the project" for CEQA GHG purposes, provided in SCAQMD's Governing Board Agenda Item 31, December 5, 2008, the project would be required to offset emissions over a 30-year lifetime. The SCAQMD recommends that offsets should have a 30-year project life, should be real, quantifiable, verifiable, and surplus and will be considered in the following prioritized manner: (1) project design feature/on-site reduction measures; (2) off-site within the neighborhood; (3) off-site within the SCAQMD jurisdiction; (4) off-site within the State; (5) off-site out-of-State. The project would obtain offsets following this prioritization. The necessary offsets are summarized below in **Section 4.0**. Offsets are estimated for a project useful lifetime of 30 years, which is recommended as a presumed project lifetime per SCAQMD guidance.[58]

[58] South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2. Accessed September 2017.

SECTION 4
Comparison of Project to Baseline Condition

Table 18 provides a summary of the determination of net additional GHG emissions comparing the existing site GHG emissions and the Project GHG emissions including the Project's total construction-related GHG emissions. Based on these GHG emissions estimates, the Project would not result in net additional contemporaneous GHG emissions compared to the baseline annual operational emissions at any time.

TABLE 18
EVALUATION OF NET GHG EMISSIONS FOR THE PROJECT

Year	Baseline Annual Operations	Project Total	Project GHG Reductions from Offsets [a]	Net Change from Baseline
Const Yr 1	0	1,262	(1,262)	0
Const Yr 2	0	1,678	(1,678)	0
Const Yr 3	0	2,666	(2,666)	0
Const Yr 4 [b]	195	5,640	(5,172)	0
2023	468	9,681	(9,213)	0
2024	468	9,296	(8,828)	0
2025	468	9,096	(8,628)	0
2026	468	8,928	(8,460)	0
2027	468	8,622	(8,154)	0
2028	468	8,492	(8,024)	0
2029	468	8,378	(7,910)	0
2030	468	8,127	(7,659)	0
2031	468	8,045	(7,577)	0
2032	468	7,970	(7,502)	0
2033	468	7,904	(7,436)	0
2034	468	7,849	(7,381)	0
2035	468	7,804	(7,336)	0
2036	468	7,771	(7,303)	0
2037	468	7,743	(7,275)	0
2038	468	7,722	(7,254)	0
2039	468	7,707	(7,239)	0
2040	468	7,696	(7,228)	0
2041	468	7,688	(7,220)	0
2042	468	7,684	(7,216)	0
2043	468	7,688	(7,220)	0
2044	468	7,688	(7,220)	0
2045	468	7,690	(7,222)	0

Year	Baseline Annual Operations	Project Total	Project GHG Reductions from Offsets [a]	Net Change from Baseline
2046	468	7,695	(7,227)	0
2047	468	7,700	(7,232)	0
2048	468	7,707	(7,239)	0
2049	468	7,715	(7,247)	0
2050	468	7,725	(7,257)	0
2051	468	7,725	(7,257)	0
2052	468	7,725	(7,257)	0

[a] The quantity of GHG emissions offsets may be re-evaluated periodically to account for future reductions from the promulgation of state regulations, such as post-2025 model year vehicle emissions standards and post-2030 Renewables Portfolio Standard and other regulations that would reduce Project-related operational GHG emissions but cannot be quantified at this time.

[b] Based on the anticipated Project construction schedule, the Project could be operational during the last 5 months of year 2022. Therefore, estimated operational emissions associated with approximately 5 months of operational activity are included for year 2022.

SOURCE: ESA 2017.

The Project will commit to implementing Project-based or community-based program measures, as discussed in the previous section, that will achieve no net increase in GHG emissions. As such, the Project would not result in net contemporaneous GHG emissions compared to the Baseline Condition, taking into account GHG Project-based or community-based program measures and offsets. Therefore, this analysis demonstrates that the Project meets the GHG emissions requirements of the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.) and would result in no net GHG emissions.

Appendix A
Baseline Operational Emissions

ESA

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Year	CH4	N2O	CO2e
	25	*298*	
2017	2.60E-08	-	4.62E-04
2018	2.39E-08	-	4.52E-04
2021	1.90E-08	-	4.18E-04
2022	1.78E-08	-	4.06E-04
2023	1.66E-08	-	3.93E-04
2024	1.58E-08	-	3.83E-04
2025	1.50E-08	-	3.71E-04
2026	1.42E-08	-	3.61E-04
2027	1.36E-08	-	3.52E-04
2028	1.31E-08	-	3.45E-04
2029	1.26E-08	-	3.38E-04
2030	1.22E-08	-	3.32E-04
2031	1.18E-08	-	3.28E-04
2032	1.15E-08	-	3.23E-04
2033	1.12E-08	-	3.19E-04
2034	1.10E-08	-	3.16E-04
2035	1.08E-08	-	3.14E-04
2036	1.06E-08	-	3.12E-04
2037	1.04E-08	-	3.10E-04
2038	1.03E-08	-	3.09E-04
2039	1.02E-08	-	3.08E-04
2040	1.01E-08	-	3.07E-04
2041	1.00E-08	-	3.07E-04
2042	9.94E-09	-	3.07E-04
2043	9.89E-09	-	3.06E-04
2044	9.82E-09	-	3.07E-04
2045	9.76E-09	-	3.07E-04
2046	9.65E-09	-	3.07E-04
2047	9.61E-09	-	3.07E-04
2048	9.59E-09	-	3.08E-04
2049	9.56E-09	-	3.08E-04
2050	9.53E-09	-	3.09E-04
2051	9.53E-09	-	3.09E-04
2052	9.53E-09	-	3.09E-04

Source: EMFAC2014, South Coast Air Basin (Los Angeles County), "Emissions" (or "Burden") mode.

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

			GHG Emission Factors (metric tons/year)			
Scenario	**Year**	**VMT/year**	**CO2**	**CH4**	**N2O**	**CO2e**
			1	*25*	*298*	
Existing Uses	2017	859,940	397.04	0.02	-	397.6
5 Months	2022	7,252,246	2,942.82	0.13	-	2,946
Project	2023	17,405,390	6,827.35	0.29	-	6,835
	2024	17,405,390	6,654.31	0.27	-	6,661
	2025	17,405,390	6,451.28	0.26	-	6,458
	2026	17,405,390	6,280.88	0.25	-	6,287
	2027	17,405,390	6,129.47	0.24	-	6,135
	2028	17,405,390	5,997.54	0.23	-	6,003
	2029	17,405,390	5,881.53	0.22	-	5,887
	2030	17,405,390	5,780.77	0.21	-	5,786
	2031	17,405,390	5,698.14	0.21	-	5,703
	2032	17,405,390	5,621.31	0.20	-	5,626
	2033	17,405,390	5,555.06	0.20	-	5,560
	2034	17,405,390	5,499.02	0.19	-	5,504
	2035	17,405,390	5,452.89	0.19	-	5,458
	2036	17,405,390	5,419.47	0.18	-	5,424
	2037	17,405,390	5,391.21	0.18	-	5,396
	2038	17,405,390	5,369.98	0.18	-	5,374
	2039	17,405,390	5,354.33	0.18	-	5,359
	2040	17,405,390	5,343.39	0.18	-	5,348
	2041	17,405,390	5,334.90	0.17	-	5,339
	2042	17,405,390	5,330.99	0.17	-	5,335
	2043	17,405,390	5,329.98	0.17	-	5,334
	2044	17,405,390	5,330.72	0.17	-	5,335
	2045	17,405,390	5,332.83	0.17	-	5,337
	2046	17,405,390	5,337.19	0.17	-	5,341
	2047	17,405,390	5,342.95	0.17	-	5,347
	2048	17,405,390	5,349.74	0.17	-	5,354
	2049	17,405,390	5,357.37	0.17	-	5,362
	2050	17,405,390	5,367.89	0.17	-	5,372
	2051	17,405,390	5,367.89	0.17	-	5,372
	2052	17,405,390	5,367.89	0.17	-	5,372

Source: ESA 2017

1045 Olive - Existing

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	14.65	1000sqft	0.62	14,653.00	0
Parking Lot	5.95	1000sqft	0.14	5,952.00	0
Strip Mall	5.17	1000sqft	0.20	5,171.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2017
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1132	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity: LADWP, 2016 Final Power Integrated Resource Plan, Table C-1 Year 2015, (December 2016).

Land Use - Existing buildings (15,827 sf is currently vacant and not included).

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Energy Use - Using Historical Data: Y

Water And Wastewater - No landscaping at existing uses; therefore, outdoor water is set at 0 gal/yr.

Solid Waste - CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1. Based on 27 employees and 8.2 lbs/day/employee. Assigned to the retail use.

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.88	0.88
tblLandUse	LotAcreage	0.34	0.62
tblLandUse	LotAcreage	0.12	0.20
tblProjectCharacteristics	CO2IntensityFactor	1227.89	1132
tblSolidWaste	SolidWasteGenerationRate	5.43	40.00
tblSolidWaste	SolidWasteGenerationRate	13.77	0.00
tblWater	OutdoorWaterUseRate	234,714.32	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Energy	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	80.7525	80.7525	2.0600e-003	4.5000e-004	80.9366
Waste						0.0000	0.0000		0.0000	0.0000	8.1196	0.0000	8.1196	0.4799	0.0000	20.1161
Water						0.0000	0.0000		0.0000	0.0000	1.1963	25.2108	26.4071	0.1235	3.0300e-003	30.3994

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Energy	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	80.7525	80.7525	2.0600e-003	4.5000e-004	80.9366
Waste						0.0000	0.0000		0.0000	0.0000	1.9487	0.0000	1.9487	0.1152	0.0000	4.8279
Water						0.0000	0.0000		0.0000	0.0000	1.1963	25.2108	26.4071	0.1235	3.0300e-003	30.3994

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.4370	79.4370	2.0400e-003	4.2000e-004	79.6134
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.4370	79.4370	2.0400e-003	4.2000e-004	79.6134
NaturalGas Mitigated	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3154	1.3154	3.0000e-005	2.0000e-005	1.3233
NaturalGas Unmitigated	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3154	1.3154	3.0000e-005	2.0000e-005	1.3233

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	9411.22	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5022	0.5022	1.0000e-005	1.0000e-005	0.5052
Unrefrigerated Warehouse-No Rail	15239.1	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8132	0.8132	2.0000e-005	1.0000e-005	0.8181
Total		**1.3000e-004**	**1.2100e-003**	**1.0200e-003**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3154**	**1.3154**	**3.0000e-005**	**2.0000e-005**	**1.3233**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	9411.22	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5022	0.5022	1.0000e-005	1.0000e-005	0.5052
Unrefrigerated Warehouse-No Rail	15239.1	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8132	0.8132	2.0000e-005	1.0000e-005	0.8181
Total		**1.3000e-004**	**1.2100e-003**	**1.0200e-003**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3154**	**1.3154**	**3.0000e-005**	**2.0000e-005**	**1.3233**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	5213.95	2.6772	7.0000e-005	1.0000e-005	2.6831
Strip Mall	82529.2	42.3760	1.0900e-003	2.2000e-004	42.4700
Unrefrigerated Warehouse-No Rail	66964.2	34.3839	8.8000e-004	1.8000e-004	34.4602
Total		**79.4370**	**2.0400e-003**	**4.1000e-004**	**79.6134**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	5213.95	2.6772	7.0000e-005	1.0000e-005	2.6831
Strip Mall	82529.2	42.3760	1.0900e-003	2.2000e-004	42.4700
Unrefrigerated Warehouse-No	66964.2	34.3839	8.8000e-004	1.8000e-004	34.4602
Total		**79.4370**	**2.0400e-003**	**4.1000e-004**	**79.6134**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Unmitigated	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004

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	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0720					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Total	**0.0813**	**0.0000**	**3.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**6.4000e-004**	**0.0000**	**0.0000**	**6.8000e-004**

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	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0720					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Total	**0.0813**	**0.0000**	**3.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**6.4000e-004**	**0.0000**	**0.0000**	**6.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4071	0.1235	3.0300e-003	30.3994
Unmitigated	26.4071	0.1235	3.0300e-003	30.3994

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.382955 / 0	2.6819	0.0125	3.1000e-004	3.0873
Unrefrigerated Warehouse-No Rail	3.38781 / 0	23.7252	0.1110	2.7300e-003	27.3120
Total		**26.4071**	**0.1235**	**3.0400e-003**	**30.3994**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.382955 / 0	2.6819	0.0125	3.1000e-004	3.0873
Unrefrigerated Warehouse-No	3.38781 / 0	23.7252	0.1110	2.7300e-003	27.3120
Total		**26.4071**	**0.1235**	**3.0400e-003**	**30.3994**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.9487	0.1152	0.0000	4.8279
Unmitigated	8.1196	0.4799	0.0000	20.1161

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	40	8.1196	0.4799	0.0000	20.1161
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**8.1196**	**0.4799**	**0.0000**	**20.1161**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.6	1.9487	0.1152	0.0000	4.8279
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**1.9487**	**0.1152**	**0.0000**	**4.8279**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Project Construction and Operational Emissions

ESA

B-1 Project Construction Emissions

1045 Olive Street Project
Air Quality and Greenhouse Gas Assessment

last update: 11/28/2017

Table 1: CalEEMod Land Use Inputs

Land Use	CalEEMod Land Use Type	Units [a]			
Existing Uses to be Demolished/Removed					
Four Commercial Buildings	General Office	35.65	gross ksf	35,651	gross sf
Paved Parking Area	Parking Lot	5.95	gross ksf	5,952	gross sf
Total Existing Uses to be Demolished/Removed				***41,603***	***gross sf***
Project					
High Rise	High-Rise Apartment	794	DU	739,246	sf
Commerical Uses	General Office	12.50	ksf	12,504	sf
Total Floor Area		751.78	ksf	751,777	sf
Open Space					
Publically Accessible Plaza Area	City Park	2.73	ksf	2,728	sf
Common OS (Exterior) for Project Residents	General Office	37.93	ksf	37,927	sf
Common OS (Interior) for Project Residents	General Office	23.03	ksf	23,025	sf
Private Balcony Space for Project Residents	Other Non-asphalt surfaces	39.70	ksf	39,700	sf
Total Open Space		103.38	ksf	103,380	sf
Total Parking	Enclosed Parking with Elevator	891	spaces	426,458	sf
Bicycle Parking	N/A	891	bicyle spaces		
Trees	N/A	130	(with just over 0.2 acres of planting area)		
Lot Area		0.96	acres		

Notes:

a. Square footage values may be rounded up to provide a conservative analysis.

Table 2: Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

								Calculated in EMFAC2014 (outside of CalEEMod)									
CalEEMod Construction Phase	**Start Date**	**End Date**	**No. Work Days**	**Site Prep/ Demo (CY)**	**Truck Capacity (CY)**	**Truck Total One-Way Trips**	**Max Daily One-Way Trips**	**Soil/ Material Export (CY)**	**Soil/ Material Import (CY)**	**Soil/ Material Haul Truck Capacity (CY)**	**Soil/ Material Haul Truck Total One-Way Trips**	**Max Daily One-Way Trips**	**Concrete Mat Volume (CY)**	**Concrete Truck Capacity (CY)**	**Concrete Truck Total One-Way Trips**	**Concrete Truck Daily One-Way Trips**	**Vendor One-Way Trips/Max Day [a]**	**Worker One-Way Trips/Max Day [b]**
Project																		
Demolition	4/1/2019	4/30/2019	26	3,410	10	680	26										6	12
Site Preparation	4/1/2019	4/30/2019	26					520	-	20	52	30						38
Grading/Excavation	4/1/2019	7/31/2019	105					80,000	-	14	11,429	500					6	132
Drainage/Utilities/Trenching	7/1/2019	9/30/2019	79														6	50
Foundations	6/1/2019	12/31/2021	810															350
Continuous Concrete Pour (approx. 1 day during Foundations) (Calculated in EMFAC2014 - outside of CalEEMod)	1 day		1										12,148	10	1,215	1,215		350
Building Construction	7/1/2020	9/30/2022	705														174	738
Paving	5/1/2022	6/30/2022	53															50
Architectural Coating	10/1/2020	9/30/2022	626															62

Notes:

a. Vendor trucks trips for demolition, grading, and drainage/utilities/trenching represent water trucks. Vendor truck trips for building construction are based on CalEEMod defaults.

b. Worker trips provided by Project contractor representative.

Sources: O.K.O Engineering, Nov 2016; AC Martin Partners, June 2017; Carter Romanek, May 2017; Shlemmer Algaze Associates, December 2016.

1045 Olive Street Project last updated: 11/28/2017
Air Quality and Greenhouse Gas Assessment

Table 3: Off-Road Heavy-Duty Construction Equipment

ction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	Max Expected Hours of Operation/Day Per Equipment	Max Expected Hours of Operation/Week Per Equipment	Emissions Tier Rating	Notes/Comments
Demolition	Air Compressor	1	10	60		Electric
	Concrete/Industrial Saws	1	10	60	Tier 4 Final	
	Jackhammers	1	10	60		(powered by air compressor)
	Loaders	1	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Site Preparation	Concrete/Industrial Saws	1	10	60	Tier 4 Final	
	Excavator	1	10	60	Tier 4 Final	
Grading/Excavation	Backhoes	1	10	60	Tier 4 Final	
	Bore/Drill Rigs	1	10	60	Tier 4 Final	
	Excavators	2	10	60	Tier 4 Final	
	Loaders	1	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Drainage/Utilities/Trenching	Backhoes	1	10	60	Tier 4 Final	
	Sweeper/Srubbers	1	10	60	Tier 4 Final	
					Tier 4 Final	
Foundations	Backhoes	1	10	60	Tier 4 Final	
	Cranes (Electric)	1	6	36		Electric
	Forklifts	1	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Building Construction	Cranes (Electric)	2	6	36		Electric
	Forklifts	2	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Paving	Backhoes	1	10	60	Tier 4 Final	
	Signal Boards	1	10	60		
	Paver	1	10	60	Tier 4 Final	
Architectural Coating	Air Compressor	1	10	60		Electric
	Forklifts	1	10	60	Tier 4 Final	

Sources: O.K.O Engineering, Nov 2016; AC Martin Partners, June 2017; Carter Romanek, May 2017; Shlemmer Algaze Associates, December 2016.

Construction Assumptions - Demolition

Description: Surface parking and two-story multi-family structure

Demolition Schedule				**Notes**
Start Date	4/1/2019			
End Date	4/30/2019			
Work Days	26			

Demolition Quantities				**Notes**
Land Use	**Amount**	***Units***		
Residential Building	35.7	*KSF*		Estimate from Google Earth, two story multi-family
Hardscape Demo	6.0	*KSF*		Information from Client

Hardscape Demolition Volume				**Notes**
Total Area(KSF)	6.0			
Thickness (ft)	0.5	*feet*		
Debris Volume (CY)	110	*(rounded, estimated)*		

Building Demolition Volume				**Notes**
Total Area (KSF)	35.7			
Floor Height (ft)	10			Assumed
Building Volume (ft3)	356,510			
Building Volume (CY)	13,200			
Debris Volume (CY)	3,300	*(rounded, estimated)*		Rounded, 1 CY building volume = 0.25 CY waste volume

Total Debris (CY)	3,410			
Effective Building Floor Area (KSF)	**37.0**		<-------	**ENTER VALUE INTO CALEEMOD**
Truck Size (CY)	10			
Total Trucks	340	*total trucks*		
Daily Trucks	10	*trucks/day*		
Total One-Way Trips	**680**	*total trips*	<-------	**ENTER VALUE INTO CALEEMOD**

1045 Olive Street Project
On-Road Soil/Material Haul Truck Regional Emissions

On-Road Truck Regional Running Emissions

Construction Phase	Source	Year	Daily One-Way Truck Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Running Emissions Factor (grams/mile) CO2e	Regional Emissions CO2e (metric tons/year)
Site Preparation	T7 Single Construction	2019	30	1.73	10	23.6	1,751.46	2
Grading/Excavation	T7 Single Construction	2019	500	22.86	10	21	1,751.46	420
Concrete Pour (1-day)	T7 Single Construction	2019	1215	1.00	23	25	1,751.46	53

On-Road Truck Idling Emissions

Construction Phase	Source	Year	Daily Number of Trucks	Haul Days per Year (days/year)	Work Hours per Day (hours/day)	Idling Time per Truck (minutes)	Idling Emissions Factor (grams/hour) CO2e	Regional Emissions CO2e (metric tons/year)
Site Preparation	T7 Single Construction	2019	30	1.73	10	15	6,555.76	0.1
Grading/Excavation	T7 Single Construction	2019	500	22.86	10	15	6,555.76	19
Concrete Pour (1-day)	T7 Single Construction	2019	1215	1.00	23	20	6,555.76	3

Total	**497**

1045 Olive Street Project
On-Road Truck Emission Factors (Aggregate Model Year, Aggregate Speeds)

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Years: 2017, 2018, 2019, 2020, 2021, 2022, 2023
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/hour for IDLEX, RESTL and DIURN

	1	2	3	4	5	22	23	24	25	26	27
						GREENHOUSE GASES					
Region	**CalYr**	**VehClass**	**MdlYr**	**Speed**	**Fuel**	**CO2_RUNEX**	**CO2_IDLEX**	**CH4_RUNEX**	**CH4_IDLEX**	**CO2e_RUNEX**	**CO2e_IDLEX**
Los Angeles County (SC)	2019	T7 single construction	Aggregated	Aggregated	All	1,751.30	6,553.65	0.0065	0.0842	1,751.46	6,555.76

Source: California Air Resources Board, EMFAC2014, http://www.arb.ca.gov/emfac/2014/. Accessed September 2017.

1045 Olive Street Project - Construction - Los Angeles-South Coast County, Annual

1045 Olive Street Project - Construction

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,246.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).
Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Construction Phase - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

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Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Trips and VMT - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" provided in this Appendix. Soil/material haul trucks and concrete pour trucks (1-day) calculated outside CalEEMod using EMFAC.
Demolition - Demo Debris: 3,410 cy (estimated equivalent to 37,000 sf building floor area)

Grading - Site Prep: 520 cy export; Grading: 80,000 cy export.

Construction Off-road Equipment Mitigation - Electric cranes and air compressors; Tier 4 equipment (>50 hp); Water/Stablizers on exposed and unpaved areas (61% PM control); Limit vehicle speeds to 15 mph on unpaved roads.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	626.00
tblConstructionPhase	NumDays	100.00	810.00
tblConstructionPhase	NumDays	100.00	705.00
tblConstructionPhase	NumDays	10.00	26.00
tblConstructionPhase	NumDays	2.00	105.00
tblConstructionPhase	NumDays	5.00	52.00
tblConstructionPhase	NumDays	1.00	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	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	0.96
tblGrading	AcresOfGrading	0.00	0.96
tblGrading	MaterialExported	0.00	80,000.00
tblGrading	MaterialExported	0.00	520.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,246.00
tblLandUse	LotAcreage	0.53	0.10

tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	8.02	0.10
tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00

tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblTripsAndVMT	HaulingTripNumber	168.00	680.00
tblTripsAndVMT	HaulingTripNumber	65.00	0.00
tblTripsAndVMT	HaulingTripNumber	10,000.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	174.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	38.00
tblTripsAndVMT	WorkerTripNumber	15.00	132.00
tblTripsAndVMT	WorkerTripNumber	793.00	350.00
tblTripsAndVMT	WorkerTripNumber	5.00	50.00
tblTripsAndVMT	WorkerTripNumber	793.00	738.00
tblTripsAndVMT	WorkerTripNumber	159.00	62.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4648	2.8671	4.0525	8.8900e-003	0.4892	0.1534	0.6426	0.1273	0.1419	0.2693	0.0000	803.0712	803.0712	0.1146	0.0000	805.9348
2020	1.2027	4.7049	7.1083	0.0199	1.3544	0.1796	1.5340	0.3617	0.1661	0.5278	0.0000	1,812.3536	1,812.3536	0.1483	0.0000	1,816.0617
2021	2.6120	7.1726	10.5208	0.0318	2.1437	0.2385	2.3822	0.5733	0.2216	0.7949	0.0000	2,907.0297	2,907.0297	0.2241	0.0000	2,912.6311
2022	1.6444	3.9603	5.3584	0.0179	1.1682	0.1062	1.2743	0.3132	0.0991	0.4123	0.0000	1,643.9388	1,643.9388	0.1194	0.0000	1,646.9243
Maximum	**2.6120**	**7.1726**	**10.5208**	**0.0318**	**2.1437**	**0.2385**	**2.3822**	**0.5733**	**0.2216**	**0.7949**	**0.0000**	**2,907.0297**	**2,907.0297**	**0.2241**	**0.0000**	**2,912.6311**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2576	0.7366	4.0985	8.8900e-003	0.4747	9.9600e-003	0.4847	0.1252	9.6100e-003	0.1348	0.0000	761.9778	761.9778	0.1028	0.0000	764.5484
2020	0.9538	2.2405	6.4802	0.0199	1.3544	0.0206	1.3750	0.3617	0.0194	0.3812	0.0000	1,675.7834	1,675.7834	0.1083	0.0000	1,678.4906
2021	2.2548	3.7203	9.3526	0.0318	2.1437	0.0257	2.1694	0.5733	0.0241	0.5975	0.0000	2,661.9472	2,661.9472	0.1618	0.0000	2,665.9912
2022	1.4770	2.3818	4.7019	0.0179	1.1682	0.0142	1.1824	0.3132	0.0134	0.3266	0.0000	1,505.1783	1,505.1783	0.0874	0.0000	1,507.3635
Maximum	**2.2548**	**3.7203**	**9.3526**	**0.0318**	**2.1437**	**0.0257**	**2.1694**	**0.5733**	**0.0241**	**0.5975**	**0.0000**	**2,661.9472**	**2,661.9472**	**0.1618**	**0.0000**	**2,665.9912**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**16.55**	**51.46**	**8.90**	**0.00**	**0.28**	**89.61**	**10.66**	**0.16**	**89.41**	**28.16**	**0.00**	**7.84**	**7.84**	**24.09**	**0.00**	**7.87**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2019**	**6-30-2019**	1.4913	0.4122

2	**7-1-2019**	**9-30-2019**	1.2085	0.3750
3	**10-1-2019**	**12-31-2019**	0.6117	0.1914
4	**1-1-2020**	**3-31-2020**	0.5493	0.1774
5	**4-1-2020**	**6-30-2020**	0.5376	0.1657
6	**7-1-2020**	**9-30-2020**	2.0914	1.2047
7	**10-1-2020**	**12-31-2020**	2.6906	1.6112
8	**1-1-2021**	**3-31-2021**	2.4167	1.4779
9	**4-1-2021**	**6-30-2021**	2.4082	1.4589
10	**7-1-2021**	**9-30-2021**	2.4347	1.4749
11	**10-1-2021**	**12-31-2021**	2.4705	1.5107
12	**1-1-2022**	**3-31-2022**	1.7962	1.2596
13	**4-1-2022**	**6-30-2022**	1.9515	1.2901
14	**7-1-2022**	**9-30-2022**	1.8133	1.2648
		Highest	2.6906	1.6112

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	4/1/2019	4/30/2019	6	26	
2	Site Preparation	Site Preparation	4/1/2019	4/30/2019	6	26	
3	Grading	Grading	4/1/2019	7/31/2019	6	105	
4	Foundations/Concrete Pour	Building Construction	6/1/2019	12/31/2021	6	810	
5	Drainage/Utilities/Trenching	Trenching	7/1/2019	9/30/2019	6	79	
6	Building Construction	Building Construction	7/1/2020	9/30/2022	6	705	
7	Architectural Coating	Architectural Coating	10/1/2020	9/30/2022	6	626	
8	Paving	Paving	5/1/2022	6/30/2022	6	52	

Acres of Grading (Site Preparation Phase): 0.96

Acres of Grading (Grading Phase): 0.96

Acres of Paving: 0.2

Residential Indoor: 1,496,973; Residential Outdoor: 498,991; Non-Residential Indoor: 110,184; Non-Residential Outdoor: 36,728; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	10.00	78	0.48
Demolition	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Sweepers/Scrubbers	1	6.00	64	0.46
Demolition	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Site Preparation	Concrete/Industrial Saws	1	10.00	81	0.73
Site Preparation	Excavators	1	10.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Bore/Drill Rigs	1	10.00	221	0.50
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Excavators	2	10.00	158	0.38
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Sweepers/Scrubbers	1	6.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Forklifts	2	10.00	89	0.20
Building Construction	Sweepers/Scrubbers	1	6.00	64	0.46
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	1	10.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Signal Boards	1	10.00	6	0.82
Paving	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Architectural Coating	Air Compressors	1	10.00	78	0.48
Architectural Coating	Forklifts	1	10.00	89	0.20

Foundations/Concrete Pour	Cranes	1	6.00	231	0.29
Foundations/Concrete Pour	Forklifts	1	10.00	89	0.20
Foundations/Concrete Pour	Sweepers/Scrubbers	1	6.00	64	0.46
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	10.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	10.00	97	0.37

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	12.00	6.00	680.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	132.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	738.00	174.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	62.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	4	350.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	2	50.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0182	0.0000	0.0182	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1602	0.1570	2.4000e-004		0.0110	0.0110		0.0107	0.0107	0.0000	21.0285	21.0285	3.2200e-003	0.0000	21.1090
Total	**0.0199**	**0.1602**	**0.1570**	**2.4000e-004**	**0.0182**	**0.0110**	**0.0292**	**2.7600e-003**	**0.0107**	**0.0134**	**0.0000**	**21.0285**	**21.0285**	**3.2200e-003**	**0.0000**	**21.1090**

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	3.2300e-003	0.1076	0.0229	2.7000e-004	5.8400e-003	3.9000e-004	6.2300e-003	1.6000e-003	3.7000e-004	1.9700e-003	0.0000	26.4753	26.4753	1.8700e-003	0.0000	26.5220
Vendor	3.3000e-004	9.2100e-003	2.5200e-003	2.0000e-005	4.9000e-004	6.0000e-005	5.5000e-004	1.4000e-004	6.0000e-005	2.0000e-004	0.0000	1.9505	1.9505	1.3000e-004	0.0000	1.9538
Worker	7.8000e-004	6.5000e-004	7.0800e-003	2.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.7000e-004	0.0000	1.6432	1.6432	6.0000e-005	0.0000	1.6447
Total	**4.3400e-003**	**0.1175**	**0.0325**	**3.1000e-004**	**8.0400e-003**	**4.7000e-004**	**8.5000e-003**	**2.1900e-003**	**4.4000e-004**	**2.6400e-003**	**0.0000**	**30.0690**	**30.0690**	**2.0600e-003**	**0.0000**	**30.1204**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.1000e-003	0.0000	7.1000e-003	1.0800e-003	0.0000	1.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2400e-003	0.0210	0.1195	2.4000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	15.4965	15.4965	2.7500e-003	0.0000	15.5653
Total	**2.2400e-003**	**0.0210**	**0.1195**	**2.4000e-004**	**7.1000e-003**	**2.6000e-004**	**7.3600e-003**	**1.0800e-003**	**2.6000e-004**	**1.3400e-003**	**0.0000**	**15.4965**	**15.4965**	**2.7500e-003**	**0.0000**	**15.5653**

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	3.2300e-003	0.1076	0.0229	2.7000e-004	5.8400e-003	3.9000e-004	6.2300e-003	1.6000e-003	3.7000e-004	1.9700e-003	0.0000	26.4753	26.4753	1.8700e-003	0.0000	26.5220
Vendor	3.3000e-004	9.2100e-003	2.5200e-003	2.0000e-005	4.9000e-004	6.0000e-005	5.5000e-004	1.4000e-004	6.0000e-005	2.0000e-004	0.0000	1.9505	1.9505	1.3000e-004	0.0000	1.9538
Worker	7.8000e-004	6.5000e-004	7.0800e-003	2.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.7000e-004	0.0000	1.6432	1.6432	6.0000e-005	0.0000	1.6447
Total	**4.3400e-003**	**0.1175**	**0.0325**	**3.1000e-004**	**8.0400e-003**	**4.7000e-004**	**8.5000e-003**	**2.1900e-003**	**4.4000e-004**	**2.6400e-003**	**0.0000**	**30.0690**	**30.0690**	**2.0600e-003**	**0.0000**	**30.1204**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4000e-004	0.0000	5.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1019	0.1132	1.9000e-004		5.8300e-003	5.8300e-003		5.6600e-003	5.6600e-003	0.0000	16.2718	16.2718	3.0000e-003	0.0000	16.3468
Total	**0.0117**	**0.1019**	**0.1132**	**1.9000e-004**	**5.4000e-004**	**5.8300e-003**	**6.3700e-003**	**6.0000e-005**	**5.6600e-003**	**5.7200e-003**	**0.0000**	**16.2718**	**16.2718**	**3.0000e-003**	**0.0000**	**16.3468**

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	2.4700e-003	2.0600e-003	0.0224	6.0000e-005	5.4100e-003	5.0000e-005	5.4600e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2036	5.2036	1.8000e-004	0.0000	5.2081
Total	**2.4700e-003**	**2.0600e-003**	**0.0224**	**6.0000e-005**	**5.4100e-003**	**5.0000e-005**	**5.4600e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2036**	**5.2036**	**1.8000e-004**	**0.0000**	**5.2081**

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					2.1000e-004	0.0000	2.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	8.8800e-003	0.1264	1.9000e-004		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	16.2718	16.2718	3.0000e-003	0.0000	16.3468
Total	**2.0500e-003**	**8.8800e-003**	**0.1264**	**1.9000e-004**	**2.1000e-004**	**2.7000e-004**	**4.8000e-004**	**2.0000e-005**	**2.7000e-004**	**2.9000e-004**	**0.0000**	**16.2718**	**16.2718**	**3.0000e-003**	**0.0000**	**16.3468**

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	2.4700e-003	2.0600e-003	0.0224	6.0000e-005	5.4100e-003	5.0000e-005	5.4600e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2036	5.2036	1.8000e-004	0.0000	5.2081
Total	**2.4700e-003**	**2.0600e-003**	**0.0224**	**6.0000e-005**	**5.4100e-003**	**5.0000e-005**	**5.4600e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2036**	**5.2036**	**1.8000e-004**	**0.0000**	**5.2081**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0300e-003	0.0000	5.0300e-003	7.4000e-004	0.0000	7.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0944	0.9986	0.9448	1.8000e-003		0.0522	0.0522		0.0481	0.0481	0.0000	161.6695	161.6695	0.0512	0.0000	162.9483
Total	**0.0944**	**0.9986**	**0.9448**	**1.8000e-003**	**5.0300e-003**	**0.0522**	**0.0573**	**7.4000e-004**	**0.0481**	**0.0488**	**0.0000**	**161.6695**	**161.6695**	**0.0512**	**0.0000**	**162.9483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3300e-003	0.0372	0.0102	8.0000e-005	1.9800e-003	2.3000e-004	2.2200e-003	5.7000e-004	2.2000e-004	8.0000e-004	0.0000	7.8770	7.8770	5.3000e-004	0.0000	7.8902
Worker	0.0347	0.0289	0.3146	8.1000e-004	0.0759	6.7000e-004	0.0766	0.0202	6.2000e-004	0.0208	0.0000	72.9977	72.9977	2.5100e-003	0.0000	73.0604
Total	**0.0360**	**0.0661**	**0.3248**	**8.9000e-004**	**0.0779**	**9.0000e-004**	**0.0788**	**0.0207**	**8.4000e-004**	**0.0216**	**0.0000**	**80.8747**	**80.8747**	**3.0400e-003**	**0.0000**	**80.9506**

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					1.9600e-003	0.0000	1.9600e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0235	0.1470	1.1787	1.8000e-003		2.9600e-003	2.9600e-003		2.9600e-003	2.9600e-003	0.0000	161.6693	161.6693	0.0512	0.0000	162.9481
Total	**0.0235**	**0.1470**	**1.1787**	**1.8000e-003**	**1.9600e-003**	**2.9600e-003**	**4.9200e-003**	**2.9000e-004**	**2.9600e-003**	**3.2500e-003**	**0.0000**	**161.6693**	**161.6693**	**0.0512**	**0.0000**	**162.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3300e-003	0.0372	0.0102	8.0000e-005	1.9800e-003	2.3000e-004	2.2200e-003	5.7000e-004	2.2000e-004	8.0000e-004	0.0000	7.8770	7.8770	5.3000e-004	0.0000	7.8902
Worker	0.0347	0.0289	0.3146	8.1000e-004	0.0759	6.7000e-004	0.0766	0.0202	6.2000e-004	0.0208	0.0000	72.9977	72.9977	2.5100e-003	0.0000	73.0604
Total	**0.0360**	**0.0661**	**0.3248**	**8.9000e-004**	**0.0779**	**9.0000e-004**	**0.0788**	**0.0207**	**8.4000e-004**	**0.0216**	**0.0000**	**80.8747**	**80.8747**	**3.0400e-003**	**0.0000**	**80.9506**

3.5 Foundations/Concrete Pour - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0991	1.0130	0.6944	1.1000e-003		0.0618	0.0618		0.0568	0.0568	0.0000	98.8387	98.8387	0.0313	0.0000	99.6205
Total	**0.0991**	**1.0130**	**0.6944**	**1.1000e-003**		**0.0618**	**0.0618**		**0.0568**	**0.0568**	**0.0000**	**98.8387**	**98.8387**	**0.0313**	**0.0000**	**99.6205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1604	0.1337	1.4539	3.7400e-003	0.3509	3.0900e-003	0.3540	0.0932	2.8400e-003	0.0961	0.0000	337.3377	337.3377	0.0116	0.0000	337.6277
Total	**0.1604**	**0.1337**	**1.4539**	**3.7400e-003**	**0.3509**	**3.0900e-003**	**0.3540**	**0.0932**	**2.8400e-003**	**0.0961**	**0.0000**	**337.3377**	**337.3377**	**0.0116**	**0.0000**	**337.6277**

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	0.0108	0.1258	0.5326	1.1000e-003		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003	0.0000	63.2776	63.2776	0.0200	0.0000	63.7781
Total	**0.0108**	**0.1258**	**0.5326**	**1.1000e-003**		**1.1500e-003**	**1.1500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**63.2776**	**63.2776**	**0.0200**	**0.0000**	**63.7781**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1604	0.1337	1.4539	3.7400e-003	0.3509	3.0900e-003	0.3540	0.0932	2.8400e-003	0.0961	0.0000	337.3377	337.3377	0.0116	0.0000	337.6277
Total	**0.1604**	**0.1337**	**1.4539**	**3.7400e-003**	**0.3509**	**3.0900e-003**	**0.3540**	**0.0932**	**2.8400e-003**	**0.0961**	**0.0000**	**337.3377**	**337.3377**	**0.0116**	**0.0000**	**337.6277**

3.5 Foundations/Concrete Pour - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1546	1.5767	1.1621	1.8900e-003		0.0933	0.0933		0.0858	0.0858	0.0000	165.8893	165.8893	0.0537	0.0000	167.2306
Total	**0.1546**	**1.5767**	**1.1621**	**1.8900e-003**		**0.0933**	**0.0933**		**0.0858**	**0.0858**	**0.0000**	**165.8893**	**165.8893**	**0.0537**	**0.0000**	**167.2306**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2537	0.2045	2.2619	6.2100e-003	0.6021	5.1300e-003	0.6073	0.1599	4.7300e-003	0.1647	0.0000	561.2321	561.2321	0.0177	0.0000	561.6743
Total	**0.2537**	**0.2045**	**2.2619**	**6.2100e-003**	**0.6021**	**5.1300e-003**	**0.6073**	**0.1599**	**4.7300e-003**	**0.1647**	**0.0000**	**561.2321**	**561.2321**	**0.0177**	**0.0000**	**561.6743**

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	0.0185	0.2158	0.9138	1.8900e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	106.1987	106.1987	0.0344	0.0000	107.0574
Total	**0.0185**	**0.2158**	**0.9138**	**1.8900e-003**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**106.1987**	**106.1987**	**0.0344**	**0.0000**	**107.0574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2537	0.2045	2.2619	6.2100e-003	0.6021	5.1300e-003	0.6073	0.1599	4.7300e-003	0.1647	0.0000	561.2321	561.2321	0.0177	0.0000	561.6743
Total	**0.2537**	**0.2045**	**2.2619**	**6.2100e-003**	**0.6021**	**5.1300e-003**	**0.6073**	**0.1599**	**4.7300e-003**	**0.1647**	**0.0000**	**561.2321**	**561.2321**	**0.0177**	**0.0000**	**561.6743**

3.5 Foundations/Concrete Pour - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1372	1.4122	1.1324	1.8800e-003		0.0791	0.0791		0.0728	0.0728	0.0000	165.3789	165.3789	0.0535	0.0000	166.7161
Total	**0.1372**	**1.4122**	**1.1324**	**1.8800e-003**		**0.0791**	**0.0791**		**0.0728**	**0.0728**	**0.0000**	**165.3789**	**165.3789**	**0.0535**	**0.0000**	**166.7161**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2357	0.1835	2.0714	5.9900e-003	0.6002	4.9500e-003	0.6052	0.1594	4.5600e-003	0.1640	0.0000	541.6793	541.6793	0.0159	0.0000	542.0778
Total	**0.2357**	**0.1835**	**2.0714**	**5.9900e-003**	**0.6002**	**4.9500e-003**	**0.6052**	**0.1594**	**4.5600e-003**	**0.1640**	**0.0000**	**541.6793**	**541.6793**	**0.0159**	**0.0000**	**542.0778**

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	0.0184	0.2152	0.9109	1.8800e-003		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	105.8838	105.8838	0.0342	0.0000	106.7399
Total	**0.0184**	**0.2152**	**0.9109**	**1.8800e-003**		**1.9700e-003**	**1.9700e-003**		**1.9700e-003**	**1.9700e-003**	**0.0000**	**105.8838**	**105.8838**	**0.0342**	**0.0000**	**106.7399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2357	0.1835	2.0714	5.9900e-003	0.6002	4.9500e-003	0.6052	0.1594	4.5600e-003	0.1640	0.0000	541.6793	541.6793	0.0159	0.0000	542.0778
Total	**0.2357**	**0.1835**	**2.0714**	**5.9900e-003**	**0.6002**	**4.9500e-003**	**0.6052**	**0.1594**	**4.5600e-003**	**0.1640**	**0.0000**	**541.6793**	**541.6793**	**0.0159**	**0.0000**	**542.0778**

3.6 Drainage/Utilities/Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2378	0.2123	2.8000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	25.0473	25.0473	7.9200e-003	0.0000	25.2454
Total	**0.0256**	**0.2378**	**0.2123**	**2.8000e-004**		**0.0176**	**0.0176**		**0.0162**	**0.0162**	**0.0000**	**25.0473**	**25.0473**	**7.9200e-003**	**0.0000**	**25.2454**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0280	7.6600e-003	6.0000e-005	1.4900e-003	1.8000e-004	1.6700e-003	4.3000e-004	1.7000e-004	6.0000e-004	0.0000	5.9265	5.9265	4.0000e-004	0.0000	5.9364
Worker	9.8900e-003	8.2500e-003	0.0897	2.3000e-004	0.0216	1.9000e-004	0.0218	5.7500e-003	1.8000e-004	5.9200e-003	0.0000	20.8038	20.8038	7.2000e-004	0.0000	20.8217
Total	**0.0109**	**0.0362**	**0.0973**	**2.9000e-004**	**0.0231**	**3.7000e-004**	**0.0235**	**6.1800e-003**	**3.5000e-004**	**6.5200e-003**	**0.0000**	**26.7303**	**26.7303**	**1.1200e-003**	**0.0000**	**26.7581**

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	4.9500e-003	0.0784	0.2105	2.8000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.0473	25.0473	7.9200e-003	0.0000	25.2454
Total	**4.9500e-003**	**0.0784**	**0.2105**	**2.8000e-004**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**25.0473**	**25.0473**	**7.9200e-003**	**0.0000**	**25.2454**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0280	7.6600e-003	6.0000e-005	1.4900e-003	1.8000e-004	1.6700e-003	4.3000e-004	1.7000e-004	6.0000e-004	0.0000	5.9265	5.9265	4.0000e-004	0.0000	5.9364
Worker	9.8900e-003	8.2500e-003	0.0897	2.3000e-004	0.0216	1.9000e-004	0.0218	5.7500e-003	1.8000e-004	5.9200e-003	0.0000	20.8038	20.8038	7.2000e-004	0.0000	20.8217
Total	**0.0109**	**0.0362**	**0.0973**	**2.9000e-004**	**0.0231**	**3.7000e-004**	**0.0235**	**6.1800e-003**	**3.5000e-004**	**6.5200e-003**	**0.0000**	**26.7303**	**26.7303**	**1.1200e-003**	**0.0000**	**26.7581**

3.7 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0982	1.0330	0.6015	1.1400e-003		0.0565	0.0565		0.0520	0.0520	0.0000	99.8254	99.8254	0.0323	0.0000	100.6325
Total	**0.0982**	**1.0330**	**0.6015**	**1.1400e-003**		**0.0565**	**0.0565**		**0.0520**	**0.0520**	**0.0000**	**99.8254**	**99.8254**	**0.0323**	**0.0000**	**100.6325**

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	0.0499	1.4896	0.4032	3.5300e-003	0.0866	6.9300e-003	0.0935	0.0250	6.6300e-003	0.0316	0.0000	341.4867	341.4867	0.0217	0.0000	342.0291
Worker	0.2691	0.2170	2.3999	6.5900e-003	0.6389	5.4500e-003	0.6443	0.1697	5.0200e-003	0.1747	0.0000	595.4678	595.4678	0.0188	0.0000	595.9369
Total	**0.3190**	**1.7066**	**2.8031**	**0.0101**	**0.7255**	**0.0124**	**0.7378**	**0.1947**	**0.0117**	**0.2063**	**0.0000**	**936.9545**	**936.9545**	**0.0405**	**0.0000**	**937.9661**

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	7.4100e-003	0.1004	0.3432	1.1400e-003		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	39.7546	39.7546	0.0129	0.0000	40.0761
Total	**7.4100e-003**	**0.1004**	**0.3432**	**1.1400e-003**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**39.7546**	**39.7546**	**0.0129**	**0.0000**	**40.0761**

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	0.0499	1.4896	0.4032	3.5300e-003	0.0866	6.9300e-003	0.0935	0.0250	6.6300e-003	0.0316	0.0000	341.4867	341.4867	0.0217	0.0000	342.0291
Worker	0.2691	0.2170	2.3999	6.5900e-003	0.6389	5.4500e-003	0.6443	0.1697	5.0200e-003	0.1747	0.0000	595.4678	595.4678	0.0188	0.0000	595.9369
Total	**0.3190**	**1.7066**	**2.8031**	**0.0101**	**0.7255**	**0.0124**	**0.7378**	**0.1947**	**0.0117**	**0.2063**	**0.0000**	**936.9545**	**936.9545**	**0.0405**	**0.0000**	**937.9661**

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1744	1.8412	1.1514	2.2500e-003		0.0967	0.0967		0.0890	0.0890	0.0000	197.7445	197.7445	0.0640	0.0000	199.3433
Total	**0.1744**	**1.8412**	**1.1514**	**2.2500e-003**		**0.0967**	**0.0967**		**0.0890**	**0.0890**	**0.0000**	**197.7445**	**197.7445**	**0.0640**	**0.0000**	**199.3433**

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	0.0846	2.6874	0.7286	6.9200e-003	0.1715	5.4800e-003	0.1770	0.0495	5.2400e-003	0.0548	0.0000	671.2348	671.2348	0.0412	0.0000	672.2641
Worker	0.4970	0.3869	4.3676	0.0126	1.2656	0.0104	1.2761	0.3362	9.6100e-003	0.3458	0.0000	1,142.1695	1,142.1695	0.0336	0.0000	1,143.0098
Total	**0.5815**	**3.0743**	**5.0962**	**0.0196**	**1.4372**	**0.0159**	**1.4531**	**0.3857**	**0.0149**	**0.4005**	**0.0000**	**1,813.4043**	**1,813.4043**	**0.0748**	**0.0000**	**1,815.2739**

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	0.0147	0.1989	0.6800	2.2500e-003		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	78.7544	78.7544	0.0255	0.0000	79.3912
Total	**0.0147**	**0.1989**	**0.6800**	**2.2500e-003**		**1.4700e-003**	**1.4700e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**78.7544**	**78.7544**	**0.0255**	**0.0000**	**79.3912**

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	0.0846	2.6874	0.7286	6.9200e-003	0.1715	5.4800e-003	0.1770	0.0495	5.2400e-003	0.0548	0.0000	671.2348	671.2348	0.0412	0.0000	672.2641
Worker	0.4970	0.3869	4.3676	0.0126	1.2656	0.0104	1.2761	0.3362	9.6100e-003	0.3458	0.0000	1,142.1695	1,142.1695	0.0336	0.0000	1,143.0098
Total	**0.5815**	**3.0743**	**5.0962**	**0.0196**	**1.4372**	**0.0159**	**1.4531**	**0.3857**	**0.0149**	**0.4005**	**0.0000**	**1,813.4043**	**1,813.4043**	**0.0748**	**0.0000**	**1,815.2739**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1157	1.2011	0.8378	1.6800e-003		0.0615	0.0615		0.0566	0.0566	0.0000	147.8491	147.8491	0.0478	0.0000	149.0445
Total	**0.1157**	**1.2011**	**0.8378**	**1.6800e-003**		**0.0615**	**0.0615**		**0.0566**	**0.0566**	**0.0000**	**147.8491**	**147.8491**	**0.0478**	**0.0000**	**149.0445**

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	0.0593	1.9088	0.5154	5.1300e-003	0.1282	3.5800e-003	0.1318	0.0370	3.4300e-003	0.0404	0.0000	497.4101	497.4101	0.0297	0.0000	498.1529
Worker	0.3484	0.2613	3.0086	9.1100e-003	0.9462	7.5600e-003	0.9537	0.2513	6.9600e-003	0.2583	0.0000	823.8745	823.8745	0.0227	0.0000	824.4417
Total	**0.4077**	**2.1701**	**3.5240**	**0.0142**	**1.0744**	**0.0111**	**1.0856**	**0.2883**	**0.0104**	**0.2987**	**0.0000**	**1,321.2846**	**1,321.2846**	**0.0524**	**0.0000**	**1,322.5946**

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	0.0110	0.1487	0.5083	1.6800e-003		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	58.8771	58.8771	0.0190	0.0000	59.3532
Total	**0.0110**	**0.1487**	**0.5083**	**1.6800e-003**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**58.8771**	**58.8771**	**0.0190**	**0.0000**	**59.3532**

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	0.0593	1.9088	0.5154	5.1300e-003	0.1282	3.5800e-003	0.1318	0.0370	3.4300e-003	0.0404	0.0000	497.4101	497.4101	0.0297	0.0000	498.1529
Worker	0.3484	0.2613	3.0086	9.1100e-003	0.9462	7.5600e-003	0.9537	0.2513	6.9600e-003	0.2583	0.0000	823.8745	823.8745	0.0227	0.0000	824.4417
Total	**0.4077**	**2.1701**	**3.5240**	**0.0142**	**1.0744**	**0.0111**	**1.0856**	**0.2883**	**0.0104**	**0.2987**	**0.0000**	**1,321.2846**	**1,321.2846**	**0.0524**	**0.0000**	**1,322.5946**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0231	0.1749	0.1788	2.7000e-004		0.0121	0.0121		0.0117	0.0117	0.0000	23.4396	23.4396	3.4500e-003	0.0000	23.5257
Total	**0.3661**	**0.1749**	**0.1788**	**2.7000e-004**		**0.0121**	**0.0121**		**0.0117**	**0.0117**	**0.0000**	**23.4396**	**23.4396**	**3.4500e-003**	**0.0000**	**23.5257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	9.1200e-003	0.1008	2.8000e-004	0.0268	2.3000e-004	0.0271	7.1300e-003	2.1000e-004	7.3400e-003	0.0000	25.0129	25.0129	7.9000e-004	0.0000	25.0326
Total	**0.0113**	**9.1200e-003**	**0.1008**	**2.8000e-004**	**0.0268**	**2.3000e-004**	**0.0271**	**7.1300e-003**	**2.1000e-004**	**7.3400e-003**	**0.0000**	**25.0129**	**25.0129**	**7.9000e-004**	**0.0000**	**25.0326**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	4.0300e-003	0.0574	2.7000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	6.6306	6.6306	2.1400e-003	0.0000	6.6842
Total	**0.3440**	**4.0300e-003**	**0.0574**	**2.7000e-004**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**6.6306**	**6.6306**	**2.1400e-003**	**0.0000**	**6.6842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	9.1200e-003	0.1008	2.8000e-004	0.0268	2.3000e-004	0.0271	7.1300e-003	2.1000e-004	7.3400e-003	0.0000	25.0129	25.0129	7.9000e-004	0.0000	25.0326
Total	**0.0113**	**9.1200e-003**	**0.1008**	**2.8000e-004**	**0.0268**	**2.3000e-004**	**0.0271**	**7.1300e-003**	**2.1000e-004**	**7.3400e-003**	**0.0000**	**25.0129**	**25.0129**	**7.9000e-004**	**0.0000**	**25.0326**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0824	0.6289	0.7025	1.0700e-003		0.0409	0.0409		0.0396	0.0396	0.0000	92.8681	92.8681	0.0131	0.0000	93.1948
Total	**1.4415**	**0.6289**	**0.7025**	**1.0700e-003**		**0.0409**	**0.0409**		**0.0396**	**0.0396**	**0.0000**	**92.8681**	**92.8681**	**0.0131**	**0.0000**	**93.1948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0325	0.3669	1.0600e-003	0.1063	8.8000e-004	0.1072	0.0282	8.1000e-004	0.0291	0.0000	95.9546	95.9546	2.8200e-003	0.0000	96.0252
Total	**0.0418**	**0.0325**	**0.3669**	**1.0600e-003**	**0.1063**	**8.8000e-004**	**0.1072**	**0.0282**	**8.1000e-004**	**0.0291**	**0.0000**	**95.9546**	**95.9546**	**2.8200e-003**	**0.0000**	**96.0252**

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	1.3591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0160	0.2272	1.0700e-003		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	26.2707	26.2707	8.5000e-003	0.0000	26.4831
Total	**1.3627**	**0.0160**	**0.2272**	**1.0700e-003**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**26.2707**	**26.2707**	**8.5000e-003**	**0.0000**	**26.4831**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0325	0.3669	1.0600e-003	0.1063	8.8000e-004	0.1072	0.0282	8.1000e-004	0.0291	0.0000	95.9546	95.9546	2.8200e-003	0.0000	96.0252
Total	**0.0418**	**0.0325**	**0.3669**	**1.0600e-003**	**0.1063**	**8.8000e-004**	**0.1072**	**0.0282**	**8.1000e-004**	**0.0291**	**0.0000**	**95.9546**	**95.9546**	**2.8200e-003**	**0.0000**	**96.0252**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0565	0.4289	0.5224	8.0000e-004		0.0262	0.0262		0.0253	0.0253	0.0000	69.4286	69.4286	9.5900e-003	0.0000	69.6684
Total	**1.0725**	**0.4289**	**0.5224**	**8.0000e-004**		**0.0262**	**0.0262**		**0.0253**	**0.0253**	**0.0000**	**69.4286**	**69.4286**	**9.5900e-003**	**0.0000**	**69.6684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0293	0.0220	0.2528	7.7000e-004	0.0795	6.3000e-004	0.0801	0.0211	5.8000e-004	0.0217	0.0000	69.2144	69.2144	1.9100e-003	0.0000	69.2620
Total	**0.0293**	**0.0220**	**0.2528**	**7.7000e-004**	**0.0795**	**6.3000e-004**	**0.0801**	**0.0211**	**5.8000e-004**	**0.0217**	**0.0000**	**69.2144**	**69.2144**	**1.9100e-003**	**0.0000**	**69.2620**

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	1.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7500e-003	0.0119	0.1699	8.0000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	19.6401	19.6401	6.3500e-003	0.0000	19.7989
Total	**1.0188**	**0.0119**	**0.1699**	**8.0000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**19.6401**	**19.6401**	**6.3500e-003**	**0.0000**	**19.7989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0293	0.0220	0.2528	7.7000e-004	0.0795	6.3000e-004	0.0801	0.0211	5.8000e-004	0.0217	0.0000	69.2144	69.2144	1.9100e-003	0.0000	69.2620
Total	**0.0293**	**0.0220**	**0.2528**	**7.7000e-004**	**0.0795**	**6.3000e-004**	**0.0801**	**0.0211**	**5.8000e-004**	**0.0217**	**0.0000**	**69.2144**	**69.2144**	**1.9100e-003**	**0.0000**	**69.2620**

3.9 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0139	0.1344	0.1762	2.8000e-004		6.6200e-003	6.6200e-003		6.1300e-003	6.1300e-003	0.0000	23.7581	23.7581	7.3600e-003	0.0000	23.9422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0139**	**0.1344**	**0.1762**	**2.8000e-004**		**6.6200e-003**	**6.6200e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**23.7581**	**23.7581**	**7.3600e-003**	**0.0000**	**23.9422**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2500e-003	3.9300e-003	0.0453	1.4000e-004	0.0143	1.1000e-004	0.0144	3.7800e-003	1.0000e-004	3.8900e-003	0.0000	12.4040	12.4040	3.4000e-004	0.0000	12.4126
Total	**5.2500e-003**	**3.9300e-003**	**0.0453**	**1.4000e-004**	**0.0143**	**1.1000e-004**	**0.0144**	**3.7800e-003**	**1.0000e-004**	**3.8900e-003**	**0.0000**	**12.4040**	**12.4040**	**3.4000e-004**	**0.0000**	**12.4126**

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	4.9800e-003	0.0252	0.2017	2.8000e-004		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	23.7581	23.7581	7.3600e-003	0.0000	23.9422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9800e-003**	**0.0252**	**0.2017**	**2.8000e-004**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**23.7581**	**23.7581**	**7.3600e-003**	**0.0000**	**23.9422**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2500e-003	3.9300e-003	0.0453	1.4000e-004	0.0143	1.1000e-004	0.0144	3.7800e-003	1.0000e-004	3.8900e-003	0.0000	12.4040	12.4040	3.4000e-004	0.0000	12.4126
Total	**5.2500e-003**	**3.9300e-003**	**0.0453**	**1.4000e-004**	**0.0143**	**1.1000e-004**	**0.0144**	**3.7800e-003**	**1.0000e-004**	**3.8900e-003**	**0.0000**	**12.4040**	**12.4040**	**3.4000e-004**	**0.0000**	**12.4126**

B-2 Project Operational Emissions

1045 Olive Project
Environmental Leadership Development Project
Greenhouse Gas Assessment

Baseline Estimated Annual GHG Emissions

Baseline Condition (MTCO2e/year)							
Electricity	Natural Gas	Mobile	Solid Waste	Water	Area	CO2 Seq.	Subtotal
80	1	352	5	30	-	-	**468**

Project Estimated Annual GHG Emissions

Year	Project Construction and Operation (MTCO2e/year)									GHG Offsets	Net Change from Baseline	Exceeds Baseline?
	Construction	Electricity	Natural Gas	Mobile	Solid Waste	Water	Area	CO2 Seq.	Subtotal			
Construction Yr 1	1,262	-	-	-	-	-	-	-	**1,262**	1,262	-	NO
Construction Yr 2	1,678	-	-	-	-	-	-	-	**1,678**	1,678	-	NO
Construction Yr 3	2,666	-	-	-	-	-	-	-	**2,666**	2,666	-	NO
Construction Yr 4	1,507	781	243	2,895	94	106	14	-	**5,640**	5,172	-	NO
2023	-	1,875	582	6,716	226	254	33	(5)	**9,681**	9,213	-	NO
2024	-	1,680	582	6,546	226	234	33	(5)	**9,296**	8,828	-	NO
2025	-	1,680	582	6,346	226	234	33	(5)	**9,096**	8,628	-	NO
2026	-	1,680	582	6,178	226	234	33	(5)	**8,928**	8,460	-	NO
2027	-	1,539	582	6,029	226	218	33	(5)	**8,622**	8,154	-	NO
2028	-	1,539	582	5,899	226	218	33	(5)	**8,492**	8,024	-	NO
2029	-	1,539	582	5,785	226	218	33	(5)	**8,378**	7,910	-	NO
2030	-	1,401	582	5,686	226	204	33	(5)	**8,127**	7,659	-	NO
2031	-	1,401	582	5,604	226	204	33	(5)	**8,045**	7,577	-	NO
2032	-	1,401	582	5,529	226	204	33	(5)	**7,970**	7,502	-	NO
2033	-	1,401	582	5,463	226	204	33	(5)	**7,904**	7,436	-	NO
2034	-	1,401	582	5,408	226	204	33	(5)	**7,849**	7,381	-	NO
2035	-	1,401	582	5,363	226	204	33	(5)	**7,804**	7,336	-	NO
2036	-	1,401	582	5,330	226	204	33	(5)	**7,771**	7,303	-	NO
2037	-	1,401	582	5,302	226	204	33	(5)	**7,743**	7,275	-	NO
2038	-	1,401	582	5,281	226	204	33	(5)	**7,722**	7,254	-	NO
2039	-	1,401	582	5,266	226	204	33	(5)	**7,707**	7,239	-	NO
2040	-	1,401	582	5,255	226	204	33	(5)	**7,696**	7,228	-	NO
2041	-	1,401	582	5,247	226	204	33	(5)	**7,688**	7,220	-	NO
2042	-	1,401	582	5,243	226	204	33	(5)	**7,684**	7,216	-	NO
2043	-	1,401	582	5,242	226	204	33	-	**7,688**	7,220	-	NO
2044	-	1,401	582	5,242	226	204	33	-	**7,688**	7,220	-	NO
2045	-	1,401	582	5,244	226	204	33	-	**7,690**	7,222	-	NO
2046	-	1,401	582	5,249	226	204	33	-	**7,695**	7,227	-	NO
2047	-	1,401	582	5,254	226	204	33	-	**7,700**	7,232	-	NO
2048	-	1,401	582	5,261	226	204	33	-	**7,707**	7,239	-	NO
2049	-	1,401	582	5,269	226	204	33	-	**7,715**	7,247	-	NO
2050	-	1,401	582	5,279	226	204	33	-	**7,725**	7,257	-	NO
2051	-	1,401	582	5,279	226	204	33	-	**7,725**	7,257	-	NO
2052	-	1,401	582	5,279	226	204	33	-	**7,725**	7,257	-	NO

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Year	CH4	N2O	CO2e
	25	*298*	
2017	2.60E-08	-	4.62E-04
2018	2.39E-08	-	4.52E-04
2021	1.90E-08	-	4.18E-04
2022	1.78E-08	-	4.06E-04
2023	1.66E-08	-	3.93E-04
2024	1.58E-08	-	3.83E-04
2025	1.50E-08	-	3.71E-04
2026	1.42E-08	-	3.61E-04
2027	1.36E-08	-	3.52E-04
2028	1.31E-08	-	3.45E-04
2029	1.26E-08	-	3.38E-04
2030	1.22E-08	-	3.32E-04
2031	1.18E-08	-	3.28E-04
2032	1.15E-08	-	3.23E-04
2033	1.12E-08	-	3.19E-04
2034	1.10E-08	-	3.16E-04
2035	1.08E-08	-	3.14E-04
2036	1.06E-08	-	3.12E-04
2037	1.04E-08	-	3.10E-04
2038	1.03E-08	-	3.09E-04
2039	1.02E-08	-	3.08E-04
2040	1.01E-08	-	3.07E-04
2041	1.00E-08	-	3.07E-04
2042	9.94E-09	-	3.07E-04
2043	9.89E-09	-	3.06E-04
2044	9.82E-09	-	3.07E-04
2045	9.76E-09	-	3.07E-04
2046	9.65E-09	-	3.07E-04
2047	9.61E-09	-	3.07E-04
2048	9.59E-09	-	3.08E-04
2049	9.56E-09	-	3.08E-04
2050	9.53E-09	-	3.09E-04
2051	9.53E-09	-	3.09E-04
2052	9.53E-09	-	3.09E-04

Source: EMFAC2014, South Coast Air Basin (Los Angeles County), "Emissions" (or "Burden") mode.

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

			GHG Emission Factors (metric tons/year)			
Scenario	**Year**	**VMT/year**	**CO2**	**CH4**	**N2O**	**CO2e**
			1	*25*	*298*	
Existing Uses	2017	859,940	397.04	0.02	-	397.6
5 Months	2022	7,252,246	2,942.82	0.13	-	2,946
Project	2023	17,405,390	6,827.35	0.29	-	6,835
	2024	17,405,390	6,654.31	0.27	-	6,661
	2025	17,405,390	6,451.28	0.26	-	6,458
	2026	17,405,390	6,280.88	0.25	-	6,287
	2027	17,405,390	6,129.47	0.24	-	6,135
	2028	17,405,390	5,997.54	0.23	-	6,003
	2029	17,405,390	5,881.53	0.22	-	5,887
	2030	17,405,390	5,780.77	0.21	-	5,786
	2031	17,405,390	5,698.14	0.21	-	5,703
	2032	17,405,390	5,621.31	0.20	-	5,626
	2033	17,405,390	5,555.06	0.20	-	5,560
	2034	17,405,390	5,499.02	0.19	-	5,504
	2035	17,405,390	5,452.89	0.19	-	5,458
	2036	17,405,390	5,419.47	0.18	-	5,424
	2037	17,405,390	5,391.21	0.18	-	5,396
	2038	17,405,390	5,369.98	0.18	-	5,374
	2039	17,405,390	5,354.33	0.18	-	5,359
	2040	17,405,390	5,343.39	0.18	-	5,348
	2041	17,405,390	5,334.90	0.17	-	5,339
	2042	17,405,390	5,330.99	0.17	-	5,335
	2043	17,405,390	5,329.98	0.17	-	5,334
	2044	17,405,390	5,330.72	0.17	-	5,335
	2045	17,405,390	5,332.83	0.17	-	5,337
	2046	17,405,390	5,337.19	0.17	-	5,341
	2047	17,405,390	5,342.95	0.17	-	5,347
	2048	17,405,390	5,349.74	0.17	-	5,354
	2049	17,405,390	5,357.37	0.17	-	5,362
	2050	17,405,390	5,367.89	0.17	-	5,372
	2051	17,405,390	5,367.89	0.17	-	5,372
	2052	17,405,390	5,367.89	0.17	-	5,372

Source: ESA 2017

Emergency Generator Emissions

updated: 9/15/2017

Conversion Factors

HP/kW	1.3410	
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Standby Emergency Generators

Ratings:	708	kW	*(based on engineering assumptions)*
	950	HP	*(based on engineering assumptions; conversion from kW to hp)*
Load Factor:	0.74		*(based on CalEEMod Generator Set Load Factor)*
Engine Emissions Tier:	Tier 4		*(compliance with CARB diesel regulations)*
Operating Hours per Unit:	2	hours/day	*(testing/maintenance)*
	50	hours/year	*(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)*

Emergency Generator Emissions

Units	Greenhouse Gases [1]	
	CO_2	CO_2e
g/kW-hr	—	—
g/HP-hr	526.17	530.91
lbs/hr	815.48	822.83
lbs/day	1,630.96	1,645.65
lbs/yr	40,774.00	41,141.33
tons/yr	20.39	20.57
metric tons/yr	**18.49**	**18.66**

Notes:

1. Emission factor for CO2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
   Emissions of GHGs assume 99.11% of the CO2e emissions occur as CO2, which is typical for off-road diesel engines.

Source: ESA 2017.

1045 Olive - Project - Los Angeles-South Coast County, Annual

1045 Olive - Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

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	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,468.0891	2,468.0891	0.1032	0.0297	2,479.5074
Waste						0.0000	0.0000		0.0000	0.0000	379.7961	0.0000	379.7961	22.4453	0.0000	940.9287
Water						0.0000	0.0000		0.0000	0.0000	21.0528	351.8400	372.8928	2.1795	0.0546	443.6518

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	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,445.3405	2,445.3405	0.1021	0.0294	2,456.6626
Waste						0.0000	0.0000		0.0000	0.0000	91.1511	0.0000	91.1511	5.3869	0.0000	225.8229
Water						0.0000	0.0000		0.0000	0.0000	12.6317	199.2400	211.8717	1.3071	0.0326	254.2770

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	96.9960
Vegetation Land Change	0.9051
Total	**97.9011**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,866.9737	1,866.9737	0.0910	0.0188	1,874.8589
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,889.7224	1,889.7224	0.0921	0.0191	1,897.7037
NaturalGas Mitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037
NaturalGas Unmitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	848.6081	0.0414	8.5600e-003	852.1922
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,889.7224**	**0.0921**	**0.0191**	**1,897.7037**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	825.8594	0.0403	8.3300e-003	829.3475
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,866.9737**	**0.0910**	**0.0188**	**1,874.8589**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Unmitigated	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245

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	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					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	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.4876**	**0.0947**	**8.2099**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**	**0.0000**	**13.4003**	**13.4003**	**0.0130**	**0.0000**	**13.7245**

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	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					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	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.4876**	**0.0947**	**8.2099**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**	**0.0000**	**13.4003**	**13.4003**	**0.0130**	**0.0000**	**13.7245**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	211.8717	1.3071	0.0326	254.2770
Unmitigated	372.8928	2.1795	0.0546	443.6518

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	296.0011	1.6993	0.0426	351.1857
City Park	0 / 0.0714889	0.2144	1.0000e-005	0.0000	0.2153
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	61.4139	0.3558	8.9200e-003	72.9673
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	15.2634	0.1243	3.0600e-003	19.2835
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**372.8928**	**2.1795**	**0.0546**	**443.6518**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	167.8216	1.0191	0.0255	200.8910
City Park	0 / 0.0357444	0.1072	1.0000e-005	0.0000	0.1076
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	34.8575	0.2134	5.3300e-003	41.7812
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	9.0854	0.0746	1.8400e-003	11.4972
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**211.8717**	**1.3071**	**0.0326**	**254.2770**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	91.1511	5.3869	0.0000	225.8229
Unmitigated	379.7961	22.4453	0.0000	940.9287

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	1772	359.7000	21.2577	0.0000	891.1415
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	99	20.0961	1.1877	0.0000	49.7873
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**379.7961**	**22.4453**	**0.0000**	**940.9287**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	425.28	86.3280	5.1018	0.0000	213.8740
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	23.76	4.8231	0.2850	0.0000	11.9489
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**91.1511**	**5.3869**	**0.0000**	**225.8229**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	97.9011	0.0000	0.0000	97.9011

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	0 / 0.21	0.9051	0.0000	0.0000	0.9051
Total		**0.9051**	**0.0000**	**0.0000**	**0.9051**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	137	96.9960	0.0000	0.0000	96.9960
Total		**96.9960**	**0.0000**	**0.0000**	**96.9960**

1045 Olive - Project (2024) - Los Angeles-South Coast County, Annual

1045 Olive - Project (2024)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	533	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017). Linearly adjusted to 40% RPS by 2024.

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00

tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10
tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	533
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,672.4319	1,672.4319	0.0910	0.0188	1,680.3171
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,692.8101	1,692.8101	0.0921	0.0191	1,700.7914

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	760.1817	0.0414	8.5600e-003	763.7658
City Park	954.8	0.2308	1.0000e-005	0.0000	0.2319
Enclosed Parking with Elevator	2.49904e+006	604.1807	0.0329	6.8000e-003	607.0293
General Office Building	299095	72.3106	3.9300e-003	8.1000e-004	72.6515
General Office Building	492672	119.1107	6.4800e-003	1.3400e-003	119.6722
High Turnover (Sit Down Restaurant)	551927	133.4364	7.2600e-003	1.5000e-003	134.0655
Other Non-Asphalt Surfaces	13895	3.3593	1.8000e-004	4.0000e-005	3.3752
Total		**1,692.8101**	**0.0921**	**0.0191**	**1,700.7914**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	739.8035	0.0403	8.3300e-003	743.2915
City Park	954.8	0.2308	1.0000e-005	0.0000	0.2319
Enclosed Parking with Elevator	2.49904e+006	604.1807	0.0329	6.8000e-003	607.0293
General Office Building	299095	72.3106	3.9300e-003	8.1000e-004	72.6515
General Office Building	492672	119.1107	6.4800e-003	1.3400e-003	119.6722
High Turnover (Sit Down Restaurant)	551927	133.4364	7.2600e-003	1.5000e-003	134.0655
Other Non-Asphalt Surfaces	13895	3.3593	1.8000e-004	4.0000e-005	3.3752
Total		**1,672.4319**	**0.0910**	**0.0188**	**1,680.3171**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	191.1105	1.3071	0.0326	233.5158
Unmitigated	336.2304	2.1795	0.0546	406.9894

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	266.8675	1.6993	0.0426	322.0521
City Park	0 / 0.0714889	0.1920	1.0000e-005	0.0000	0.1929
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	55.3726	0.3558	8.9200e-003	66.9260
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	13.7983	0.1243	3.0600e-003	17.8185
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**336.2304**	**2.1795**	**0.0546**	**406.9894**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	151.3604	1.0191	0.0255	184.4298
City Park	0 / 0.0357444	0.0960	1.0000e-005	0.0000	0.0965
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	31.4402	0.2134	5.3300e-003	38.3638
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	8.2140	0.0746	1.8400e-003	10.6257
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**191.1105**	**1.3071**	**0.0326**	**233.5158**

1045 Olive - Project (2027) - Los Angeles-South Coast County, Annual

1045 Olive - Project (2027)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2027
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	488	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017). Linearly adjusted to 45% RPS by 2027.

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	488
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,531.2322	1,531.2322	0.0910	0.0188	1,539.1174
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,549.8900	1,549.8900	0.0921	0.0191	1,557.8712

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	696.0013	0.0414	8.5600e-003	699.5854
City Park	954.8	0.2114	1.0000e-005	0.0000	0.2124
Enclosed Parking with Elevator	2.49904e+006	553.1711	0.0329	6.8000e-003	556.0197
General Office Building	299095	66.2055	3.9300e-003	8.1000e-004	66.5465
General Office Building	492672	109.0544	6.4800e-003	1.3400e-003	109.6160
High Turnover (Sit Down Restaurant)	551927	122.1706	7.2600e-003	1.5000e-003	122.7998
Other Non-Asphalt Surfaces	13895	3.0757	1.8000e-004	4.0000e-005	3.0915
Total		**1,549.8899**	**0.0921**	**0.0191**	**1,557.8713**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	677.3435	0.0403	8.3300e-003	680.8316
City Park	954.8	0.2114	1.0000e-005	0.0000	0.2124
Enclosed Parking with Elevator	2.49904e+006	553.1711	0.0329	6.8000e-003	556.0197
General Office Building	299095	66.2055	3.9300e-003	8.1000e-004	66.5465
General Office Building	492672	109.0544	6.4800e-003	1.3400e-003	109.6160
High Turnover (Sit Down Restaurant)	551927	122.1706	7.2600e-003	1.5000e-003	122.7998
Other Non-Asphalt Surfaces	13895	3.0757	1.8000e-004	4.0000e-005	3.0915
Total		**1,531.2322**	**0.0910**	**0.0188**	**1,539.1174**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	176.0420	1.3071	0.0326	218.4473
Unmitigated	309.6207	2.1795	0.0546	380.3797

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	245.7221	1.6993	0.0426	300.9067
City Park	0 / 0.0714889	0.1758	1.0000e-005	0.0000	0.1767
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	50.9878	0.3558	8.9200e-003	62.5412
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	12.7350	0.1243	3.0600e-003	16.7552
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**309.6207**	**2.1795**	**0.0546**	**380.3797**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	139.4128	1.0191	0.0255	172.4822
City Park	0 / 0.0357444	0.0879	1.0000e-005	0.0000	0.0884
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	28.9599	0.2134	5.3300e-003	35.8835
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	7.5814	0.0746	1.8400e-003	9.9932
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**176.0420**	**1.3071**	**0.0326**	**218.4473**

1045 Olive - Project (2030) - Los Angeles-South Coast County, Annual

1045 Olive - Project (2030)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2030
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	444	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017). Linearly adjusted to 50% RPS by 2030.

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	444
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,393.1703	1,393.1703	0.0910	0.0188	1,401.0555
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,410.1458	1,410.1458	0.0921	0.0191	1,418.1271

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	633.2471	0.0414	8.5600e-003	636.8312
City Park	954.8	0.1923	1.0000e-005	0.0000	0.1934
Enclosed Parking with Elevator	2.49904e+006	503.2950	0.0329	6.8000e-003	506.1436
General Office Building	299095	60.2362	3.9300e-003	8.1000e-004	60.5771
General Office Building	492672	99.2216	6.4800e-003	1.3400e-003	99.7832
High Turnover (Sit Down Restaurant)	551927	111.1553	7.2600e-003	1.5000e-003	111.7844
Other Non-Asphalt Surfaces	13895	2.7984	1.8000e-004	4.0000e-005	2.8142
Total		**1,410.1458**	**0.0921**	**0.0191**	**1,418.1271**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	616.2716	0.0403	8.3300e-003	619.7596
City Park	954.8	0.1923	1.0000e-005	0.0000	0.1934
Enclosed Parking with Elevator	2.49904e+006	503.2950	0.0329	6.8000e-003	506.1436
General Office Building	299095	60.2362	3.9300e-003	8.1000e-004	60.5771
General Office Building	492672	99.2216	6.4800e-003	1.3400e-003	99.7832
High Turnover (Sit Down Restaurant)	551927	111.1553	7.2600e-003	1.5000e-003	111.7844
Other Non-Asphalt Surfaces	13895	2.7984	1.8000e-004	4.0000e-005	2.8142
Total		**1,393.1703**	**0.0910**	**0.0188**	**1,401.0555**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	161.3082	1.3071	0.0326	203.7135
Unmitigated	283.6023	2.1795	0.0546	354.3613

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	225.0466	1.6993	0.0426	280.2312
City Park	0 / 0.0714889	0.1600	1.0000e-005	0.0000	0.1609
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	46.7004	0.3558	8.9200e-003	58.2538
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	11.6953	0.1243	3.0600e-003	15.7154
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**283.6023**	**2.1795**	**0.0546**	**354.3613**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	127.7306	1.0191	0.0255	160.8001
City Park	0 / 0.0357444	0.0800	1.0000e-005	0.0000	0.0804
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	26.5346	0.2134	5.3300e-003	33.4583
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	6.9630	0.0746	1.8400e-003	9.3748
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**161.3082**	**1.3071**	**0.0326**	**203.7136**

Appendix C

California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017

ESA

Attachment 2
Statewide Emission Factors for Use With AB 900 Projects

Mobile-Source Emissions

Project applicants under AB 900 may use default GHG emission factors (EFs) from the California Emissions Estimator Model (CalEEMod). However, ARB acknowledges that CalEEMod does not contain the latest mobile-source emissions reductions from State and federal regulations. If an AB 900 project applicant does not wish to use CalEEMod EFs, and the project's mobile sources include "all vehicle classifications," the EFs provided via the EMFAC2014 Web Database provide a quick and easy way to access commonly used emission rates data. The Web Database contains daily emissions and emission rates data for all areas, calendar years and seasons.

See https://www.arb.ca.gov/emfac/2014/.

Electricity Emissions

An AB 900 project applicant may use the local electric utility provider's EFs and electricity intensities for today's electric supply generation.

If an applicant would like to use an EF that represents the State's Renewable Portfolio Standard (RPS) law and growth in electricity demand, the EF of 595 pounds CO_2/MWh may be used[2]. This EF represents a "marginal" supply profile for new generation that will be added to the grid in the years 2020 and beyond, and is consistent with the methodology used in State emission rule impact assessments. It represents a generation supply mix of 67 percent natural gas-fueled combined cycle power plants, and 33 percent renewable energy. ARB believes this marginal profile represents new generation plans in any electric utility territory in California.

[2] LEV III Initial Statement Of Reasons (ISOR, Dec. 7, 2011), http://www.arb.ca.gov/regact/2012/leviiighg2012/leviiighg2012.htm, based on analysis with CA-GREET model.

Exhibit 7 Applicant's Acknowledgement and Binding Agreement with the City of Los Angeles

September 1, 2017

Lisa Webber
Deputy Director of Planning
City of Los Angeles
200 N. Spring Street
Los Angeles, CA 90012

RE: 1045 Olive Project: Acknowledgement of Obligations under Public Resources Code Sections 21183(d), (e), and (f)

Dear Ms. Webber:

As you are aware, 1045 Olive, LLC ("Applicant") has applied to the California Governor to request certification of the 1045 Olive Project (the "Project") as a Leadership Project subjected to streamlined environmental review pursuant to the Jobs and Economic Improvement through Environmental Leadership Act of 2011 (the "Act"), California Public Resources Code Section 21178 et seq as amended by SB 763 and AB 734. By this letter, Applicant acknowledges and agrees to its obligations under the Act as set forth at Public Resources Code Sections 21183(d), (e), and (f).

As required by Public Resources Code Section 21183(d), Applicant agrees that all mitigation measures required pursuant to CEQA to certify the Project under the Act shall be conditions of approval, and those conditions will be fully enforceable by the City of Los Angeles (the "City") or another agency designated by the City. Applicant agrees that all environmental mitigation measures required to certify the Project under the Act will be monitored and enforced by the City for the life of the obligation.

As required by Public Resources Code Section 21183(e), Applicant agrees to pay the costs of the Court of Appeal in hearing and deciding any case, including payment of the costs for the appointment of a special master if deemed appropriate by the court, in a form and manner specified by the Judicial Council, as provided in the Rules of Court adopted by the Judicial Council pursuant to the Act.

As required by Public Resources Code Section 21183(f), Applicant agrees to pay the costs of preparing the administrative record for the Project, in a form and manner specified by the City, concurrent with review and consideration of the Project pursuant to CEQA and the Act.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

(name) Elliott Kahn

Acknowledged and agreed by:

_____
Lisa Webber
City of Los Angeles – Deputy Director of Planning

5. Environmental Leadership Development Project (ELDP) Application, Supplement to Application

February 14, 2018

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: Greenhouse Gas Emissions Offset Approach for the 1045 Olive Project

Dear Ms. Huang:

This letter is provided as a supplement to the application filed by 1045 Olive, LLC. (the "Project Applicant"), who proposes to develop the 1045 Olive Project (the "Project") in the Central City Community Plan and the City Center Redevelopment Plan Project area of the City of Los Angeles.

As you know, the Project Applicant has applied for certification by the Governor as a leadership project under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (collectively, "AB 900" or the "Act"). The application includes projected emissions for the Project that show certain projected net additional emissions of greenhouse gases (GHG) as a result of the construction of the Project and as a consequence of Project operations.

The Applicant has committed to no net increase in construction and operation-related GHG emissions. Consistent with policy recommendations included in California Air Resources Board's (CARB) California 2017 Climate Change Scoping Plan,[1] while offsets are a potential way to mitigate GHG emissions, other options will continue to be explored as well to the extent feasible, with the following order of preference: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry. To the extent offsets are used to mitigate GHG emissions, prior to issuance or any Certificate of Occupancy for any building in the project, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits issued by a recognized and reputable carbon registry, which contract, together with any previous contracts, shall evidence the purchase of carbon credits in an amount sufficient to offset the operational emissions attributable to each building constructed within the project over the analysis horizon of 30 years. Prior to execution of the contract(s), the Applicant shall provide the lead agency (the City of Los Angeles) a calculation of the net additional operational GHG emissions according to the methodology followed in the

[1] The California 2017 Climate Change Scoping Plan is available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Greenhouse Gas Emissions Methodology and Documentation for the 1045 Olive Street Project document. The Applicant shall agree to promptly submit copies of executed contracts for purchased carbon credits to CARB and to the Governor's office. The commitments to enter into contracts to offset net additional GHG emissions will be incorporated as a condition of project approval under the Public Resources Code sec. 21183(e), which is binding and enforceable by the lead agency.

The Project Applicant proposes to meet the requirement set forth in California Public Resources Code Section 21183(c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through the implementation of GHG-reducing Project Design Features and/or acquisition of voluntary carbon credits sufficient to offset all projected additional emissions, in the following manner:

1. No later than six (6) months after the issuance of a Temporary Certificate of Occupancy for the Project, the Project Applicant shall commit to providing to the lead agency, the City of Los Angeles, a calculation of the net additional emissions resulting from the construction of the Project (the "Construction Emissions"), to be calculated in accordance with the methodology agreed upon by the California Air Resources Board (CARB) in connection with the AB 900 certification of the Project (the "Agreed Methodology"). Project Applicant shall provide courtesy copies of the calculations to CARB and the Governor's Office promptly following transmittal of the calculations to the City of Los Angeles. Project Applicant shall enter into one or more contracts for the implementation of GHG-reducing Project Design Features and/or purchase voluntary carbon credits from a recognized and reputable carbon registry in an amount sufficient to offset the Construction Emissions. The Project Applicant shall provide courtesy copies of any such contracts to CARB and the Governor's Office promptly following the execution of such contracts.

2. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall commit to entering into one or more contracts to purchase carbon credits from a recognized and reputable carbon registry (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

   Prior to execution of the contract(s), the Applicant and its consultant shall calculate the Operational Emissions, in accordance with the methodology described in the Applicant's "Application for Environmental Leadership Development Project," specifically the "Greenhouse Gas Emissions Methodology and Documentation" prepared by Environmental Science Associates (ESA).

   Once the City has had an opportunity to review and approve the methodology and associated calculations, the Applicant shall provide copies of the calculation methodology to the California Air Resources Board (CARB) and Governor's Office of Planning and Research (OPR), which is then subject to a determination signed by the Executive Officer

of CARB pursuant to the procedures set forth in Section 6 of OPR's Guidelines. The City will issue a Certificate of Occupancy upon receipt of the following: (1) a fully executed copy of the carbon offset purchase agreement(s); (2) a final CARB Determination that the Project will not result in any net additional GHG emissions; and (3) a copy of OPR's Certification Letter for the Project.

3. The following project design features were accounted for in the AB 900 application for purposes of reducing GHG emissions and are, therefore, included as commitments in this letter.

   A. The design of the new buildings shall incorporate features to be capable of achieving Gold certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)-CS® or LEED-NC® Rating System as of January 1, 2011. Specific sustainability features that are integrated into the Project design to enable the Project to achieve at least LEED® Gold certification would include but not be limited to the following:

      a. The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.

      b. The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

      c. The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.

      d. The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

      e. The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.

      f. The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

   B. The residential units within the Project shall not include the use of natural gas-fueled fireplaces.

The commitments outlined herein will be incorporated into the Project's Final Environmental Impact Report (FEIR) as a proposed improvement measure. The Project Applicant will agree to comply with all improvement measures and mitigation measures

contained in the FEIR through the Project's Mitigation Monitoring and Reporting Program, which represents a binding and enforceable agreement with the Project's lead agency, the City of Los Angeles.

Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Adam Tartakovsky
Its: Authorized Signatory

cc: Alejandro Huerta, City Planner, City of Los Angeles, Department of City Planning
Ryan Leaderman, Partner, DLA Piper LLP
Heidi Rous, Air Quality and Noise Group Director, ESA

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

1045 Olive Project

LEED Measures

The following list highlights the main sustainability strategies to be implemented into the 1045 Olive Project in order to achieve Gold certification or greater under LEED v3 or the LEED v4 rating system, as applicable. This is in addition to the strategies needed to reduce the greenhouse gas (GHG) emissions, as required by the California Air Resources Board (CARB).

Design

- Prior to Project approvals, a preliminary LEED action plan will be submitted to the City of Los Angeles Department of City Planning. Prior to issuance of a building permit, conduct a preliminary LEED meeting with a minimum of four key Project team members and the owner or owner's representative. As part of the meeting, review a LEED action plan that, at a minimum (1) determines the LEED certification level to pursue (Gold or Platinum); (2) selects the LEED credits to meet the targeted certification level; and (3) identifies the responsible parties, including but not limited to the Los Angeles Department of Building and Safety, the City of Los Angeles Department of City Planning, the City of Los Angeles Department of Public Works, Bureau of Engineering, to ensure the LEED requirements for each prerequisite and selected credit are met. Modifications to the selected criteria are permissible during construction as long as the targeted LEED certification level continues to be met.

Site

- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

Transportation

- The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to the site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

Water Quality

- Use of on-site storm water treatment in accordance with City standards.
- Installation of catch basin inserts and screens to provide runoff contaminant removal in accordance with City standards.
- Preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plan (SUSMP), both of which would include Best Management Practices (BMPs) to control stormwater runoff, minimize pollutant loading and erosion effects during and after construction.

Energy Conservation and Efficiency

- Use of full-cutoff or fully shielded on-street lighting oriented to pedestrian areas/sidewalks so as to minimize overlighting, light trespass, and glare.
- Inclusion of outdoor air flow measuring devices, additional outdoor air ventilation, and use of low emitting materials to promote indoor environmental quality.
- Use of refrigerants that reduce ozone depletion.
- Provision of conduit that is appropriate for future photovoltaic and solar thermal collectors.
- Post-construction commissioning of building energy systems performed on an ongoing basis to ensure all systems are running at optimal efficiency.
- Purchase of renewable source power (“green power”) or implementation of other carbon offset programs or carbon offset purchases to minimize carbon emissions.
- Review of commissioning activities by an independent Commissioning Agency and development and implementation of commissioning plan.
- Implementation of building level energy meter to provide monthly tracking of energy consumption.
- Provision of metering for tenant space.

Solid Waste

- Provision of on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied.

- Implementation of a construction waste management plan to recycle and/or salvage a minimum of 65 percent of nonhazardous construction debris.

- Diversion of construction materials from landfill. Diversion must include at least three material streams (e.g., recovery, reuse, and recycling).

Air Quality

- Employment of practices that prohibit the use of chlorofluorocarbons (CFCs) in heating, ventilation, and air conditioning (HVAC) systems.

- Installation of MERV 11 filtration at outside air intakes to improve indoor air quality (per LEED minimum indoor air quality performance requirements).

- Meeting applicable California and/or Los Angeles air emissions requirements for all heating or cogeneration equipment utilized at the Project Site.

- Installation of landscaping and canopy trees throughout the Project Site, including roof decks, pool decks, and terraces, to provide shading and capture carbon dioxide (CO_2) emissions.

- Use of adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air pollutants.

- Development of an Indoor Air Quality Management Plan for construction and pre-occupancy phases.

- Provision of individual control on thermostats to 50 percent of building occupants. For residential buildings, the credit can be achieved by providing access to operable windows. For commercial spaces, control must be provided to 50 percent of occupants in order to meet the intent of the credit.

- HVAC system design compliance to ASHRAE 55. The Core & Shell base building mechanical systems must allow for the tenant build-out to meet the requirement of this credit.

6. Environmental Leadership Development Project (ELDP) Application, Revised Traffic Assessment

The **Mobility** Group
Transportation Strategies & Solutions

Memorandum

To: Alan Sako, ESA

From: Michael Bates, Iain Conway

Subject: 1045 S Olive Project – AB 900 Traffic Assessment - Revised

Date: April 3, 2018

This Memorandum provides a transportation assessment of the 1045 S Olive Project to determine whether it meets the transportation efficiency requirements for classification as an Environmental Leadership Development Project under California Assembly Bill 900 (AB 900).

1. Project Location

The Project Site is located in downtown Los Angeles, the dense, mixed-use urban core of the extensive metropolitan region. Downtown Los Angeles serves as the hub of the regional transit system with many regional rail and bus public transit services passing through or beginning and terminating services there. Downtown Los Angeles is also a highly walkable and bicycle-friendly area.

The Project Site is located at the northwest corner of Olive Street and 11th Street, and is bounded by Olive Street on the east, 11th Street on the south, an alley on the west and private property on the north. The block on which the Project is located is also bounded by Grand Avenue on the west and Olympic Boulevard to the north. The surrounding area includes a large range of newer mixed-use development, and older commercial, office, residential and warehouse uses.

The Project Site is directly served by Olive Street and 11th Street, which are designated as a Modified Avenue II and a Modified Collector Street respectively, in the City of Los Angeles Mobility Plan 2035. Adjacent streets are Grand Avenue and Olympic Boulevard which are designated as a Modified Avenue II and a Modified Avenue I respectively. There are bike lanes on Olive Street and on Grand Avenue.

The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is located less than 0.5 miles from the Pico Metro Station at Pico Boulevard and Flower Street. The Pico Metro Station serves the Metro Blue Line (Downtown Los Angeles – Long Beach) and Metro Expo Line (Downtown Los Angeles – Santa Monica), which travel at 6-minute and 12-minute intervals during weekday peak hours. These services terminate at 7th Street Metro Center Station in Downtown Los Angeles, providing access to the Metro Red and Purple Lines. The Project Site is also located within 0.7 miles of the 7th Street/Metro Center Station, which serves the Metro Red Line (Downtown Los Angeles – North Hollywood / Universal City) and Metro Purple Line (Downtown Los Angeles – Koreatown), which travel at 5-minute intervals during weekday peak hours. The Metro Red and Purple Lines also provide access to Union Station, with connections to the Metro Gold Line and the Metrolink Commuter Rail system.

The 1.9 mile Metro Regional Connector Project is currently under construction to connect Union Station and the 7th Street/Metro Center Station and will serve Little Tokyo, the Arts District, Civic Center, The Historic Core, Broadway, Grand Avenue, Bunker Hill, Flower Street and the Financial District. Additionally, the Regional Connector will provide direct connections between the Metro Gold Line and the Blue, Expo, Red and Purple Lines at 7th Street/Metro Center Station, eliminating the need for passenger transfers.

The Project Site is located approximately 0.27 miles east of Figueroa Street. The MyFig Project is currently being implemented on Figueroa Street and will add protected bike lanes, enhanced sidewalks, landscaping and pedestrian facilities, which along with the existing northbound bus lane will transform the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFig Project will also install a protected bike lane and similar enhancements along the north side of 11th Street from Broadway to Figueroa Street.

The Los Angeles Streetcar is a streetcar project planned for downtown Los Angeles, which will run on streets in a loop connecting the Civic Center, Broadway Corridor, Financial District and 7th Street. In the vicinity of the Project, it will run south on Broadway, west on 11th Street immediately adjacent to the Project, and north on Figueroa Street.

Bicycle facilities in the Project Area include bike lanes on Olive Street, Grand Avenue and Spring Street (3 blocks east of the Project). Additionally, there are bike lanes planned on Flower Street (3 blocks west of the Project) and Broadway (2 blocks east of the Project), according to City of Los Angeles' Mobility Plan 2035.

Metro Bike Share is a bicycle-sharing system with approximately 60 stations in and around downtown Los Angeles. Many stations are located at transit hubs, such as Union Station and

7th Street/Metro Center Station. Access to the system is provided 24 hours per day and payment can be made for an individual trip or on a monthly basis. The nearest stations to the Project Site are located at 11th Street & Hope Street, 12th Street & Hill Street and Olympic Boulevard & Grand Avenue, each being approximately a two-block walk from the Project Site.

2. Project Description

The Project Site is currently occupied by four commercial buildings totaling 35,651 sq. ft. and approximately 5,952 square feet paved parking area. The four buildings are one-story in height and are reflective of the older single story development in the Downtown area. Existing active land uses include 14,653 sq. ft. of manufacturing space and 5,171 sq. ft. of retail space. The remaining 15,827 sq. ft. is currently vacant.

The Proposed Project is a mixed-use development comprising 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground and mezzanine levels. The commercial space has been conservatively assessed as half high-turnover restaurant and half quality restaurant for trip generation purposes. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors. Approximately 100,652 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and public art display (Plaza). On-site open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies.

3. Site Access and Circulation

Vehicle access would be provided from one driveway on Olive Street, near the northern property line, and from two driveways on the alley between 11th Street and Olympic. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. An additional service driveway on the alley near the center of the Project Site would provide access to on-site loading and move-in/out services.

Pedestrian access to the Project Site would be provided from a 17-foot sidewalk along Olive Street. Access to the retail uses would be provided from a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street and the 17-foot sidewalk along Olive Street. Pedestrian access into the local neighborhood is facilitated by a midblock signalized pedestrian crosswalk on Olive Street between Olympic Boulevard and 11th Street and signalized crosswalks at all intersections in the vicinity of the Project. Additionally, there are midblock crosswalks on Grand Avenue south of 14th Street, on Hill Street (one block east of the Project) between 8th Street and 9th Street and between 11th Street and 12th Street, on Broadway (2 blocks east of the

Project) between 8th Street and 9th Street, between 9th Street and Olympic Boulevard, between Olympic Boulevard and 11th Street and between 11th Street and 12th Street.

The Project Site is located on the downtown bicycle network, comprising a bike lane on Grand Avenue, half a block west of the Project Site and by a bike lane running along Olive Street adjacent to the Project Site. The wider Project Area contains a high-level of bicycle access, with bike lanes as described earlier in Section 1.

4. Existing Transit Service

The Project Site is served by numerous transit lines within a one block walking distance on Olive Street, Grand Avenue, and Olympic Boulevard, including two Rapid Lines 770 and 728, eleven Metro lines 14, 28, 37, 70, 71, 76, 78, 79, 378, and 96, one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB 10), and two LADOT Commuter Express Lines CE 431 and CE 437. There are twelve bus services on Olive Street, twelve services on Grand Avenue, nine services on Hill Street, six on Broadway, four on 9th Street, four on Olympic Boulevard, two on 11th Street and one on Pico Boulevard.

The Project Site is located within 0.5 miles of the Pico Light Rail Station, which provides services to the Metro Blue and Expo Lines. The Project Site is also located within 0.7 miles of the 7th Street Metro Center Station, which provides services to Metro Red and Purple Lines. The Metro Blue Line travels between Long Beach Transit Mall and 7th Street Metro Center at 6-minute intervals during weekday peak hours, the Metro Expo Line travels between Santa Monica and Downtown Los Angeles at 12-minute intervals during weekday peak hours, and the Metro Red and Purple Lines travel between North Hollywood and Downtown Los Angeles at 5-minute intervals during weekday peak hours.

5. Project Trip Generation and Vehicle Miles Travelled (VMT)

Trip generation for the Proposed Project was estimated using ITE's 9th Edition Trip Generation Manual, as shown in Table 1. ITE trip rates for Apartments, High-Turnover Restaurant and Quality Restaurant were used for the land uses of the Proposed Project and ITE trip rates for Manufacturing and Specialty Retail were used for the existing uses. The trip generation estimates were adjusted for trip credits for existing active land uses to be removed and reductions for pass-by, transit, walk and internal capture. The Proposed Project is estimated to generate 4,817 net daily trips, 359 net trips in the AM Peak Hour, comprising 79 net inbound trips and 280 net outbound trips and 440 net trips in the PM Peak Hour, comprising 287 net inbound trips and 153 net outbound trips.

The Project type and location enjoy a number of advantages that will reduce the number of trips that will be generated. These include:

- Removal of Existing Uses from the Project Site.
- Internal Capture within Project land uses.
- Use of Transit and Walk/Bike.
- Pass-by trips.
- Transportation Demand Management (TDM) measures.

In order to demonstrate the efficacy of these trip reductions, trip generation was estimated for the Proposed Project without trip credits for the existing active land uses and without reductions for pass-by, transit, walk/bike and internal capture, as shown in Table 2. Trip generation was estimated at 6,637 daily trips, 478 trips in the AM peak hour and 601 trips in the PM peak hour.

Table 2 also shows the estimated vehicle miles travelled (VMT) without trip reductions. Average trip lengths for each land use were estimated using the California Emissions Estimator Model (CalEEMod) for the South Coast Air Basin (LA County except for the Antelope Valley, Orange County, and the urbanized portions of Riverside and San Bernardino Counties). CalEEMod specifies average trip lengths for the South Coast Air Basin by trip purpose (Home-Work, Home-Shop, Home-Other, Commercial-Customer, Commercial-Work and Commercial-Nonwork). For each land use, CalEEMod specifies the proportion of trips that are of each trip purpose, thus enabling the calculation of average trip lengths by land use. Trip lengths were calculated for the Home-Work, Home-Shop, Home-Other trip purposes for the residential units, and for the for the Commercial-Customer, Commercial-Work and Commercial-Nonwork trip purposes for the commercial uses. Table 2 shows the average trip length for each land use. As shown in Table 2, the average trip length from CalEEMod for the South Coast Air Basin is estimated at 10.6 miles for residential apartments, 8.8 miles for high-turnover restaurant and 9.1 miles for quality restaurant. These trip lengths were applied to the Project trips to develop the total vehicle miles traveled (VMT) of the Project.

As shown in Table 2, the Proposed Project prior to accounting for applicable reductions is estimated to generate 68,078 daily VMT, 4,937 VMT in the AM Peak Hour and 6,189 VMT in the PM Peak Hour.

6. Comparable Project

The Proposed Project's performance has been assessed in comparison to a Comparable Project, which represents a baseline case. The Comparable Project has the same land uses and quantities as the Proposed Project, but does not have the location-specific nor the Proposed Project design-specific benefits nor the infill nature of the Proposed Project that would lead to trip reductions.

For the purposes of analysis it is considered that pass-by trip reductions would be equally applicable to the Comparable Project and the Proposed Project, as these reductions are generally applied to all projects in the City of Los Angeles regardless of location, in accordance with LADOT's Transportation Impact Study Guidelines (December 2016). Trip reductions made for the removal of existing buildings are associated with the infill nature of the site of the Proposed Project and would therefore be applicable to the Proposed Project and not to the Comparable Project. Trip reductions made for the Project being located in a highly walkable and transit-friendly area are location-specific benefits and as such, would only be applicable to the Proposed Project. Trip reductions made for the internal capture of trips and trip reductions due to the Transportation Demand Management package are considered to be design-specific benefits of the Proposed Project and therefore would be applicable to the Proposed Project and not to the Comparable Project.

As noted above, reductions for pass-by trips should apply to both the Comparable Project and the Proposed Project. As shown in Table 3, there would be a pass-by reduction of 148 daily trips, 9 trips in the AM peak hour and 12 trips in the PM peak hour. These trip reductions result in reductions of 1,314 daily VMT, 79 VMT in the AM peak hour and 106 VMT in the PM peak hour.

7. Project Related Reductions to Trip Generation and VMT

The Project's infill nature, location, design and TDM program will reduce vehicle trips and VMT compared with the Comparable Project. The quantitative analysis of these reductions to vehicle trips and VMT follows.

Removal of Existing Uses from Project Site

The project site currently has four existing buildings with a total of 19,824 sq. ft. existing active uses, of which 14,653 sq. ft. is manufacturing space and 5,171 sq. ft. is retail space. These land uses would be removed from the site prior to construction of the Proposed Project.

As shown in Table 4, removal of the existing active land uses would eliminate the trips currently generated by those uses, and would result in a reduction of 231 daily trips, 9 trips in the AM peak hour and 20 trips in the PM peak hour. These trip reductions result in reductions of 2,356 daily VMT, 117 VMT in the AM peak hour and 222 VMT in the PM peak hour.

Internal Capture Reduction

The Proposed Project restaurant space would provide a convenient local destination for the residential element of the Proposed Project without having to drive to other locations. It was estimated that 15% of the trips to and from the restaurant space would come from the onsite residential element of the Proposed Project.

As shown in Table 5, there would be an internal capture reduction of 203 daily trips, 11 trips in the AM peak hour and 16 trips in the PM peak hour. These trip reductions result in reductions of 1,811 daily VMT, 97 VMT in the AM peak hour and 143 VMT in the PM peak hour.

Transit & Walk/Bike Reduction

The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Proposed Project. Therefore, it was estimated that vehicle trips would be reduced by 20% due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

As shown in Table 6, the use of transit and walk/bike would reduce vehicle trips by 1,238 daily trips, 90 trips in the AM peak hour and 113 trips in the PM peak hour. These trip reductions result in reductions of 12,751 daily VMT, 933 VMT in the AM peak hour and 1,168 VMT in the PM peak hour.

Transportation Demand Management (TDM) Reduction

The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:

- Promotion and support of carpools and rideshares, including parking and transit incentives.
- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
- Unbundling of residential parking.

- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
- Provide amenities to encourage the use of delivery services.
- Discounts for employees who utilize public transit to travel to the site.
- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
- Provide a free bike share service for residents.
- Participate in the City's Bike Share Program by providing an area for bike share facilities.

The implementation of the TDM package would result in an estimated reduction of 15% of the vehicle trips to and from the residential element of the Proposed Project.

As shown in Table 7, the TDM program would result in a reduction of 758 daily residential trips, 55 trips in the AM peak hour and 69 trips in the PM peak hour. These trip reductions result in reductions of 7,838 daily VMT, 572 VMT in the AM peak hour and 716 VMT in the PM peak hour.

8. Total Proposed Project Trips and VMT

A summary of the total trips and VMT for the Proposed Project and comparison with the Comparable Project is shown in Table 8. It was estimated that the Proposed Project would generate 4,059 daily trips, resulting in 42,008 daily VMT. It was estimated that the Comparable Project would generate 6,489 daily trips, resulting in 66,764 daily VMT.

Table 9 shows a summary of absolute and proportional differences between the generated trips and VMT of the Proposed Project and the Comparable Project. It was estimated that the Proposed Project would generate 37% less daily trips than the Comparable Project, resulting in a reduction of 37% daily VMT compared with the Comparable Project. In the AM peak hour, it was estimated that the Proposed Project would generate 35% less trips than the Comparable Project, resulting in a reduction of 35% AM peak hour VMT compared with the Comparable Project. In the PM peak hour, it was estimated that the Proposed Project would generate 37%

less trips than the Comparable Project, resulting in a reduction of 37% PM peak hour VMT compared with the Comparable Project.

The substantial reductions in generated trips and VMT from the Comparable Project to the Proposed Project noted above are due to the TDM Program as well as the location-specific benefits, the design-specific benefits and the infill nature of the Proposed Project with respect to the Comparable Project.

The analysis shows that the Proposed Project considerably exceeds the threshold of 15% transportation efficiency that is required for the Environmental Leadership Development Project application. It is noted that a 15% reduction is achieved solely by the TDM Program proposed for the Project.

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

Daily Trips

Land Use Assumptions		Source [1] & Code	Quantity	Units	Daily			
						Trip Rate		Total Trips
Existing Uses								
Manufacturing [2,3]		ITE 140	14,653	SF		3.82		-56
(Reduction for transit trips) -	15%							8
(Reduction for walk/bike trips) -	5%							2
Net Manufacturing								-46
Specialty Retail [2,3]		ITE 826	5,171	SF		44.32		-229
(Reduction for transit trips) -	15%							34
(Reduction for walk/bike trips) -	5%							10
Net Specialty Retail								-185
Total Existing								-231
Proposed Uses								
Apartment [2]		ITE 220	794	DU		6.65		5,280
(Reduction for transit trips) -	15%							-792
(Reduction for walk/bike trips) -	5%							-224
Net Apartments								4,264
High-Turnover Restaurant [2]		ITE 932	6,252	SF		127.15		795
(Reduction for internal trips) -	15%							-119
(Reduction for transit trips) -	15%							-101
(Reduction for walk/bike trips) -	5%							-29
(Reduction for pass-by trips) -	20%							-109
Net High-Turnover Restaurant								437
Quality Restaurant [2]		ITE 931	6,252	SF		89.95		562
(Reduction for internal trips) -	15%							-84
(Reduction for transit trips) -	15%							-72
(Reduction for walk/bike trips) -	5%							-20
(Reduction for pass-by trips) -	10%							-39
Net Quality Restaurant								347
Total Proposed								5,048
Total Net								4,817

AM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	AM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.57	0.16	0.73	-8	-3	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-7	-2	-9
Specialty Retail [2,3,4]		ITE 826	5,171	SF	0.00	0.00	0.00	0	0	0
(Reduction for transit trips) -	15%							0	0	0
(Reduction for walk/bike trips) -	5%							0	0	0
Net Specialty Retail								0	0	0
Total Existing								-7	-2	-9
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.10	0.41	0.51	79	326	405
(Reduction for transit trips) -	15%							-12	-49	-61
(Reduction for walk/bike trips) -	5%							-3	-14	-17
Net Apartments								64	263	327
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.95	4.86	10.81	37	31	68
(Reduction for internal trips) -	15%							-6	-4	-10
(Reduction for transit trips) -	15%							-5	-4	-9
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	18	38
Quality Restaurant [2,5]		ITE 932	6,252	SF	0.45	0.36	0.81	3	2	5
(Reduction for internal trips) -	15%							-1	0	-1
(Reduction for transit trips) -	15%							0	-1	-1
(Reduction for walk/bike trips) -	5%							0	0	0
(Reduction for pass-by trips) -	10%							0	0	0
Net Quality Restaurant								2	1	3
Total Proposed								86	282	368
Total Net								79	280	359

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

PM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	PM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.26	0.47	0.73	-4	-7	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-3	-6	-9
Specialty Retail [2,3]		ITE 826	5,171	SF	1.19	1.52	2.71	-6	-8	-14
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	1	1
Net Specialty Retail								-5	-6	-11
Total Existing								-8	-12	-20
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.40	0.22	0.62	318	174	492
(Reduction for transit trips) -	15%							-48	-26	-74
(Reduction for walk/bike trips) -	5%							-14	-7	-21
Net Apartments								256	141	397
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.91	3.94	9.85	37	25	62
(Reduction for internal trips) -	15%							-6	-3	-9
(Reduction for transit trips) -	15%							-5	-3	-8
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	14	34
Quality Restaurant [2]		ITE 932	6,252	SF	5.02	2.47	7.49	31	16	47
(Reduction for internal trips) -	15%							-5	-2	-7
(Reduction for transit trips) -	15%							-4	-2	-6
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	10%							-2	-1	-3
Net Quality Restaurant								19	10	29
Total Proposed								295	165	460
Total Net								287	153	440

Notes:

1. ITE Rates from Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington, DC, 2012, except otherwise noted.
2. Trip rate reductions were applied per LADOT's Transportation Impact Study Guidelines, December 2016.
3. Existing land use data from Crescent Heights and site observations on 9/5/2017.
4. Existing Specialty Retail is closed on weekday mornings, therefore no existing trip credit is claimed for the AM peak hour.
5. Directional Distribution for AM peak from High-Turnover Restaurant, as non published for Quality Restaurant.

Table 2. Proposed Project - Total Unadjusted Project Trips and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation Estimates (Without Trip Reductions)								
Apartments	794 DU	5,280	79	326	405	318	174	492
High-Turnover Restaurant	6,252 SF	795	37	31	68	37	25	62
Quality Restaurant	6,252 SF	562	3	2	5	31	16	47
Total Project Trips Before Reductions		6,637	119	359	478	386	215	601
Vehicle Miles Travelled (Without Trip Reductions)								
Apartments	10.6 Miles	55,968	837	3,456	4,293	3,371	1,844	5,215
High-Turnover Restaurant	8.8 Miles	6,996	326	273	598	326	220	546
Quality Restaurant	9.1 Miles	5,114	27	18	46	282	146	428
Gross Project VMT Before Reductions		68,078	1,190	3,747	4,937	3,979	2,210	6,189

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- DU = Dwelling Unit, SF = Square Feet.

Table 3. Comparable Project - Trips Generated with Pass-by Trip Reduction and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Pass-by Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	20%	109	5	4	9	5	4	9
Quality Restaurant	10%	39	0	0	0	2	1	3
Subtotal - Pass-by Trip Reduction		148	5	4	9	7	5	12
Total Project Trips with Pass-by Reduction		6,489	114	355	469	379	210	589
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	959	44	35	79	44	35	79
Quality Restaurant	9.1 Miles	355	0	0	0	18	9	27
Subtotal - Pass-by VMT Reduction		1,314	44	35	79	62	44	106
Comparable Project VMT		66,764	1,146	3,712	4,858	3,917	2,166	6,083

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Pass-by Trip Reductions based on estimates shown in Table 1.
- Comparable Project VMT calculated as the difference between the Gross Project VMT Before Reductions from Table 2 and the Pass-by VMT Reduction.

Table 4. Proposed Project - Existing Land Uses to be Removed - Trip Reduction and Conversion to Vehicle Miles Travelled

4/3/2018

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trips								
Manufacturing	14,653 SF	46	7	2	9	3	6	9
Retail	5,171 SF	185	0	0	0	5	6	11
Existing Project Site Trips		231	7	2	9	8	12	20
% Trips Reduced due to Land Uses Removed		4%	6%	1%	2%	2%	6%	3%
Vehicle Miles Travelled								
Manufacturing	13.0 Miles	598	91	26	117	39	78	117
Retail	9.5 Miles	1,758	0	0	0	48	57	105
Existing Project Site VMT		2,356	91	26	117	87	135	222
% VMT Reduced due to Land Uses Removed		4%	8%	1%	2%	2%	6%	4%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Existing Land Use Trip Reductions based on estimates shown in Table 1.

Table 5. Proposed Project - Internal Capture - Trip Reduction and Conversion to Vehicle Miles Travelled 4/3/2018

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Land Use	*Internal Capture Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	15%	119	6	4	10	6	3	9
Quality Restaurant	15%	84	0	1	1	5	2	7
Trips Reduced by Internal Capture		203	6	5	11	11	5	16
% Trips Reduced by Internal Capture		3%	6%	1%	2%	3%	3%	3%
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	1,047	53	35	88	53	26	79
Quality Restaurant	9.1 Miles	764	0	9	9	46	18	64
VMT Reduced by Internal Capture		1,811	53	44	97	99	44	143
% VMT Reduced by Internal Capture		3%	5%	1%	2%	3%	2%	2%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Internal Capture Trip Reductions based on estimates shown in Table 1.

Table 6. Proposed Project - Transit & Walk/Bike - Trip Reduction and Conversion to Vehicle Miles Travelled

4/3/2018

Land Use	*Transit & Walk Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	20%	1,016	15	63	78	62	33	95
High-Turnover Restaurant	20%	130	6	5	11	6	4	10
Quality Restaurant	20%	92	0	1	1	5	3	8
Trips Reduced by Transit & Walk		1,238	21	69	90	73	40	113
% Trips Reduced by Transit & Walk		20%	20%	20%	20%	20%	20%	20%
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	10,770	159	668	827	657	350	1,007
High-Turnover Restaurant	8.8 Miles	1,144	53	44	97	53	35	88
Quality Restaurant	9.1 Miles	837	0	9	9	46	27	73
VMT Reduced by Transit & Walk		12,751	212	721	933	756	412	1,168
% VMT Reduced by Transit & Walk		20%	20%	20%	20%	20%	20%	20%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transit & Walk Trip reductions based on estimates shown in Table 1.

Table 7. Proposed Project - Transportation Demand Management - Trip Reduction and Conversion to Vehicle Miles Travelled 4/3/2018

Land Use	*Transportation Demand Management Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	15%	640	10	39	49	38	22	60
High-Turnover Restaurant	15%	66	3	3	6	3	2	5
Quality Restaurant	15%	52	0	0	0	3	1	4
Trips Reduced by Transportation Demand Management		758	13	42	55	44	25	69
% Trips Reduced by Transportation Demand Management		15%	15%	15%	15%	15%	15%	15%
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	6,784	106	413	519	403	233	636
High-Turnover Restaurant	8.8 Miles	581	27	26	53	26	18	44
Quality Restaurant	9.1 Miles	473	0	0	0	27	9	36
VMT Reduced by Transportation Demand Management		7,838	133	439	572	456	260	716
% VMT Reduced by Transportation Demand Management		15%	15%	15%	15%	15%	15%	15%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transportation Demand Management Trip Reductions based on net trip generation estimates for proposed land uses shown in Table 1, multiplied by the Transportation Demand Management Reduction %.

Table 8. Comparison of Proposed Project to Comparable Project 4/3/2018

Trip Reductions and Conversion to Vehicle Miles Travelled

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Existing Land Use Trip Reduction (From Table 4)	231	7	2	9	8	12	20
Internal Capture Trip Reduction (From Table 5)	203	7	4	11	11	5	16
Transit & Walk Trip Reduction (From Table 6)	1,238	21	69	90	73	40	113
TDM Program Trip Reduction (From Table 7)	758	13	42	55	44	25	69
Net Proposed Project Trips	4,059	66	238	304	243	128	371
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Existing Land Use VMT Reduction (From Table 4)	2,356	91	26	117	87	135	222
Internal Capture VMT Reduction (From Table 5)	1,811	53	44	97	99	44	143
Transit & Walk VMT Reduction (From Table 6)	12,751	212	721	933	756	412	1,168
TDM Program VMT Reduction (From Table 7)	7,838	133	439	572	456	260	716
Net Proposed Project VMT	42,008	657	2,482	3,139	2,519	1,315	3,834

Table 9. Comparison of Proposed Project to Comparable Project 4/3/2018

Percentage Trip Reductions and Percentage Vehicle Miles Travelled Reductions

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Proposed Project (From Table 8)	4,059	66	238	304	243	128	371
Trip Reduction from Comparable Project to Proposed Project	2,430	48	117	165	136	82	218
Percentage Trip Reduction from Comparable Project to Proposed Project	37%	42%	33%	35%	36%	39%	37%
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Proposed Project (From Table 8)	42,008	657	2,482	3,139	2,519	1,315	3,834
VMT Reduction from Comparable Project to Proposed Project	24,756	489	1,230	1,719	1,398	851	2,249
Percentage VMT Reduction from Comparable Project to Proposed Project	37%	43%	33%	35%	36%	39%	37%

7. California Air Resources Board (CARB) Staff Evaluation

CARB Staff Evaluation of AB 900 Application for 1045 Olive Street Project

February 26, 2018

I. Introduction

1045 Olive, LLC (Applicant) proposed a new mixed-use development (Project) on an approximately 0.96-acre site located at the northwest corner of Olive Street and 11th Street (Project Site) in Downtown Los Angeles, California. The Project Site currently contains four existing single-story commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. The Project would demolish and remove the four existing buildings and replaced them with a new 751,777 square foot (net) mixed-use high-rise building.

The development would include a 61-story tower atop a nine level podium structure for a total of 70 floors, up to 810 feet in height. The Project would include 739,273 square feet of residential uses (zoning area) with 794 residential units, and 12,504 square feet of commercial uses accessible at the ground level. Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements, with a total of 891 spaces (878 residential and 13 commercial). Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 886 bicycle spaces provided within the parking garage on ground level, mezzanine and one level below grade.

The Applicant is seeking certification for the project under Assembly Bill 900 (AB 900), the Jobs and Economic Improvement through Environmental Leadership Act.

AB 900 provides for streamlined judicial review under the California Environmental Quality Act (CEQA) if certain conditions are met. One condition is that the proposed project does not result in any net additional greenhouse gas (GHG) emissions as determined by the California Air Resources Board (CARB). This is the only condition that involves a determination by CARB. CARB staff prepared this technical evaluation of the GHG emissions from the proposed project as part of its determination.

This evaluation includes an executive summary, an overview of the AB 900 zero net additional GHG emissions requirement, a brief description of the proposed project, a technical review and assessment of GHG emissions information provided by the Applicant in its AB 900 application, and CARB staff's recommendation on the AB 900 GHG emissions determination for the proposed project.

II. Executive Summary

CARB staff reviewed the projected GHG emissions provided by the Applicant and confirmed the GHG emission factors used to estimate construction and operational emissions. Staff concurs with the GHG quantification in the Applicant's proposal (Attachment 2).

Based on an evaluation of the documentation provided by the Applicant, CARB staff concludes that, with commitments to purchase voluntary carbon credits documented in Attachment 2, the proposed project would not result in any net additional GHG emissions relative to the baseline as summarized in Tables 1 and 2 below. CARB staff confirms that the proposed project would meet the GHG emissions requirements of the Jobs and Economic Improvement through Environmental Leadership Act. (Pub. Resources Code, §21178 et seq.) A detailed description of emissions by source is reviewed in subsequent sections.

Table 1 shows project GHG emissions generated by construction activities. Project construction is expected to be completed over 3.5 years, with demolition activities beginning in 2019. The Applicant has committed to offset the GHG emissions generated during project construction. The Applicant will provide courtesy copies of the calculations to CARB and the Governor's Office. Additionally, the Applicant has agreed to enter into one or more contracts to purchase voluntary carbon credits issued by a recognized and reputable carbon registry in an amount sufficient to offset the construction emissions and submit copies of executed contracts for purchased carbon credits to CARB and the Governor's Office.

Table 1: Project Construction-Generated GHG Emissions[1]

Construction Year	GHG Emissions (MT CO_2e/year)
2019	1,262
2020	1,678
2021	2,666
2022	1,507
Total	7,113
GHG Credits Required[2]	**7,113**

Notes:
GHG = greenhouse gas; MT CO_2e = Metric tons carbon dioxide equivalent;
[1] Source: as documented in Attachment 2, and confirmed by CARB staff.
[2] Applicant committed to purchase carbon credits in an amount sufficient to offset net increase in construction-related GHG emissions. The project would obtain offsets using the following prioritization: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry.

Table 2 summarizes the net increase in project operation related GHG emissions during a 30-year analysis horizon. The continued operation of the existing land uses that would be demolished under the proposed project serves as the reference point for the purpose of defining a baseline. The Applicant has committed to execute contracts to offset the net increase in GHG emissions generated during project operation for any building in the project prior to issuance of any Certificate of Occupancy for that building. The Applicant will purchase voluntary carbon credits for the net increase in operational emissions on a net-present value basis. The Applicant has agreed to submit copies of executed contracts for purchased carbon credits to CARB and the Governor's Office. The commitment to enter into contracts to offset net additional GHG emissions will be a condition of project approval.

Table 2: Comparison of Baseline and Project Operation-Related GHG Emissions[1]

Year[2]	GHG Emissions (MT CO_2e/year)			
	Baseline	Proposed Project	Difference	GHG Credits Required[3]
2022	468	4,133	3,665	3,665
2023	468	9,681	9,213	9,213
2024	468	9,296	8,828	8,828
2025	468	9,096	8,628	8,628
2026	468	8,928	8,460	8,460
2027	468	8,622	8,154	8,154
2028	468	8,492	8,024	8,024
2029	468	8,378	7,910	7,910
2030	468	8,127	7,659	7,659
2031	468	8,045	7,577	7,577
2032	468	7,970	7,502	7,502
2033	468	7,904	7,436	7,436
2034	468	7,849	7,381	7,381
2035	468	7,804	7,336	7,336
2036	468	7,771	7,303	7,303
2037	468	7,743	7,275	7,275
2038	468	7,722	7,254	7,254
2039	468	7,707	7,239	7,239
2040	468	7,696	7,228	7,228
2041	468	7,688	7,220	7,220
2042	468	7,684	7,216	7,216
2043	468	7,688	7,220	7,220
2044	468	7,688	7,220	7,220
2045	468	7,690	7,222	7,222
2046	468	7,695	7,227	7,227
2047	468	7,700	7,232	7,232
2048	468	7,707	7,239	7,239
2049	468	7,715	7,247	7,247
2050	468	7,725	7,257	7,257
2051	468	7,725	7,257	7,257
2052	468	7,725	7,257	7,257
Total				**230,886**

Notes: GHG = greenhouse gas; MT CO_2e = Metric tons carbon dioxide equivalent.
[1] Source: as documented in Attachment 2, and confirmed by CARB staff.

[2] Applicant uses an analysis horizon of 30 years, with first year of occupancy as early as August 2022. Therefore 2023 represents the first full year of operation.

[3] Applicant commits to purchase carbon credits in an amount sufficient to offset net increase in operation-related GHG emissions. The project would obtain offsets using the following prioritization: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry.

III. Overview of AB 900

AB 900, as amended by SB 743 (2013) and SB 734 (2016) provides streamlined judicial review for development projects if, among other conditions, the "project does not result in any net additional emissions of greenhouse gases, including greenhouse gas emissions from employee transportation, as determined by the State Air Resources Board pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code." (Pub. Resources Code, §21183, subd. (c).)

The Governor's Guidelines for AB 900 applications require Applicants to submit a proposed methodology for quantifying the project's GHG emissions and documentation that the project will not result in any net additional GHG emissions. The documentation must quantify direct and indirect GHG emissions associated with the project's construction and operation, including GHG emissions from employee transportation, and the net emissions of the project after accounting for any mitigation measures. The project's net emissions, after mitigation, must be monitored and enforced consistent with Public Resources Code section 21183, subdivision (e).

The role of CARB in reviewing AB 900 applications for purposes of the Governor's certification is limited to an evaluation of the quantification methods and documentation submitted by the Applicant to determine whether the project would result in no net additional emissions of GHG emissions. CARB staff evaluated the technical elements of the project application, including existing emissions in the absence of the project (i.e., baseline), input data and assumptions used for emissions and mitigation calculations, quantification methods, and an estimate of the project's net GHG emissions after any mitigation.

IV. Existing Conditions

The proposed project site is located at 1045 S. Olive Street in Downtown Los Angeles. The approximately 0.96-acre site occupies a parcel on the southeast corner of the block bounded by 11th Street to the southwest and S. Olive Street to the southeast. The property currently contains four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. Existing active land uses include 14,653 square feet of manufacturing space and 5,171 square feet of retail space. The remaining 15,827 square feet is currently vacant. The buildings were originally constructed between about the 1910s to the 1950s.

V. Proposed Project Description

The Project Site is located in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project would remove four existing commercial buildings on the Project Site, and would construct in their place an approximately 751,777 square foot mixed-use high-rise building containing residential condominium units and commercial use spaces along Olive Street and 11th Street. The Project would also include approximately 10,652 square feet of open space. The maximum building height would be 810 feet (approximately 70 stories), and the floor area ratio (FAR) for the transit area mixed use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure for a total of 70 floors, up to 810 feet in height. The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. The residential units would be mostly located within the residential tower; however, approximately 40 units, would be located along the top five levels of the Podium facing Olive Street and 11th Street. Approximately 103,380 square feet of amenity/open space would be provided, including a ground level public plaza with streetscaping, landscaping and a public art display. Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop and within private balconies. At the pedestrian level, the Project would provide a 17- foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing GHG emissions, this assessment conservatively assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle

parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover at the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

Construction of the Project would be completed over an approximately 3.5-year period. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

The baseline and proposed land uses are summarized in Table 3.

Table 3: Baseline and Proposed Land Uses

Land Use Type	Baseline Land Uses to be Demolished	Proposed Land Uses
Residential/Apartments	-	739,273 sf (794 dwelling units)
Retail	5,171 sf	-
Commercial (Restaurant)	-	12,504 sf
Manufacturing	14,653 sf	-
Amenities (Exterior)	-	37,927 sf
Amenities (Interior)	-	23,025 sf
Private Balcony Space	-	39,700 sf
Public Plaza Area	-	2,728 sf
Parking	5,952 sf	426,458 sf (891 spaces)
Vacant	15,827 sf	-

Notes:
du = dwelling units, sf = square feet
Source: as documented in Attachment 2, and confirmed by CARB staff.

VI. Technical Review and Assessment

ESA, on behalf of the Applicant, prepared a GHG emissions assessment for the proposed project to demonstrate that the requirements of AB 900 can be met. A full copy of this proposal can be found in Attachment 2.

The Applicant relied upon a variety of sources for activity data and emission factors to quantify GHG emissions. This CARB staff evaluation is focused on reviewing the data sources, emission factors, emission calculations, and assumptions used for the application, and determining whether these sources and assumptions are reasonable.

The Applicant relied upon Version 2016.3.2 of the California Emissions Estimator Model (CalEEMod), a widely-used emissions quantification tool developed in coordination with local air districts to quantify criteria pollutant and GHG emissions from land use development projects in California. CalEEMod uses widely-accepted sources for emission estimates combined with appropriate default data that can be used if site-specific information is not available. CalEEMod is populated with data from the United States Environmental Protection Agency AP-42 emission factors, CARB's on-road and off-road equipment emission models such as the Emission Factor 2014 model (EMFAC2014), and the Off-road Emissions Inventory Program model (OFFROAD). The Applicant used the latest CalEEMod version including correction factors to account for compliance with the 2016 Title 24 Building Standards Code, in combination with project-specific data and CARB's EMFAC 2014 mobile-source emission factors, to calculate GHG emissions from construction and operational emissions.

VII. Project Construction Emissions

Construction-related GHG emissions, including demolition-related emissions, are one-time, direct emissions and would occur over an approximately 3.5 year construction period. The Applicant estimated GHG emissions associated with project construction by using the CalEEMod tool. With some exceptions, the Applicant used CalEEMod default settings to generate construction-related GHG emissions. The Applicant estimates a total of 7,113 metric tons carbon dioxide equivalent (MT CO_2e) over the project construction period, as shown in Table 1. Construction-related GHG emissions reflect the types of equipment expected and the number of hours of operation anticipated over the construction schedule. This includes heavy-duty equipment, such as refuse hauling trucks, excavators, cranes, and conventional work vehicles.

CARB staff concluded that the methodology and estimated GHG emissions provided by the Applicant for construction are appropriate.

VIII. Baseline Operational Emissions

Operational emissions from land uses at the existing project site that would be demolished and removed as part of the project represent baseline conditions. Operational emissions in year 2018 serves as the baseline for purposes of this analysis, which represents existing conditions the year before demolition and construction for the project. GHG emissions were quantified for mobile, electricity, natural gas, area, solid waste, water, and wastewater-related sources. The application states that GHG emissions associated with existing conditions in 2018 are estimated as 468 MT CO_2e.

CARB staff evaluated the Applicant's GHG emission estimations, demand factors, and assumptions used in the Applicant's baseline calculations, summarized in Table 2. CARB staff concluded that the methodology and estimated baseline GHG emissions provided by the Applicant are appropriate.

IX. Proposed Project Operational Emissions

Operational GHG emission sources from the proposed project include mobile, electricity, natural gas, area, stationary, solid waste, water, and wastewater sources. Operational GHG emissions from the proposed project were assumed to begin in August 2022.

The Project will achieve the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below:

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative- fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

Although the Project resides within the Los Angeles Department of Water and Power (LADWP) domain, the Applicant has chosen to use the option of a statewide electricity factor. Therefore, consistent with CARB guidance on statewide electricity emission factors for use with AB 900 projects, a CO_2 emission factor of 595 pounds of CO_2 per MWh was used for electricity emissions for Project operational year 2023. This emission factor reflects a 2020 power grid in compliance with the 33 percent Renewable Portfolio Standard. Future year CO_2 emission factors were scaled proportionately based on the future year renewable energy targets of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Emission factors for CH4 and N2O were obtained from CalEEMod.

Mobile-source emissions were derived from estimates of vehicle miles traveled (VMT) induced by the Project, assumed fleet mix of the vehicles involved and associated emissions factors. The estimated VMT based on each land use were determined using CalEEMod. This VMT estimate was then reduced based on the AB 900 Traffic Assessment prepared by the Mobility Group. A summary of key characteristics resulting in VMT reductions from the default CalEEMod estimates are provided below:

- Internal Capture Reduction: The Project's restaurant space would provide a convenient local destination for the residential element of the Project without having to drive to other locations. It was estimated that a reduction of 15 percent of the trips to and from the restaurant space would come from the on-site residential element of the Project.

- Transit and Walk/Bike Reduction: The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. Therefore, it was estimated that vehicle trips would be reduced by 20 percent due to transit and walk/bike trips, consistent with Los Angeles Department of Transportation (LADOT) guidelines and methodology.

- Transportation Demand Management (TDM) Reduction: The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.

- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package - to all new residents/employees with information on alternate modes and walk destination opportunities.
- Unbundling of residential parking
- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
- Discounts for employees who utilize public transit to travel to site.
- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers/showers for residents and employees, etc.
- Participate in the City's Bike Share Program by providing an area for bike share facilities.

The implementation of the TDM package would result in an estimated reduction of 10 percent of the vehicle trips to and from the residential element of the Proposed Project.

- Pass-by Trip Reduction: The Project's commercial restaurant space would provide a convenient local destination for residents in the local neighborhood without having to drive to other locations. It was estimated that a reduction of 20 percent of trips to and from the restaurant space would result from pass-by customers.

This assessment uses the South Coast Air Basin motor vehicle fleet mix and the fleet average calendar year emissions factors from EMFAC2014 to estimate mobile source GHG emissions.

CalEEMod default emission factors and calculation methods were also used to estimate GHG emissions from natural gas, incorporating the above mentioned reductions in energy use from the USGBC LEED Gold Certification.

Emissions from solid waste disposal used the CalEEMod model with allowed outside inputs for waste disposal and diversion rates obtained from the City of Los Angeles and CalRecycle.

Emissions from water consumption used CalEEMod defaults with additional reductions in water usage incorporated from the USGBC LEED Gold Certification detailed above. The electricity usage related to water supply, treatment, distribution and wastewater treatment used the same statewide emission factors for electricity as were used for on-site electricity calculations.

Emissions from area sources, including equipment used to maintain landscaping, such as lawnmowers and trimmers, were estimated using CalEEMod defaults. The only additional stationary source of emissions is an on-site emergency generator with an estimated capacity rated at approximately 708 kilowatts (950 horsepower), which would provide emergency power primarily for lighting and other emergency building systems. Emissions of GHGs would be generated during maintenance and testing operations and emissions were estimated separately outside of the CalEEMod software using U.S. Environmental Protection Agency (U.S. EPA) emission factors and CalEEMod load factors. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines). Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470.

Carbon sequestration was estimated using CalEEMod. The Project's net addition of 137 canopy trees and just over 0.2 acres of native plants, shrubs, perennials, and ground-cover are estimated to sequester 98 metric tons of CO_2 over their active growing period of 20 years (or about 5 metric tons of CO_2 per year for the first 20 years of the Project's operation). The effects of carbon sequestration from canopy trees assumes the Intergovernmental Panel on Climate Change (IPCC) active growing period of 20 years. Accumulation of carbon in biomass decreases as the trees age and would eventually be offset by clipping, pruning, and tree death. Therefore, GHG reductions from carbon sequestration are only applied to the first 20 years of the project's operation.

The Applicant's assumptions and inputs are reasonably conservative, and represent an upper-bound for the net increase in GHG emissions that could occur. CARB staff evaluated the proposed project's emission calculations, demand factors, and assumptions used to estimate operational GHG emissions and concluded that the methodology and estimated operational GHG emissions provided by the Applicant are appropriate.

Based on the Applicant's proposal, annual project operational emissions would exceed baseline throughout the lifetime of the project, as summarized in Table 2.

X. Method to Offset Emissions

Under the GHG quantification methodology used by the Applicant, the proposed project would result in a one-time net GHG emissions increase of 7,113 MT CO_2e during project construction, and an estimated net increase of 9,681 MT CO_2e during the first year of full project operation (2023).

Operational emissions would be on-going for project analysis horizon (defined as 30 years), and would be expected to decline over the life of the project as emission factors decline associated with adoption of lower-GHG-emitting vehicle technologies and renewable sources of electricity. The Applicant has agreed to meet the requirement set forth in California Public Resources Code section 21183, subdivision (c) to demonstrate that the proposed project would result in no net additional GHG emissions through the purchase of credible voluntary carbon credits issued by a recognized and reputable carbon registry sufficient to offset all projected additional GHG emissions, as detailed in Attachment 2. The project would obtain offsets using the following prioritization: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry, consistent with policy recommendations included in CARB's Proposed 2017 Climate Change Scoping Plan Update. The Applicant will purchase credible voluntary carbon credits issued by a recognized and reputable carbon registry for the net increase in construction and operational emissions prior to issuance of any Certificate of Occupancy for the project. The commitments to enter into contracts to offset net additional GHG emissions will be incorporated as condition of project approval. The Applicant has agreed to submit copies of executed contracts for purchased carbon credits to CARB and the Governor's Office as evidence that this condition has been met.

XI. Conclusions and Recommendations

Based on an evaluation of the documentation provided by the Applicant and its commitment to purchase voluntary carbon credits, CARB staff concludes that the proposed project would not result in any net additional GHG emissions relative to the baseline.

8. Greenhouse Gas Emissions Methodology Documentation

ATTACHMENT 2

Greenhouse Gas Emissions Methodology Documentation for Environmental Leadership Development Project Application

1045 Olive Street Project

(Submitted December 22, 2017)

ESA

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www.esassoc.com

memorandum

date August 25, 2017

to Lezlie Kimura Szeto, Sustainable Communities Policy & Planning Section, CARB

cc

from Heidi Rous, CPP, ESA
Alan Sako, LEED AP BD+C, ESA

subject **Procedure for Evaluating Greenhouse Gas Emissions Under the "Jobs And Economic Improvement Through Environmental Leadership Act" for the 1045 Olive Street Project**

1.0 Introduction

1.1 Purpose

ESA is conducting a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project (the "Project"), proposed by 1045 Olive, LLC, to demonstrate that the Project meets the GHG requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.). The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate to the California Air Resources Board (CARB) that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). The GHG emissions associated with construction of the Project are also to be considered in the analysis.

This submittal describes the proposed methodology used to estimate the GHG emissions from baseline and Project conditions and describes the proposed methodology used to quantify GHG emission reductions from Project design features and mitigation measures.

1.2 Site Location, Existing Uses, and Project Description

The Project is located at 1045 Olive Street in the South Park community of Downtown Los Angeles ("the Project Site"), approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110). The approximately 0.96-acre Project site is at the northwest corner of the intersection of Olive Street and 11th Street. An alleyway is located on the northwest side of the Project Site.

The Project would remove four existing commercial buildings on the Project Site, and would construct in their place an approximately 751,777 square foot (approximately 1,343,113 square foot gross building floor area inclusive of common space and open space areas) mixed-use high-rise building containing a maximum of 794 residential condominium units and 12,504 square feet of ground- and mezzanine-level neighborhood serving commercial uses along Olive Street and 11th Street. The Project would also include approximately 10,652 square feet of open space. The maximum building height would be 810 feet (approximately 70 stories), and the floor-area ratio (FAR) for the transit area mixed use Project would be 13:1.

Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements and is proposed to be located within 5 subterranean levels and 9 levels above grade. Residential units are proposed to wrap the podium along 11th Street and Olive Street on levels 5 through 9. The podium level (10th floor) would contain residential amenities. Residential units are proposed to be located on levels 11 through 51 and 56 through 70. Level 52 would contain mechanical equipment. Levels 53 through 55 would have residential amenity areas, including outdoor space.

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line and one entrance on the alley, near the north property line. An on-site loading and move-in/out service area would also be accessed from the alley near the middle of the Project Site. The Project would provide up to 891 parking spaces, with 878 spaces dedicated to residential parking and 13 spaces provided for commercial uses. Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 800 long-term spaces provided within the parking garage on ground level, mezzanine and one level below grade. An additional maximum of 85 short-term bicycle parking spaces would be provided consistent with LAMC Section 12.21.A.16.

Construction of the Project would be completed over approximately 3.5 years. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

2.0 Proposed Procedure for Evaluating GHG Emissions

2.1 Construction

The Project would demolish and remove the existing structures and associated infrastructure from the Project site. The existing uses will be vacated prior to construction and all uses would cease to operate. Construction of the Project would result in one-time GHG emissions during the period of construction activity. Construction of the Project would be completed over approximately 3.5 years and emissions would be estimated for each year of construction. After construction is completed, the Project would become operational. ESA will assume that all new Project facilities will be fully operational on the expected opening day. Therefore, Project construction emissions would not occur contemporaneously with either baseline operational emissions or Project operational emissions.

Consistent with the procedure used for other similar types of certified Environmental Leadership Development Projects (ELDP), such as the Yucca Argyle project, the approach to determine if Project construction would result in net additional GHG emissions would be to consider the Project construction emissions on an annual, calendar year, basis as net new emissions occurring during the Project's construction phase. The Project's construction GHG emissions would be required to be offset in full to meet the requirement of a net zero increase in GHG

emissions. Based on the currently anticipated construction schedule, the final months of construction may occur in the same calendar year as the initial operational year of the Project. The GHG emissions associated with these final months of construction would be added to the Project's initial partial-year operational GHG emissions and the total compared to the baseline annual operational emissions.

Construction emissions will be estimated by assuming a conservative approach to construction activities (i.e., assuming construction occurs at the earliest feasible date) and applying the equipment emissions factors. The emissions will be estimated using the most recent version of the California Emissions Estimator Model (CalEEMod) (Version 2016.3.1) software, an emissions inventory software program developed by the California Air Pollution Control Officers Association (CAPCOA) in conjunction with California air quality management districts and air pollution control districts. The local South Coast Air Quality Management District (SCAQMD) recommends the use of CalEEMod for estimating emissions from land use development projects. CalEEMod is based on outputs from OFFROAD and EMFAC, which are emissions estimation models developed by the California Air Resources Board (CARB) and used to calculate emissions from construction activities, including off- and on-road vehicles. The CalEEMod software will be programmed with Project-specific information such as equipment types expected to be used and the Project construction schedule.

The construction emissions estimates may be supplemented by the EMFAC2014 on-road emissions factor model for on-road trucks. While CalEEMod incorporates the EMFAC2014 model and can provide emissions estimates for on-road trucks, EMFAC2014 may be used directly to provide a more detailed analysis if necessary to account for changes in daily truck trips during the various phases of construction activities. If EMFAC2014 is used, emission factors will be generated using the emissions mode (also referred to as the "burden" mode) to generate South Coast Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile, which is the same methodology that CalEEMod uses to generate emission factors.

All construction emissions modeling output files used in the analysis will be incorporated into the GHG Report and submitted to CARB for review.

2.2 Operations

Operation of the existing uses and proposed Project uses results in annual GHG emissions from mobile sources, building energy use, water demand and wastewater treatment, and solid waste generation. The Project's annual, calendar year, operational emissions will be compared to the baseline annual operational GHG emissions to determine the net change in GHG emissions. Emissions will be estimated for a 30-year land use Project lifetime.

Operational emissions will be estimated using the CalEEMod (Version 2016.3.1) software. The emissions estimates may be supplemented by the EMFAC2014 on-road emissions factor model for on-road vehicles. For mobile sources, annual vehicle miles traveled (VMT) from the existing uses and proposed Project uses will be based on trip and VMT data in the traffic report that will be prepared by The Mobility Group. The estimated VMT for the existing uses and proposed Project uses will take into account trip distance reductions from land use characteristics including the existing Project site's infill location and proximity to existing multi-modal public transit services. The estimated reduction in VMT will be supported by evidence from the City of Los Angeles. The City has conducted a comprehensive health study that describes the baseline health conditions in the City and provides a context for understanding the demographic conditions, social and economic factors, physical environment, access to health care, and health behaviors contributing to the health of City residents and workers. The findings are documented in the *Health Atlas for the City of Los Angeles* (Health Atlas), published in June

2013.[1] The Health Atlas is not a plan specifically developed to reduce GHG emissions. Nonetheless, while the primary focus of the Health Atlas is on factors that affect the health behaviors and health status of residents and workers, much of the quantitative data is relevant to a project area's VMT and land use-related GHG emissions as they reflect similar issues regarding land use patterns, urban design, and transportation efficiency. If EMFAC2014 is used, emission factors will be obtained from EMFAC2014, using the same methodology that CalEEMod used to generate emission factors, as described previously under the construction heading. Mobile source emissions are the product of the CalEEMod estimated VMT and the EMFAC2014 emission factors.

Emissions of GHGs from on-site natural gas combustion and off-site electricity generation will be estimated using CalEEMod, which are based on usage data from the CEC's California Commercial End Use Survey (CEUS). Since 1978, the CEC has established building energy efficiency standards, which are updated periodically. CalEEMod applies correction factors to account for compliance with the 2013 version of the Title 24 Building Energy Efficiency Standards. The existing buildings were built prior to the 2008 standards; therefore, electricity and natural gas usage rates will be adjusted to account for compliance with prior Title 24 Building Energy Efficiency Standards. The proposed Project uses would be built to comply with the latest standards; therefore, electricity and natural gas usage rates will be adjusted to account for compliance with the latest 2016 Title 24 Building Energy Efficiency Standards, inclusive of additional energy saving features that would be included in the Project to reduce energy demand. Emission factors for GHGs due to electrical generation to serve the demands of the existing Project Site will be based on the CARB supplied emissions factors in its January 2017 memorandum, *Statewide Emission Factors For Use With AB 900 Projects*. This memorandum provides factors consistent with the "marginal" supply profile for new generation that will be added to the State grid consistent with the year 2020 Renewables Portfolio Standard (RPS). State legislation signed into law in October 2015 further increased the Renewables Portfolio Standard to 50 percent by 2030 and also included interim targets of 40 percent by 2024 and 45 percent by 2027. Future year factors will be reduced proportionately based on these mandated legislative targets.

Emissions of GHGs from solid waste disposal will be calculated using the CalEEMod software based on the solid waste generation rates for the existing uses and the proposed Project uses. The solid waste GHG emissions will take into account the City of Los Angeles municipal solid waste diversion rates.

Emissions of GHGs from water and wastewater are due to the energy required to supply, distribute and treat. Wastewater also results in emissions of GHGs from wastewater treatment systems. Emissions will be calculated using the CalEEMod software based on the water demand rates for the existing uses and the proposed Project uses inclusive of green building features that would be incorporated into the Project to reduce water demand.

Other sources of GHG emissions from existing uses include equipment used to maintain landscaping, such as lawnmowers and trimmers. The CalEEMod software uses landscaping equipment GHG emission factors from the CARB OFFROAD model and the *CARB Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*. The CalEEMod software estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin.

[1] City of Los Angeles, The Health Atlas, (2013), http://healthyplan.la/the-health-atlas/. Accessed January 2017.

2.3 Emission Mitigation Measures and Offsets

Annual emissions of GHGs from the Project will incorporate GHG emission mitigation measures, and offsets as necessary to achieve a net zero increase in site GHG emissions for the estimated Project lifetime. Mitigation measures may include rooftop solar projects or other community-based measures. Although not required by regulation, it is understood that it is CARB policy to prioritize offsets in the following order: local, regional, in-state, and lastly out-of-state/out-of-country. The Project will prioritize offsets based on CARB's prioritization order.

February 14, 2018

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: Greenhouse Gas Emissions Offset Approach for the 1045 Olive Project

Dear Ms. Huang:

This letter is provided as a supplement to the application filed by 1045 Olive, LLC. (the "Project Applicant"), who proposes to develop the 1045 Olive Project (the "Project") in the Central City Community Plan and the City Center Redevelopment Plan Project area of the City of Los Angeles.

As you know, the Project Applicant has applied for certification by the Governor as a leadership project under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (collectively, "AB 900" or the "Act"). The application includes projected emissions for the Project that show certain projected net additional emissions of greenhouse gases (GHG) as a result of the construction of the Project and as a consequence of Project operations.

The Applicant has committed to no net increase in construction and operation-related GHG emissions. Consistent with policy recommendations included in California Air Resources Board's (CARB) California 2017 Climate Change Scoping Plan,[1] while offsets are a potential way to mitigate GHG emissions, other options will continue to be explored as well to the extent feasible, with the following order of preference: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry. To the extent offsets are used to mitigate GHG emissions, prior to issuance or any Certificate of Occupancy for any building in the project, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits issued by a recognized and reputable carbon registry, which contract, together with any previous contracts, shall evidence the purchase of carbon credits in an amount sufficient to offset the operational emissions attributable to each building constructed within the project over the analysis horizon of 30 years. Prior to execution of the contract(s), the Applicant shall provide the lead agency (the City of Los Angeles) a calculation of the net additional operational GHG emissions according to the methodology followed in the

[1] The California 2017 Climate Change Scoping Plan is available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Greenhouse Gas Emissions Methodology and Documentation for the 1045 Olive Street Project document. The Applicant shall agree to promptly submit copies of executed contracts for purchased carbon credits to CARB and to the Governor's office. The commitments to enter into contracts to offset net additional GHG emissions will be incorporated as a condition of project approval under the Public Resources Code sec. 21183(e), which is binding and enforceable by the lead agency.

The Project Applicant proposes to meet the requirement set forth in California Public Resources Code Section 21183(c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through the implementation of GHG-reducing Project Design Features and/or acquisition of voluntary carbon credits sufficient to offset all projected additional emissions, in the following manner:

1. No later than six (6) months after the issuance of a Temporary Certificate of Occupancy for the Project, the Project Applicant shall commit to providing to the lead agency, the City of Los Angeles, a calculation of the net additional emissions resulting from the construction of the Project (the "Construction Emissions"), to be calculated in accordance with the methodology agreed upon by the California Air Resources Board (CARB) in connection with the AB 900 certification of the Project (the "Agreed Methodology"). Project Applicant shall provide courtesy copies of the calculations to CARB and the Governor's Office promptly following transmittal of the calculations to the City of Los Angeles. Project Applicant shall enter into one or more contracts for the implementation of GHG-reducing Project Design Features and/or purchase voluntary carbon credits from a recognized and reputable carbon registry in an amount sufficient to offset the Construction Emissions. The Project Applicant shall provide courtesy copies of any such contracts to CARB and the Governor's Office promptly following the execution of such contracts.

2. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall commit to entering into one or more contracts to purchase carbon credits from a recognized and reputable carbon registry (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

   Prior to execution of the contract(s), the Applicant and its consultant shall calculate the Operational Emissions, in accordance with the methodology described in the Applicant's "Application for Environmental Leadership Development Project," specifically the "Greenhouse Gas Emissions Methodology and Documentation" prepared by Environmental Science Associates (ESA).

   Once the City has had an opportunity to review and approve the methodology and associated calculations, the Applicant shall provide copies of the calculation methodology to the California Air Resources Board (CARB) and Governor's Office of Planning and Research (OPR), which is then subject to a determination signed by the Executive Officer

of CARB pursuant to the procedures set forth in Section 6 of OPR's Guidelines. The City will issue a Certificate of Occupancy upon receipt of the following: (1) a fully executed copy of the carbon offset purchase agreement(s); (2) a final CARB Determination that the Project will not result in any net additional GHG emissions; and (3) a copy of OPR's Certification Letter for the Project.

3. The following project design features were accounted for in the AB 900 application for purposes of reducing GHG emissions and are, therefore, included as commitments in this letter.

   A. The design of the new buildings shall incorporate features to be capable of achieving Gold certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)-CS® or LEED-NC® Rating System as of January 1, 2011. Specific sustainability features that are integrated into the Project design to enable the Project to achieve at least LEED® Gold certification would include but not be limited to the following:

      a. The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.

      b. The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

      c. The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.

      d. The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

      e. The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.

      f. The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

   B. The residential units within the Project shall not include the use of natural gas-fueled fireplaces.

The commitments outlined herein will be incorporated into the Project's Final Environmental Impact Report (FEIR) as a proposed improvement measure. The Project Applicant will agree to comply with all improvement measures and mitigation measures

contained in the FEIR through the Project's Mitigation Monitoring and Reporting Program, which represents a binding and enforceable agreement with the Project's lead agency, the City of Los Angeles.

Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Adam Tartakovsky
Its: Authorized Signatory

cc: Alejandro Huerta, City Planner, City of Los Angeles, Department of City Planning
Ryan Leaderman, Partner, DLA Piper LLP
Heidi Rous, Air Quality and Noise Group Director, ESA

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

1045 Olive Project

LEED Measures

The following list highlights the main sustainability strategies to be implemented into the 1045 Olive Project in order to achieve Gold certification or greater under LEED v3 or the LEED v4 rating system, as applicable. This is in addition to the strategies needed to reduce the greenhouse gas (GHG) emissions, as required by the California Air Resources Board (CARB).

Design

- Prior to Project approvals, a preliminary LEED action plan will be submitted to the City of Los Angeles Department of City Planning. Prior to issuance of a building permit, conduct a preliminary LEED meeting with a minimum of four key Project team members and the owner or owner's representative. As part of the meeting, review a LEED action plan that, at a minimum (1) determines the LEED certification level to pursue (Gold or Platinum); (2) selects the LEED credits to meet the targeted certification level; and (3) identifies the responsible parties, including but not limited to the Los Angeles Department of Building and Safety, the City of Los Angeles Department of City Planning, the City of Los Angeles Department of Public Works, Bureau of Engineering, to ensure the LEED requirements for each prerequisite and selected credit are met. Modifications to the selected criteria are permissible during construction as long as the targeted LEED certification level continues to be met.

Site

- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

Transportation

- The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to the site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

Water Quality

- Use of on-site storm water treatment in accordance with City standards.
- Installation of catch basin inserts and screens to provide runoff contaminant removal in accordance with City standards.
- Preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plan (SUSMP), both of which would include Best Management Practices (BMPs) to control stormwater runoff, minimize pollutant loading and erosion effects during and after construction.

Energy Conservation and Efficiency

- Use of full-cutoff or fully shielded on-street lighting oriented to pedestrian areas/sidewalks so as to minimize overlighting, light trespass, and glare.
- Inclusion of outdoor air flow measuring devices, additional outdoor air ventilation, and use of low emitting materials to promote indoor environmental quality.
- Use of refrigerants that reduce ozone depletion.
- Provision of conduit that is appropriate for future photovoltaic and solar thermal collectors.
- Post-construction commissioning of building energy systems performed on an ongoing basis to ensure all systems are running at optimal efficiency.
- Purchase of renewable source power (“green power”) or implementation of other carbon offset programs or carbon offset purchases to minimize carbon emissions.
- Review of commissioning activities by an independent Commissioning Agency and development and implementation of commissioning plan.
- Implementation of building level energy meter to provide monthly tracking of energy consumption.
- Provision of metering for tenant space.

Solid Waste

- Provision of on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied.

- Implementation of a construction waste management plan to recycle and/or salvage a minimum of 65 percent of nonhazardous construction debris.

- Diversion of construction materials from landfill. Diversion must include at least three material streams (e.g., recovery, reuse, and recycling).

Air Quality

- Employment of practices that prohibit the use of chlorofluorocarbons (CFCs) in heating, ventilation, and air conditioning (HVAC) systems.

- Installation of MERV 11 filtration at outside air intakes to improve indoor air quality (per LEED minimum indoor air quality performance requirements).

- Meeting applicable California and/or Los Angeles air emissions requirements for all heating or cogeneration equipment utilized at the Project Site.

- Installation of landscaping and canopy trees throughout the Project Site, including roof decks, pool decks, and terraces, to provide shading and capture carbon dioxide (CO_2) emissions.

- Use of adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air pollutants.

- Development of an Indoor Air Quality Management Plan for construction and pre-occupancy phases.

- Provision of individual control on thermostats to 50 percent of building occupants. For residential buildings, the credit can be achieved by providing access to operable windows. For commercial spaces, control must be provided to 50 percent of occupants in order to meet the intent of the credit.

- HVAC system design compliance to ASHRAE 55. The Core & Shell base building mechanical systems must allow for the tenant build-out to meet the requirement of this credit.

GREENHOUSE GAS EMISSIONS METHODOLOGY AND DOCUMENTATION FOR THE 1045 OLIVE STREET PROJECT

Application for CEQA Streamlining Under the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.)

Prepared for
1045 Olive LLC

December 2017

ESA

GREENHOUSE GAS EMISSIONS METHODOLOGY AND DOCUMENTATION FOR THE 1045 OLIVE STREET PROJECT

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OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

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SECTION 1
Executive Summary

ESA has been retained to conduct a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project ("the Project") and to demonstrate that the Project meets the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.), also referred to as Assembly Bill (AB) 900. In September 2011, the Governor signed the Act, which required the Governor to establish procedures for applying for streamlined environmental review under the California Environmental Quality Act (CEQA) for projects that meet certain requirements. In 2016, Senate Bill (SB) 734 was signed, which extends the authority of the Governor to certify a project to January 1, 2018 and provides that the certification expires and is no longer valid if the lead agency fails to approve a certified project before January 1, 2019. In October 2017, AB 246 was signed, which further extends the authority of the Governor to certify a project to January 1, 2020 and provides that the certification expires and is no longer valid if the lead agency fails to approve a certified project before January 1, 2021. The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c).

The Project is located at 1045 S. Olive Street in Downtown Los Angeles, California. The approximately 0.96-acre site occupies a parcel on the southeast corner of the block bounded by 11th Street to the southwest and S. Olive Street to the southeast ("the Project Site"). The property currently contains four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. The Project would demolish and remove the existing uses from the site.

The proposed mix of uses would be developed within one building with a podium structure. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[1] The mixed-use high-rise building will contain a mix of residential and commercial uses. The Project would include 739,273 square feet of residential uses (zoning area) with 794 residential units, and 12,504 square feet of commercial uses accessible at the ground level. Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements and is proposed to be located within a parking structure with 6 subterranean levels and 8 partial levels above grade (as certain above grade levels will contain

[1] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

residential units and other active uses along the 11th and Olive Street frontages) with a total of 891 spaces (878 residential and 13 commercial). Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 886 bicycle spaces provided within the parking garage on ground level, mezzanine and one level below grade.

Under the Baseline Condition, which is defined as the year 2017 existing site operating conditions, the site generates approximately 603 metric tons of carbon dioxide equivalents ($MTCO_2e$) per year. This excludes any one-time construction GHG emissions that were generated when the existing uses and related infrastructure were originally built. Construction of the Project would generate one-time GHG emissions of approximately 1,121 $MTCO_2e$, during the first year, 1,748 $MTCO_2e$ during the second year, 2,795 $MTCO_2e$ during the third year and 1,573 $MTCO_2e$ during the 4th year. At Project buildout, emissions of approximately 9,968 $MTCO_2e$ would be generated during the first full year of operation. Compared to the Baseline Condition, the Project's operational GHG emissions represent a net increase in GHG emissions from the site of approximately 5,563 $MTCO_2e$ during the first full year of operation. The net Project operational GHG emissions would decline in future years primarily as a result of vehicle fleet turnover and as utilities provide a greater percentage of electricity from renewable sources. Future year emissions would decline as a greater percentage of motor vehicles meet more stringent emissions standards, including the Pavley Phase I and Phase II emissions standards,[2] and the a greater percentage of electricity is provided by renewable sources in accordance with the Renewables Portfolio Standard, which requires 50 percent renewable electricity by 2030.[3] The Project would obtain GHG offsets that would result in the Project to having no net increase in GHG emissions. As a result, the Project would generate decreased GHG emissions in future years and would require decreased offsets to achieve no net increase in GHG emissions.

Based on this assessment, the Project would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). Therefore, the Project would meet the GHG emissions requirements for streamlined environmental review under CEQA.

2 Assembly Bill 1493 (Pavley Regulations) reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.

3 On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 was signed into law on October 7, 2015.

SECTION 2
Introduction

2.1 Purpose

ESA has been retained to conduct a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project ("the Project") and to demonstrate that the Project meets the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.). This assessment describes the methodology used to estimate the GHG emissions from baseline and Project conditions, provides an estimate of the net change in GHG emissions for the Project as compared to baseline conditions, and describes the methodology used to quantify GHG emission reductions from Project design features and mitigation measures. The following baseline and Project-related emission sources have been evaluated:

- Construction Activities – Fossil fueled on- and off-road vehicles and equipment needed for demolition, mass and fine grading, building construction, paving, and architectural coating;
- Direct Emission Sources – Consumption of natural gas on-site for cooking, space heating and water heating, combustion of fossil fuels for lawn care and maintenance activities, and motor vehicles including employee transportation; and
- Indirect Emission Sources – Off-site electricity generation, wastewater treatment and water conveyance, and solid waste disposal.

2.2 Project Description, Site Location, Existing Uses

1045 Olive, LLC (Applicant) proposes a new mixed-use development on an approximately 0.96-acre site located at 1045 S. Olive Street on the northwest corner of Olive Street and 11th Street ("the Project Site"). Four existing single story commercial buildings would be removed and replaced with a new 751,777 square foot (net) mixed-use high-rise building. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[4] The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. The residential units would be mostly located within the residential tower; however, approximately 40 units, would be located along the top five levels of the Podium facing

[4] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

Olive Street and 11th Street. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing GHG emissions, this assessment conservatively assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.[5]

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover at the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

The Project Site is located in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. The size of the Project Site will be reduced during Project implementation to increase the width of the alley and adjacent sidewalks to meet current standards. The post dedication Site would be 37,172 square feet. Uses within the block that lie adjacent to the Project

[5] Calculations included in the analysis of environmental impacts for this Project conservatively assume that all of the commercial space would be used for restaurant uses. This provides for conservative analyses as restaurant uses generate greater impacts than retail uses. For example, restaurant uses generate greater levels of traffic, consumption of resources such as energy and water consumption, and associated GHG emissions.

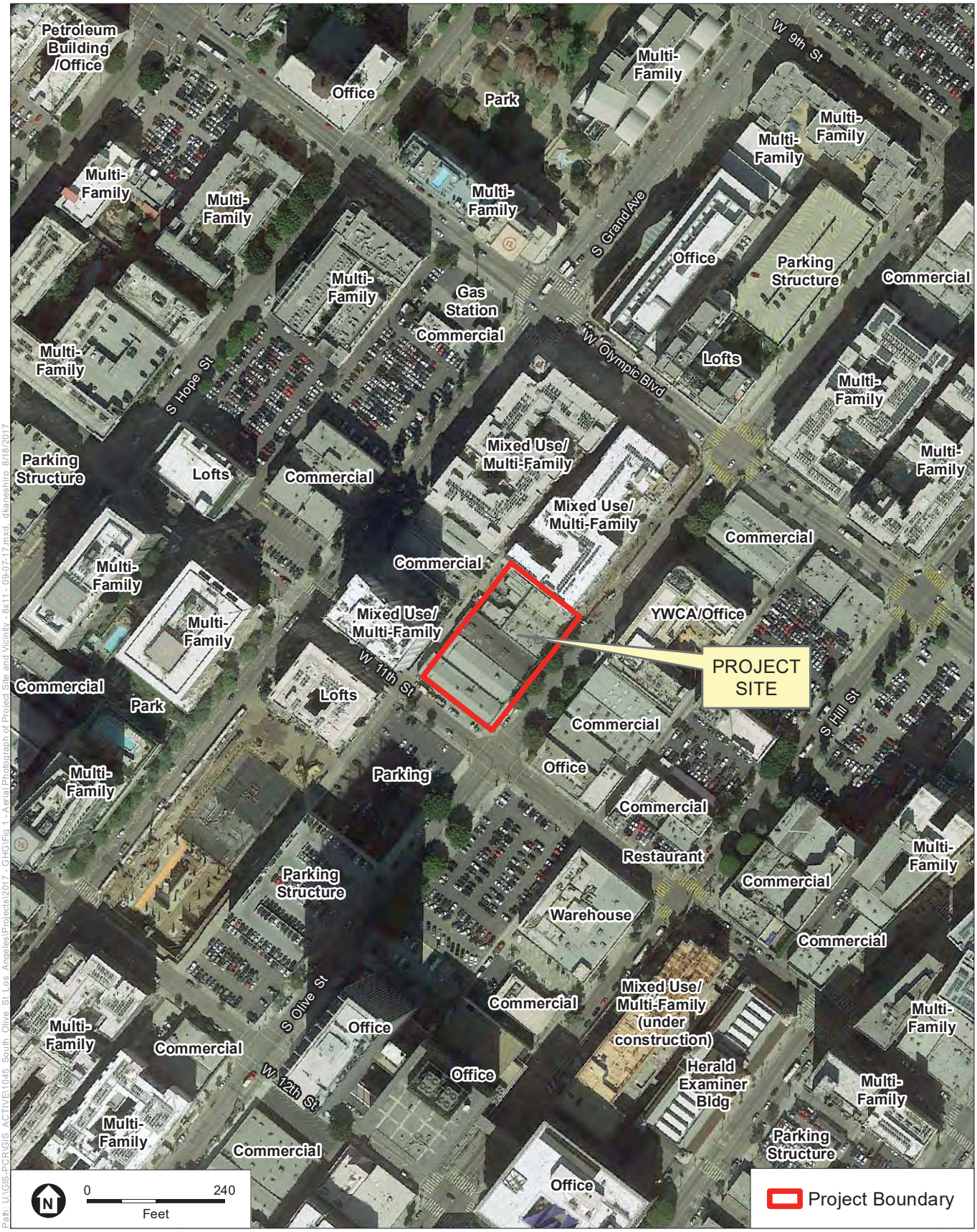
include a 7-story mixed-use development to the north, 7-story mixed-use development to the northwest, and a two story commercial building and 25-story mixed-use high-rise building to the west. Adjacent development across Olive Street to the east includes single story commercial uses; and across 11th Street to the south includes a surface parking. Surrounding development includes a large array of newer mixed use development, and older commercial, office, residential and warehouse uses.

The Project vicinity is highly urbanized and generally built-out. The South Park community of Downtown Los Angeles is one of nine-districts in the Central City Community Plan area, and is representative of the Downtown Center with its concentration of government-related uses, high- and mid-rise office buildings, residential buildings, hotels, retail uses, museums, and cultural districts. The South Park area includes a mix of residential, medical, commercial, and retail uses; with a substantial concentration of housing located next to and over support services, such as retail and commercial developments that provide employment opportunities for area residents.

The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

Construction of the Project would be completed over an approximately 3.5-year period. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

The Project Site and surrounding uses are shown in **Figure 1**. The site plan for the Project is provide in **Figure 2**.



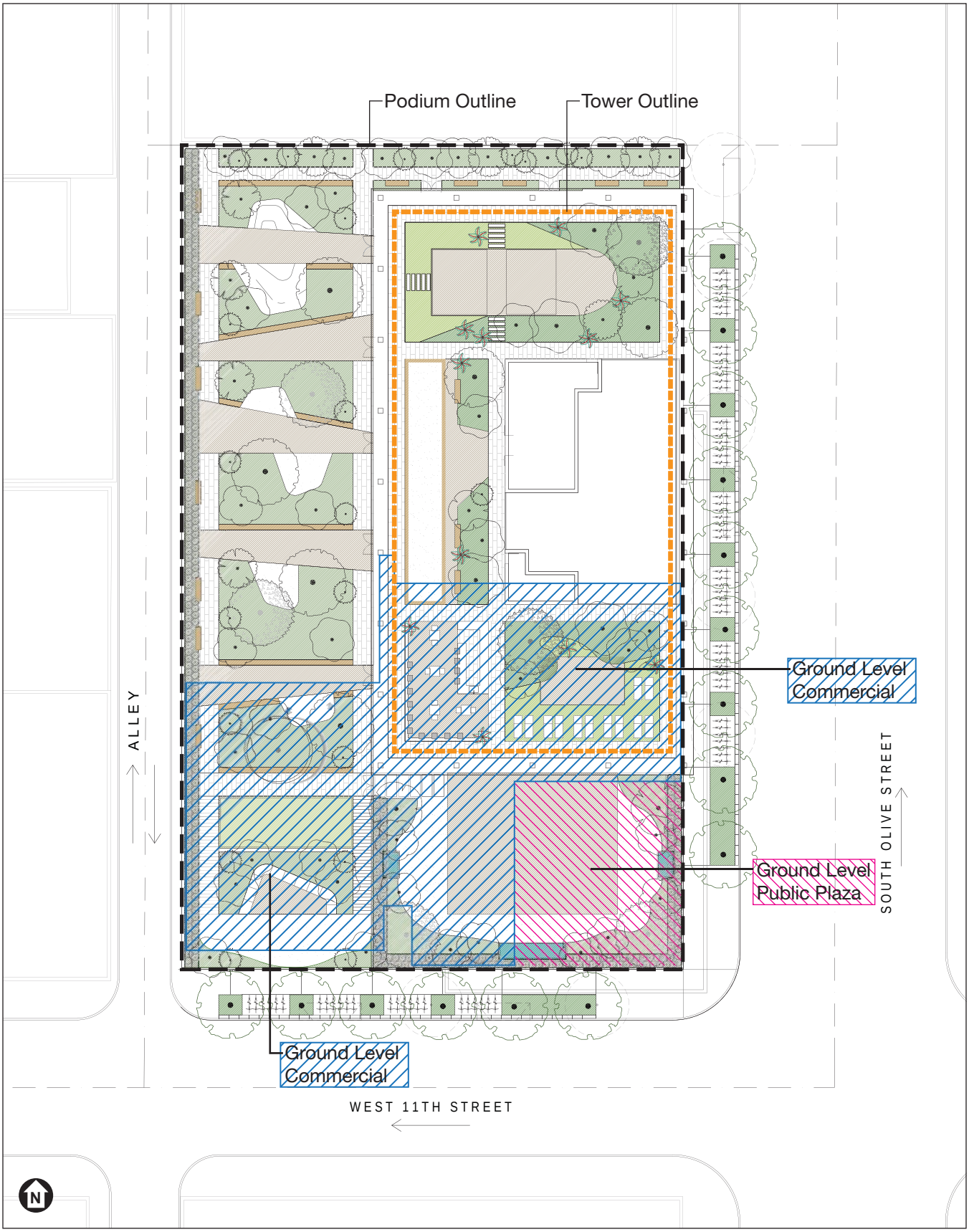
SOURCE: Google Earth, 2016

1045 Olive Street

Figure 1

Aerial Photograph with Surrounding Land Uses

ESA



SOURCE: ODA New York, 2017; ESA, 2017

1045 Olive Street

Figure 2

Proposed Site Plan

ESA

2.3 Jobs and Economic Improvement Through Environmental Leadership Act

In September 2011, the Governor signed the Act, which required the Governor to establish procedures for applying for streamlined environmental review under the California Environmental Quality Act (CEQA) for projects that meet certain requirements. The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). For purposes of California Public Resources Code Section 21183(c) the following process applies:

a. The applicant shall submit electronically to AB900ARBsubmittals@arb.ca.gov a proposed methodology for quantifying the project's net additional greenhouse gas emissions. The Air Resources Board will review and comment on the methodology, at its discretion, within 30 days of submission.

b. At the same time, the applicant shall submit to AB900ARBsubmittals@arb.ca.gov documentation that the project does not result in any net additional greenhouse gas emissions. The documentation must at least quantify:

   (1) Both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and

   (2) The net emissions of the project after accounting for any mitigation measures that will be monitored and enforced consistent with Public Resources Code section 21183(d).

c. Within 60 days of receiving the documentation in 6.b. above, the Board will determine whether the condition specified in Public Resources section 21183(c) has been met or, if more time is needed, notify the applicant of the expected completion date.

d. The Board will determine and report to the Governor in writing that a project does not result in any net additional emissions of greenhouse gases if the project demonstrates through a combination of project design features, compliance with (or exceeding minimum requirements of) existing regulations, and mitigation that it would result in zero additional greenhouse gas emissions.

SECTION 3
Greenhouse Gas Emissions

3.1 Global Climate Change and Greenhouse Gases

The natural process through which heat is retained in the troposphere[6] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a three-fold process as follows: (1) short wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation re-emitted by the Earth; and (3) GHGs in the atmosphere absorbing or trapping the long-wave radiation and re-emitting it back towards the Earth and into space. This third process is the focus of global climate change actions.

The most commonly emitted GHG from anthropogenic (i.e., human) activities is carbon dioxide (CO_2). Not all GHGs possess the same ability to induce climate change; as a result, GHG contributions are commonly quantified in the units of equivalent mass of carbon dioxide (CO_2e). Mass emissions are calculated by converting pollutant-specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value.[7] These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 are currently in use by the State of California for official GHG emission inventory purposes. By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons of CO_2e ($MTCO_2e$) per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The CO_2e values are calculated for construction years as well as existing and Project build-out conditions in order to generate a net change in GHG emissions for construction and operation. Compounds that are regulated as GHGs are discussed below.

- Carbon Dioxide (CO2): CO2 is the most abundant GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO2 is the reference gas (GWP of 1) for determining the GWPs of other GHGs.
- Methane (CH4): CH4 is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and

6 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

7 GWPs and associated CO2e values were developed by the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The California Air Resources Board (CARB) has begun reporting GHG emission inventories for California, starting with the 2012 inventory, using the GWP values from the IPCC AR4.

leaks in natural gas pipelines. The GWP of CH4 is 21 in the IPCC SAR and 25 in the IPCC AR4.

- Nitrous Oxide (N2O): N2O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N2O is 310 in the IPCC SAR and 298 in the IPCC AR4.
- Hydrofluorocarbons (HFCs): HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs ranges from 140 for HFC-152a to 11,700 for HFC-23 in the IPCC SAR and 124 to 14,800 in the IPCC AR4.
- Perfluorocarbons (PFCs): PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. The GWPs of PFCs range from 6,500 to 9,200 in the IPCC SAR and 7,390 to 17,700 in the IPCC AR4.
- Sulfur Hexafluoride (SF6): SF6 is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF6 has a GWP of 23,900 in the IPCC SAR and 22,800 in the IPCC AR4.

The Climate Registry (TCR) has prepared the General Reporting Protocol for calculating and reporting GHG emissions from a number of general and industry-specific activities.[8] No specific protocols are available for land use development projects; however, the General Reporting Protocol has been adapted to address the land use development GHG emissions in this assessment. The information provided in this assessment is generally consistent with the General Reporting Protocol minimum reporting requirements. The General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include:

- Scope 1: Direct GHG emissions from human activity (e.g., stationary combustion of fuels, mobile combustion of fuels in transportation).
- Scope 2: Indirect GHG emissions associated with activities of the reporting entity but occur at sources controlled by another entity (e.g., purchased electricity or purchased steam).
- Scope 3: Indirect emissions associated with other emissions sources, such as employee commute and business travel and waste disposal.

According to the California Air Resources Board (CARB), the consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility: "As facilities consider changes that would affect their emissions – addition of a cogeneration unit to boost overall efficiency even as it increases direct emissions, for example – the relative impact on total (direct plus indirect) emissions by the facility should be monitored. Annually reported indirect energy usage also aids the conservation awareness of the facility and provides information" to

8 The Climate Registry, General Reporting Protocol, Version 2.1, (2016).

CARB to be considered for future strategies by the industrial sector.[9] Additionally, the Office of Planning and Research directs lead agencies to "make a good-faith effort, based on available information, to calculate, model, or estimate…GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[10] Therefore, direct and indirect emissions are considered in this assessment.

3.2 Baseline Operational Emissions

3.2.1 Description of Baseline Condition

The Project Site encompasses four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. Existing active land uses include 14,653 square feet of manufacturing space and 5,171 square feet of retail space. The remaining 15,827 square feet is currently vacant and not included in the analysis. For the purposes of estimating emissions within CalEEMod, the existing active uses were modeled as retail (strip mall) and manufacturing uses. The buildings were originally constructed between about the 1910s to the 1950s. The Project would demolish and remove the existing structures and associated infrastructure from the Project Site and the existing uses would be vacated prior to construction and would cease to operate. Therefore, the GHG emissions from the existing site uses would not occur contemporaneously with either Project construction emissions or Project operational emissions. The square footage for these existing land uses are provided in **Table 1**.

TABLE 1
BASELINE CONDITION FLOOR AREA

Land Use	Modeled CalEEMod Land Use	Square Feet (sqft)
Retail	Strip Mall	5,171
Manufacturing	Unrefrigerated Waterhouse-No Rail	14,653
Parking Lot/Hardscape Areas	Parking Lot	5,952

SOURCE: 1045 Olive, LLC 2017.

3.2.2 GHG Emission Sources and Calculation Methodology

Construction

The Project Site is currently built-out. Construction of the buildings and associated parking areas and infrastructure resulted in one-time GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from heavy-duty construction equipment, haul trucks, and worker vehicles. However, sufficient detail is not available with respect to the construction schedule, equipment usage, and number of haul trips to provide a quantitative construction GHG emissions assessment for the

9 California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (AB 32), (2007).

10 Office of Planning and Research, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review, page 5, (2008).

Baseline Condition. Therefore, construction-related GHG emissions are not included for the Baseline Condition. This is a conservative approach since, by excluding the Baseline Condition construction-related GHG emissions, the Project would need to provide slightly greater GHG reductions in order to meet the requirements of AB 900 of no net additional GHG emissions.

Operational Energy – Electricity

The generation of electricity in California is achieved through the combustion of fossil fuels, primarily natural gas, using steam boilers, internal combustion engines, and combustion turbines. A portion of the electricity in California is imported from outside the state and is derived from the combustion of coal and other non-gaseous fossil fuels. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. These emissions occur due to the electrical demand of the existing land uses that currently operate on the Project Site. The electricity generation occurs off-site; therefore, electricity use results in GHG emissions that are considered to be indirect.

Emissions of GHGs associated with the Baseline Condition energy demand are based on the size of the retail, manufacturing, and parking/hardscape land uses, the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions in units of $MTCO_2e$ are generally calculated as follows:

Electricity:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_E \times EF_E \times GWP)_i \right) \div 2204.62 \quad \textbf{[Equation 1]}$$

Where:
- Units = Number of land use units (same land use type) [dwelling unit (DU) or 1000 sqft]
- D_E = Electrical demand factor [megawatt-hour (MWh)/DU or 1000 sqft/year]
- EF_E = GHG emission factor [pounds per megawatt-hour (MWh)]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 2204.62 = Conversion factor [pounds/MT]
- i = Summation index

Electrical demand is based on data from the California Energy Commission (CEC) *California Commercial End Use Survey* (CEUS), which lists energy demand by building type,[11] as incorporated into the California Emissions Estimator Model (CalEEMod).[12] The data from the CEUS is from 2002. Since 1978, the CEC has established building energy efficiency standards, which are updated periodically. CalEEMod (version 2016.3.2) incorporates correction factors to account for the 2016 Title 24 Building Energy Efficiency Standards. The existing buildings on the Project Site were built in the 1910s to the 1950s. Thus, the building electricity usage rates are

[11] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017

[12] See: http://www.caleemod.com.

adjusted within CalEEMod using the "historical data" option to use the prior 2005 Title 24 Building Energy Efficiency Standards.[13] This is considered a conservative adjustment because the existing buildings were built prior to implementation of the 2005 Standards and thus would have been built to a less stringent energy standard and data is not available within CalEEMod to adjust usage factors prior to the 2005 Standards. Parking lot and hardscape areas result in electricity usage due to lighting needs and were included as sources.

The Los Angeles Department of Water and Power (LADWP) provides electric service to the Project Site. Emission factors for GHGs due to electrical generation to serve the electrical demands of the Baseline Condition were obtained from the LADWP 2016 Draft Power Integrated Resource Plan, which provides a CO_2 intensity of 1,132 pounds of CO_2 per MWh in 2015 (the most recent year for which data is provided).[14] LADWP has achieved average renewable energy sales of approximately 20 percent for the 2010 through 2013 period.[15] Emission factors for CH_4 and N_2O were obtained from CalEEMod.[16]

The estimated annual emissions from electrical demand from the Baseline Condition are provided in **Table 2**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 2
BASELINE CONDITION ELECTRICAL DEMAND GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
Existing Site						
Retail	5.17	82.5	1,132	0.029	0.0062	42.5
Manufacturing	14.65	67.0	1,132	0.029	0.0062	34.5
Parking/Hardscape	5.95	5.2	1,132	0.029	0.0062	2.7
Subtotal						**80**

[a] California Air Resources Board, CalEEMod User's Guide, Appendix D, Section 5, November 2017, http://caleemod.com/. Accessed December 2017. Factors are based on the historical data option.

[b] Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) C-13.

[c] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[d] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

13 California Air Resources Board, CalEEMod User's Guide, Section 4.6, November 2017, http://caleemod.com/. Accessed December 2017.

14 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) C-13.

15 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-1.

16 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

Operational Energy – Natural Gas

The existing land uses under the Baseline Condition utilize natural gas primarily for heating needs. The combustion of natural gas results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The combustion of natural gas occurs on-site; therefore, the associated GHG emissions are considered to be direct.

The emissions of GHGs associated with natural gas combustion under the Baseline Condition are based on the size of the existing land uses, the natural gas combustion factors for the land uses in units of million British thermal units (MMBtu), the GHG emission factors for natural gas combustion, and the GWP values for the GHGs emitted. Annual natural gas GHG emissions in units of $MTCO_2e$ are generally calculated as follows:

Natural Gas:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_{NG} \times EF_{NG} \times GWP)_i \right) \div 2204.62 \quad \textbf{[Equation 2]}$$

Where:	Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
	D_{NG}	=	Natural gas combustion factor [MMBtu/DU or 1000 sqft/year]
	EF_{NG}	=	GHG emission factor [pounds/MMBtu]
	GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
	2204.62	=	Conversion factor [pounds/MT]
	i	=	Summation index

Similar to the electricity calculations, natural gas demand is based on data from the CEUS, which lists energy demand by building type, as incorporated into CalEEMod. As discussed previously, the existing buildings on the Project Site were built in the 1910s to the 1950s. Thus, the building natural gas usage rates are adjusted within CalEEMod using the "historical data" option to use the prior 2005 Title 24 Building Energy Efficiency Standards. This is considered a conservative adjustment because the existing buildings were built prior to implementation of the 2005 Standards and thus would have been built to a less stringent energy standard and data is not available within CalEEMod to adjust usage factors prior to the 2005 Standards. Parking lot and hardscape areas do not result in natural gas combustion and were excluded as sources.

The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the Baseline Condition were obtained from CalEEMod, which provides statewide emission factors.

The estimated annual emissions from natural gas combustion from the Baseline Condition are provided in **Table 3**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 3
BASELINE CONDITION NATURAL GAS GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Natural Gas Demand Factor, D_{NG} (MMBtu/year) [a]	Emission Factor, EF_{NG} (pounds/MMBtu)			Annual GHG Emissions ($MTCO_2e$/year) [c]
			CO_2 [b]	CH_4 [b]	N_2O [b]	
Existing Site						
Retail	5.17	9.4	117.65	0.0023	0.0022	0.5
Manufacturing	14.65	15.2	117.65	0.0023	0.0022	0.8
Subtotal						**1**

[a] California Air Resources Board, CalEEMod User's Guide, Appendix D, Section 5, November 2017, http://caleemod.com/. Accessed December 2017. Factors are based on the historical data option.

[b] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

Operational Mobile

Mobile source emission calculations associated with the Baseline Condition are calculated using vehicle miles traveled (VMT) from the traffic analysis prepared for the Project.[17] The estimated VMT in the traffic analysis is based on average trip lengths for each land use were determined using CalEEMod. The trip type describes the purpose of the trip generated at each land use, such as for commercial trips. Commercial trips include commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW). The trip lengths are based on the location and urbanization of the Project area. The average trip length of each land use is the sum of the trip length of each trip type multiplied by the percentage of trip type and accounting for applicable reductions from proximity to transit and other VMT-reducing land use characteristics.

The annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic analysis prepared for the Project.[18] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses. The VMT calculations for the existing site uses are provided in **Appendix A**.

The analysis is also based on the CARB on-road vehicle emissions factor model (EMFAC). EMFAC2014 "represents ARB's current understanding of motor vehicle travel activities and their associated emission levels."[19] Emissions of GHGs associated with mobile sources under the Baseline Condition are based on the average daily trip rate, trip distance, the GHG emission factors for the mobile sources, and the GWP values for the GHGs emitted. The types of vehicles

[17] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

[18] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

[19] California Air Resources Board, Mobile Source Emissions Inventory, http://www.arb.ca.gov/msei/categories.htm#emfac2014. Accessed September 2017.

that visit the Project Site include all vehicle types including automobiles, light-duty trucks, delivery trucks, and waste haul trucks. Modeling for the Baseline Condition was conducted using the vehicle fleet mix for the South Coast Air Basin for all vehicle types as provided in EMFAC2014.

Emission factors were obtained from EMFAC2014, which was run in the emissions mode (also referred to as the "Burden" mode) and used to generate South Coast Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile, which is the same methodology used by CalEEMod. Emissions of GHGs from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the existing Project Site. The emissions were calculated using the South Coast Air Basin motor vehicle fleet mix for year 2017 as provided in EMFAC2014. Mobile source emissions are the product of the CalEEMod estimated VMT and the EMFAC2014 emission factors. The estimated annual emissions from mobile sources from the Baseline Condition are provided in **Table 4**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 4
BASELINE CONDITION MOBILE SOURCE GREENHOUSE GAS EMISSIONS

Land Use	Estimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
Existing Site			
Retail/Manufacturing (2017)	760,945	462.4	352
Subtotal			**352**

[a] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017. Based on the estimated weekday VMT multiplied by 261 days per year and the estimated weekend VMT, using the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses multiplied by 104 days per year.

[b] EMFAC2014 Emission Factors for the South Coast Air Basin motor vehicle fleet mix.

SOURCE: ESA 2017.

Operational Solid Waste

The existing land uses under the Baseline Condition generate municipal solid waste (MSW) from day-to-day operational activities, which generally consists of product packaging, bottles, food scraps, paper, plastic, and other items routinely disposed of in municipal trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the Baseline Condition are calculated using CalEEMod. The emissions are based on the size of the existing land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Solid Waste:

Annual Emissions [$MTCO_2e$] = ($\sum_i$ (Units × D_{MSW} × EF_{MSW} × GWP)$_i$) ÷ 1.1023
[Equation 3]

Where:	Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
	D_{MSW}	=	Waste disposal rate [tons/DU or 1000 sqft/year]
	EF_{MSW}	=	GHG emission factor [tons/ton waste]
	GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
	1.1023	=	Conversion factor [tons/MT]
	i	=	Summation index

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. Annual waste disposal rates used in CalEEMod are based on data from the California Department of Resources Recycling and Recovery (CalRecycle).[20] The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of approximately 76 percent, according to the most recent data available.[21] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, are used in this assessment.

The estimated annual emissions from solid waste disposal from the Baseline Condition are provided in **Table 5**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 5
BASELINE CONDITION SOLID WASTE DISPOSAL GREENHOUSE GAS EMISSIONS

Land Use	Waste Diversion Rate [a]	Waste Disposal after Diversion, D_{MSW} (tons/year) [b]	Landfill gas (no capture)	Landfill Gas (capture with flaring)	Annual GHG Emissions ($MTCO_2e$/year) [c]
Existing Site					
Retail/Manufacturing	76%	9.6	6%	94%	5
Subtotal					**5**

[a] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

[b] CalRecycle, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 Manufacturing – All Other (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017.

[c] Emissions are based on CalEEMod default values for landfill gas capture and flaring for the South Coast Air Basin region. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

[20] CalRecycle, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 Manufacturing – All Other (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017.

[21] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

Operational Water and Wastewater

Water and wastewater generated from the existing land uses under the Baseline Condition requires energy to supply, distribute and treat. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The electricity generation occurs off-site; therefore, the electricity use from water and wastewater results in GHG emissions that are considered to be indirect. Wastewater also results in emissions of GHGs from wastewater treatment systems (e.g., septic, aerobic, or lagoons) as well as from solids that are digested either through an anaerobic digester or with co-generation from combustion of digester gas.

The emissions of GHGs associated with water demand and wastewater generation under the Baseline Condition are calculated using CalEEMod. The emissions are based on the size of the existing land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod as follows for indoor and outdoor water demand:

Water Supply, Treatment, and Distribution; Wastewater Treatment (electricity):

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_W \times (EI_W \div 1000) \times EF_W \times GWP)_i \right) \div 2204.62$$

[Equation 4]

Where:

Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
D_W	=	Water demand factor [million gallons (Mgal)/DU or 1000 sqft/year]
EI_W	=	Electricity intensity factor [kilowatt-hours (kWh)/Mgal]
1000	=	Conversion factor [kWh/MWh]
EF_W	=	GHG emission factor [pounds/MWh]
GWP	=	Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
2204.62	=	Conversion factor [pounds/MT]
i	=	Summation index

The estimated water demand is based on CalEEMod factors, which are based on annual water demand rates in the Pacific Institute *Waste Not Want Not* report.[22] There is no landscaping at the existing land uses at the Project Site. There are currently no trees or other substantial landscaping located on the Project Site with the exception of five street trees located along the street-side edge of Olive Street that are maintained by the City. Therefore, under the Baseline Condition, this analysis assumes no outdoor water demand associated with the existing land uses.

[22] Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm.

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report Refining Estimates of Water-Related Energy Use in California, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[23] The same electricity GHG emissions factors discussed under the **Operational Energy – Electricity** subheading are used for water and wastewater energy usage.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in CalEEMod for the type of wastewater treatment. Calculation formulas are described in detail in the California Emissions Estimator Model User's Guide, Appendix A.[24] As stated in the User's Guide, the GHGs emitted from each type of wastewater treatment are based on the CARB's Local Government Operations Protocol (LGOP),[25] which are in turn based on United States Environmental Protection Agency (USEPA) methodologies.[26] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas.

The estimated annual emissions from water and wastewater from the Baseline Condition are provided in **Table 6**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 6
BASELINE CONDITION WATER AND WASTEWATER GAS GREENHOUSE GAS EMISSIONS

Land Use	Water Demand, D_W (gal/year) [a]	Electricity Intensity Factor, EI_W (kWh/Mgal) [b]				Annual GHG Emissions ($MTCO_2e$/year) [c]
		Supply	Treat	Distribute	Treatment	
Existing Site						
Retail	382,955 (indoor) / 0 (outdoor)	9,727	111	1,272	1,911	3.1
Manufacturing	3,387,810 (indoor) / 0 (outdoor)	9,727	111	1,272	1,911	27.3
Subtotal						**30**

[a] City of Los Angeles, Department of Public Works, Bureau of Sanitation, Sewerage Facilities Charge, Sewage Generation Factors for Residential and Commercial Categories. Provided in the L.A. CEQA Thresholds Guide, pages M.2-22-M.2-26 (2006). Water demand rates are derived based on the wastewater generation rates.

[b] California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

[23] California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

[24] California Air Resources Board, CalEEMod User's Guide, Appendix A, November 2017, http://caleemod.com/. Accessed December 2017.

[25] California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, (2008).

[26] United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, (2008).

Operational Area and Stationary

Area sources of GHG emissions typically result from the operation of equipment used to maintain landscaping, such as lawnmowers and trimmers. The combustion of fossil fuels to operate these equipment results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. There is no landscaping at the existing land uses at the Project Site. There are currently no trees or other substantial landscaping located on the Project Site with the exception of five street trees located along the street-side edge of Olive Street that are maintained by the City. There are no other substantial stationary sources on-site, such as generators or industrial sized boilers. Therefore, under the Baseline Condition, this analysis does not include operational area or stationary sources of emissions associated with the existing land uses.

Summary of Baseline Condition GHG Emissions

A summary of the GHG emissions under the Baseline Condition is provided in **Table 7**.

TABLE 7
BASELINE CONDITION SUMMARY OF ANNUAL GREENHOUSE GAS EMISSIONS

Source	Annual GHG Emissions ($MTCO_2e$/year) [a]
Existing Site	
Electricity	80
Natural Gas	1
Mobile	352
Solid Waste	5
Water and Wastewater	30
Area and Stationary	0
Total	**468**

[a] Totals may not add up exactly due to rounding in the modeling calculations.

SOURCE: ESA 2017.

3.3 Project Construction and Operational Emissions

3.3.1 Description of Project Condition

The Project would demolish all existing buildings and surface parking/hardscape on the Project Site. The Project would construct an approximately 751,777 square foot (net) mixed-use high-rise building with 794 multi-family residential units and 12,504 square feet of neighborhood serving commercial uses. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art Plaza. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. The square footage for the Project land uses and modeled in CalEEMod are provided in **Table 8**.

TABLE 8
PROJECT FLOOR AREA

Land Use	Modeled CalEEMod Land Use	Units
Residential Apartments	Apartments High Rise	794 dwelling units (739,273 sqft)
Commercial [a]	High Turnover (Sit Down Restaurant)	12,504 sqft
Common Amenity Area for Residents (exterior/lounge/activity)	General Office	37,927 sqft
Common Amenity Area for Residents (interior/lounge/activity)	General Office	23,025 sqft
Private Balcony Space for Residents	Other Non-Asphalt Surfaces	39,700 sqft
Public Plaza Area	City Park	2,728 sqft
Parking	Enclosed Parking with Elevator	891 spaces (426,458 sqft)

[a] The commercial use is modeled as high turnover (sit down restaurant) in order to provide a conservative analysis. The high turnover (sit down restaurant) use generates more vehicle trips and has greater energy demand compared to other commercial (i.e., retail, office) uses.

SOURCE: 1045 Olive, LLC 2017.

For the purposes of this assessment, in order to provide a comparison of the Project's GHG emissions with the Baseline Condition, and to assess future GHG emissions trends of the Project, emissions of GHGs are estimated for the Project's construction and operational lifetime. Within the Project's operational lifetime, there are several key milestone years. The milestone years correspond to the following circumstances:[27, 28]

- 2023: Expected full initial operational year of the Project (electric utilities, including LADWP, are required to supply a minimum of 33 percent of electricity via renewable sources during this year);
- 2024: The year in which electric utilities, including LADWP, are expected to supply a minimum of 40 percent of electricity via renewable sources;
- 2025: The year in which the model year 2017-2025 light-duty vehicle GHG emissions and Corporate Average Fuel Economy standards are to be fully implemented for new vehicles;
- 2027: The year in which electric utilities, including LADWP, are expected to supply a minimum of 45 percent of electricity via renewable sources;
- 2030: The year in which electric utilities, including LADWP, are expected to supply a minimum of 50 percent of electricity via renewable sources.

[27] Assembly Bill 1493 (Pavley Regulations) reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.

[28] On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 was signed into law on October 7, 2015.

3.3.2 GHG Emission Sources and Calculation Methodology

Construction

Construction of the Project would result in one-time GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from heavy-duty construction equipment, haul trucks, and worker vehicles. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road and on-road emissions factors. The emissions are estimated using the CalEEMod tool, which incorporates the CARB off-road equipment emissions factor model (OFFROAD) and on-road vehicle emissions factor model (EMFAC). The output values used in this analysis are adjusted to be Project-specific based on equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year. The CalEEMod tool provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Since a construction contractor(s) has not yet been retained for the Project, specific equipment specifications are not yet known. Therefore, recommended equipment and vehicle horsepower ratings and load factors provided in CalEEMod are used in this assessment. According to the CalEEMod User's Guide, the model "utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available."[29] Therefore, the use of the recommended CalEEMod data is an appropriate methodology. In addition, certain equipment, such as tower cranes and compressors, would be electric powered and were modeled in CalEEMod using the electric fuel input, rather than diesel fuel. Haul trucks would be used to export soil from the Project Site. Concrete trucks would be used to import concrete to the Project Site. Emissions from haul trucks and continuous pour concrete trucks were estimated outside of CalEEMod using EMFAC2014 emission factors for heavy-duty trucks because soil would be exported for only a portion of the days during the site preparation and grading/excavation construction phases, and the continuous concrete pour would occur for approximately 1 day (CalEEMod would incorrectly assume soil export and concrete import would occur every day during these phases).

Construction of the Project would occur over a number of phases and include activities such as demolition, debris and soil hauling, building construction, architectural coating, and paving. Information regarding the activities that would occur during these phases is provided below:

- **Demolition:** This phase is anticipated to begin as early as 2019 and last for approximately one month. If construction commences at a later date, this assessment would be considered conservative as future year emission factors tend to decline in future years. Construction equipment would include a concrete saw, loader, haul trucks, jackhammer, sweeper/scrubber and other construction equipment.
- **Site Preparation:** This phase is anticipated to occur during demolition and last for approximately one month. Construction equipment would include a concrete saw, excavator, and sweeper/scrubber.

[29] California Air Resources Board, CalEEMod User's Guide, p.1, November 2017, http://caleemod.com/. Accessed December 2017.

- **Grading and Excavation:** This phase is anticipated to have some overlap with the demolition and site preparation phase and last for approximately four months. Construction equipment would include a backhoe, drill rig, excavators, haul trucks, loaders, and sweeper/scrubber. Up to approximately 80,000 cubic yards of soil would be excavated and exported.
- **Utilities/Trenching:** This activity is anticipated to have some overlap with grading and excavation and last for approximately 3 months. During this phase, trenching for site utilizes would occur. Construction equipment would include a backhoe and sweeper/scrubber.
- **Foundation/Concrete Pouring:** This activity is anticipated to have some overlap with grading and excavation and utilities/trenching and would be on-going through building construction activities for approximately 2.5 years. During this activity, the building foundations would be prepared and concrete pouring would occur. Construction equipment would include a concrete trucks, backhoe, crane, forklift, and sweeper/scrubber.
- **Building Construction:** This phase is anticipated to begin after grading and excavation and after the building foundations have been prepared and last for just over 2 years. During this phase, the building would be constructed. Construction equipment would include cranes, forklifts, sweeper/scrubber, and material/vendor supply trucks.
- **Paving:** This activity is anticipated to last for approximately 2 months and occur during the building construction phase. During this activity, paving materials would be poured during construction of the buildings and related features and the surfaces would be paved. Construction equipment would include a backhoe, sweeper/scrubber, and other equipment.
- **Architectural Coating:** This activity is anticipated to last for approximately 2 years and occur during the building construction phase. During this activity, the interior and exterior coating would be applied to the residential and commercial uses as the floors are built out. Specific coating equipment would include an air compressor and forklift.

The emissions of GHGs associated with construction of the Project were calculated for each year of construction activity. Detailed emissions calculations are provided in **Appendix B**. Results of the GHG emissions calculations are presented in **Table 9**. Although GHGs are generated during construction and are accordingly considered one-time emissions, it is important to them when assessing all of the long-term GHG emissions associated with the Project.

TABLE 9
ESTIMATED UNMITIGATED PROJECT CONSTRUCTION GREENHOUSE GAS EMISSIONS

Emission Source	Annual GHG Emissions [a] (MTCO2e)
Construction Year 1	1,262
Construction Year 2	1,678
Construction Year 3	2,666
Construction Year 4	1,507

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

SOURCE: ESA 2017.

Operational Energy – Electricity

Electricity-related emissions of GHGs associated with operation of the Project are based on the size of the commercial and residential land uses (including residential amenities), the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions are calculated using the general formula shown previously as **Equation 1**. For residential land uses, emission factors are specified in units of dwelling units (DU). For nonresidential land uses, emission factors are specified in units of 1,000 square feet. This assessment also includes electricity-related GHG emissions from the proposed enclosed parking structure, which would include elevators, lighting, and a ventilation system.

Electricity demand is based on data from the CEUS, which lists energy demand by building type.[30] However, since the data from the CEUS is from 2002, CalEEMod incorporates correction factors to account for compliance with the 2016 Title 24 Building Standards Code, which went into effect on January 1, 2017. The Project would be required to meet the Title 24 standards in effect at the time of building permit application. For example, new Title 24 standards are anticipated to be adopted in the 2019 timeframe. Although the energy efficiency requirements of these future standards are not yet known, if these standards are in effect at the time of building permit application, the project would be expected achieve greater levels of energy efficiency compared to the 2016 Title 24 standards and energy-related GHG emissions would be reduced further below the levels shown in the analysis.

The Project would be designed to incorporate Project Design Features (PDFs) that would reduce its energy demand with the goal of achieving or exceeding the requirem-ents of the State of California Green Building Standards (CALGreen) Code, the City of Los Angeles Green Building Code, and the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification.[31] According to the USGBC, LEED is the most widely used green building rating system in the world. Thus, the Project would reduce its electricity demand as compared to the default electricity factors in CalEEMod. The PDFs were accounted for in CalEEMod by selecting the appropriate options in the "mitigation measures" section of the model. Green building features that would result in quantifiable reductions in GHG emissions would include the following:

> **Green Building Features**: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below:

30 California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017

31 The LEED Gold Certification requirement for the Jobs and Economic Improvement Through Environmental Leadership Act for ELDP projects is established pursuant to AB 246 (Santiago, Ch. 522, Statutes of 2017), which was signed by the Governor on October 6, 2017.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

The LEED building energy efficiency credits are earned relative to the increase in energy efficiency as compared to the LEED building energy baseline, which is established based on prior building energy efficiency standards. While the Project would optimize building energy performance and achieve LEED credits for building energy performance, additional energy reductions from LEED energy efficiency measures are not applied to avoid double counting reductions in the modeling from compliance with California's current 2016 Title 24 building energy requirements.[32]

The LADWP provides electric service to the Project Site. Currently, LADWP provides 20 percent of electricity via renewable sources.[33] LADWP is required to provide an increasing percentage from renewable sources in compliance with the Renewables Portfolio Standard with 33 percent by 2020, 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. During calendar year 2015, 37 percent of the energy delivered to LADWP customers was generated from two coal-fired generating stations: the Intermountain Power Project (IPP), located in Utah, and the Navajo Generating Station (NGS), located in Arizona. These stations provide base load generation to Los Angeles; however, they emit about twice as much CO_2 as energy generated from natural gas.[34] On July 1, 2016, LADWP sold its 477 MW share in NGS to Salt River Project, three and a half years before the operating agreement and land lease expires in December 2019.[35] LADWP continues to focus on early coal replacement options as a means to lower LADWP's CO_2 emission levels and increase renewable sources in accordance with the Renewables Portfolio Standard.

32 The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards. The LEED baseline uses prior energy standards; therefore, in order to avoid double counting reductions, additional energy reductions for LEED compliance are not included in the current calculations. As a result, this assessment provides a conservative assessment of energy-related GHG emissions.

33 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-1.

34 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-8.

35 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-8.

Based on data obtained from CARB staff, "[i]f an applicant would like to use an EF [emission factor] that represents the state's Renewable Portfolio Standard (RPS) law and growth in electricity demand, the EF of 595 [pounds] CO_2/MWh may be used."[36] According to CARB staff, the "EF represents a 'marginal' supply profile for new generation that will be added to the grid in the years 2020 and beyond, and is consistent with the methodology used in state emission rule impact assessments."[37] Therefore, consistent with the CARB staff recommendation, a CO_2 intensity factor of 595 pounds of CO_2 per MWh was used for electricity emissions for Project operational year 2023. Future year CO_2 intensity factors were scaled proportionately based on the future year renewable energy targets of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Emission factors for CH_4 and N_2O were obtained from CalEEMod.[38] The estimated annual emissions from electrical demand from the project's land uses during the opening year are provided in **Table 10**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 10
PROJECT ELECTRICAL DEMAND GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
2023						
Apartment	794 DU	3,060.0	595	0.029	0.0062	829.3
High Turnover (Sit Down Rest.)	12.5	551.9	595	0.029	0.0062	149.6
Publicly Accessible Plaza Area	2.7	0.95	595	0.029	0.0062	0.3
Common Open Space (Exterior)	37.9	492.7	595	0.029	0.0062	133.5
Common Open Space (Interior)	23.0	299.1	595	0.029	0.0062	81.1
Private Balconies for Residents	39.7	13.9	595	0.029	0.0062	3.8
Enclosed Parking with Elevator	426.5	2,499.0	595	0.029	0.0062	677.3
Subtotal						**1,875**
2024-2026						
Apartment	794 DU	3,060.0	533	0.029	0.0062	743.3
High Turnover (Sit Down Rest.)	12.5	551.9	533	0.029	0.0062	134.1
Publicly Accessible Plaza Area	2.7	0.95	533	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	533	0.029	0.0062	119.7
Common Open Space (Interior)	23.0	299.1	533	0.029	0.0062	72.6
Private Balconies for Residents	39.7	13.9	533	0.029	0.0062	3.4
Enclosed Parking with Elevator	426.5	2,499.0	533	0.029	0.0062	607.0
Subtotal						**1,680**

36 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017. The emission factor of 595 pounds CO_2/MWh is from the California LEV III Initial Statement Of Reasons (ISOR, Dec. 7, 2011), http://www.arb.ca.gov/regact/2012/leviiighg2012/leviiighg2012.htm, based on analysis with CA-GREET model. This document is provided in **Appendix C**.

37 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017.

38 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
2027-2029						
Apartment	794 DU	3,060.0	488	0.029	0.0062	680.8
High Turnover (Sit Down Rest.)	12.5	551.9	488	0.029	0.0062	122.8
Publicly Accessible Plaza Area	2.7	0.95	488	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	488	0.029	0.0062	109.6
Common Open Space (Interior)	23.0	299.1	488	0.029	0.0062	66.5
Private Balconies for Residents	39.7	13.9	488	0.029	0.0062	3.1
Enclosed Parking with Elevator	426.5	2,499.0	488	0.029	0.0062	556.0
Subtotal						**1,539**
2030-2052						
Apartment	794 DU	3,060.0	444	0.029	0.0062	619.8
High Turnover (Sit Down Rest.)	12.5	551.9	444	0.029	0.0062	111.8
Publicly Accessible Plaza Area	2.7	0.95	444	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	444	0.029	0.0062	99.8
Common Open Space (Interior)	23.0	299.1	444	0.029	0.0062	60.6
Private Balconies for Residents	39.7	13.9	444	0.029	0.0062	2.8
Enclosed Parking with Elevator	426.5	2,499.0	444	0.029	0.0062	506.1
Subtotal						**1,401**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, Climate Zone 11, http://www.caleemod.com/. Accessed December 2017. The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards.

[b] California Air Resources Board, Statewide Emission Factors (EF) for Use with AB 900 Projects, January 2017.

[c] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[d] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

Operational Energy – Natural Gas

Natural gas-related emissions of GHGs associated with operation of the project are based on the size of the commercial, restaurant, and residential land uses (including residential amenities), the natural gas demand factors for the land uses, the GHG emission factors for the natural gas combustion, and the GWP values for the GHGs emitted. Annual natural gas GHG emissions are calculated using the general formula shown previously as **Equation 2**. For residential land uses, emission factors are specified in units of DU. For nonresidential land uses, emission factors are specified in units of 1,000 square feet.

Natural gas demand is based on data from the CEUS, which lists energy demand by building type.[39] However, since the data from the CEUS is from 2002, CalEEMod incorporates correction

[39] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017.

factors to account for compliance with the 2016 Title 24 Building Standards Code, which went into effect on January 1, 2017 (since the LEED baseline is established based on prior building energy efficiency standards, additional energy reductions from LEED energy efficiency measures are not applied to avoid double counting reductions).[40] The project would be designed to incorporate PDFs that would reduce its energy demand with the goal of achieving or exceeding the requirements of the CALGreen Code, the City of Los Angeles Green Building Code, and the USGBC LEED Gold Certification. Thus, the project would reduce its natural gas demand as compared to the default electricity factors in CalEEMod. The PDFs were accounted for in CalEEMod by selecting the appropriate options in the "mitigation measures" section of the model. A summary of the energy-efficiency PDFs is provided above in PDF-GHG-1.

The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the project were obtained from CalEEMod, which provides statewide emission factors.[41] The emissions of GHGs due to natural gas demand would be relatively steady for the years assessed. The estimated annual emissions from natural gas combustion from the project are provided in **Table 11**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 11
PROJECT NATURAL GAS COMBUSTION GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Natural Gas Demand Factor (MBtu/year) [a]	Emission Factor (pounds/MMBtu)			Annual GHG Emissions ($MTCO_2e$/year) [c]
			CO_2 [b]	CH_4 [b]	N_2O [b]	
2023-2052						
Apartment [e]	739.3	7,318.3	117.65	0.0023	0.0022	392.9
High Turnover (Sit Down Rest.)	12.5	2,885.4	117.65	0.0023	0.0022	154.9
Publicly Accessible Plaza Area	2.7	0	117.65	0.0023	0.0022	0
Common Open Space (Exterior)	37.9	394.8	117.65	0.0023	0.0022	21.2
Common Open Space (Interior)	23.0	239.7	117.65	0.0023	0.0022	12.9
Private Balconies for Residents	39.7	0	117.65	0.0023	0.0022	0
Enclosed Parking with Elevator	426.5	0	117.65	0.0023	0.0022	0
Subtotal						**582**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, Climate Zone 11, http://www.caleemod.com/. Accessed December 2017. The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards.

[b] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

[40] The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards. The LEED baseline uses prior energy standards; therefore, in order to avoid double counting reductions, additional energy reductions for LEED compliance are not included in the current calculations. As a result, this assessment provides a conservative assessment of energy-related GHG emissions.

[41] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

SOURCE: ESA 2017.

Operational Mobile

Mobile source emission calculations associated with the project are calculated using the VMT from the traffic analysis prepared for the project.[42] The estimated VMT in the traffic analysis is based on average trip lengths for each land use were determined using CalEEMod. The trip type describes the purpose of the trip generated at each land use, such as residential trips and commercial trips. Residential trips include home-work (H-W), home-shop (H-S), and home-other (H-O). Commercial trips include commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW). The trip lengths are based on the location and urbanization of the project area. The average trip length of each land use is the sum of the trip length of each trip type multiplied by the percentage of trip type.

The project is considered an "infill" project, as it is replacing existing commercial uses with a high-density, mixed-use development. The project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services provided by the nearby Metro Blue Line and Expo Line, where the Blue line provides convenient access to locations within Downtown Los Angeles, Long Beach and Compton, and where the Expo line provides convenient access to locations in Los Angeles, Culver City and Santa Monica. Both provide direct connections to the Metro Gold, Purple, and Expo lines that provide transit service to a multitude of locations through the Los Angeles region. The project would be located within a half-mile of public transportation, including 10 existing Metro bus routes (14, 28, 37, 70, 71, 76, 78, 79, 96 and 378), two Rapid Lines (770 and 728), one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB10), and two LADOT Commuter Express Lines CE 431 and CE 437. New housing and job growth, as a result of the completed project, is focused in a high-quality transit area (HQTA), which the Southern California Association of Governments (SCAG) defines as an area within a half mile of a well-serviced transit stop. These land use characteristics are analyzed below to demonstrate that the project would result in reduced vehicle trips, VMT, and associated transportation-related GHG emissions, as well as air pollutant emissions, compared to the statewide and South Coast Air Basin average.

Based on the AB 900 Traffic Assessment prepared by The Mobility Group, Project related reductions in trip generation and VMT due to the Project's infill nature, location, design, and TDM program were quantified.[43] The characteristics of the Project listed below would result in a reduction in VMT and associated GHG and air pollutant emissions.

- **Internal Capture Reduction:** The Project's restaurant space would provide a convenient local destination for the residential element of the Project without having to drive to other locations. It was estimated that a reduction of 15 percent of the trips to and from the restaurant space would come from the on-site residential element of the Project.

[42] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.
[43] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

- **Transit and Walk/Bike Reduction:** The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. Therefore, it was estimated that vehicle trips would be reduced by 20 percent due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

- **Transportation Demand Management (TDM) Reduction:** The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with information on alternate modes and walk destination opportunities.
  - Unbundling of residential parking
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers/showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

  The implementation of the TDM package would result in an estimated reduction of 10 percent of the vehicle trips to and from the residential element of the Proposed Project.

- **Pass-by Trip Reduction:** The Project's commercial restaurant space would provide a convenient local destination for residents in the local neighborhood without having to drive to other locations. It was estimated that a reduction of 20 percent of trips to and from the restaurant space would result from pass-by customers.

The annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic

analysis prepared for the Project.[44] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses. The VMT calculations for the project site uses are provided in **Appendix B**.

Emissions of GHGs from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the existing project site. The national policy for fuel efficiency and emissions standards for the United States auto industry requires that new passenger cars and light-duty trucks achieve an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016 (Phase I standards), based on USEPA calculation methods. In August 2012, more stringent phased-in standards were adopted for new model year 2017 through 2025 passenger cars and light-duty trucks. By 2020, new vehicles are projected to achieve 41.7 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 213 grams of CO_2 per mile (Phase II standards). By 2025, new vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile (Phase II standards). All vehicle types would visit the project site. Therefore, this assessment uses the South Coast Air Basin motor vehicle fleet mix and the fleet average calendar year emissions factors from EMFAC2014 to estimate mobile source GHG emissions. Mobile source emissions are estimates for calendar years 2023 through 2052.

The estimated annual emissions from mobile sources from the project are provided in **Table 12**, *Project Mobile Source Greenhouse Gas Emissions*. Detailed emissions calculations are provided in **Appendix B**.

TABLE 12
PROJECT MOBILE SOURCE GREENHOUSE GAS EMISSIONS

Fleet Mix Year (All Vehicle Classes)	Extimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
2023-2052			
2023	17,103,425	392.7	6,716
2024	17,103,425	382.7	6,546
2025	17,103,425	371.0	6,346
2026	17,103,425	361.2	6,178
2027	17,103,425	352.5	6,029
2028	17,103,425	344.9	5,899
2029	17,103,425	338.2	5,785
2030	17,103,425	332.4	5,686
2031	17,103,425	327.7	5,604
2032	17,103,425	323.3	5,529
2033	17,103,425	319.4	5,463
2034	17,103,425	316.2	5,408

44 The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

Fleet Mix Year (All Vehicle Classes)	Extimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
2023-2052			
2035	17,103,425	313.6	5,363
2036	17,103,425	311.6	5,330
2037	17,103,425	310.0	5,302
2038	17,103,425	308.8	5,281
2039	17,103,425	307.9	5,266
2040	17,103,425	307.2	5,255
2041	17,103,425	306.8	5,247
2042	17,103,425	306.5	5,243
2043	17,103,425	306.5	5,242
2044	17,103,425	306.5	5,242
2045	17,103,425	306.6	5,244
2046	17,103,425	306.9	5,249
2047	17,103,425	307.2	5,254
2048	17,103,425	307.6	5,261
2049	17,103,425	308.0	5,269
2050	17,103,425	308.6	5,279
2051 [c]	17,103,425	308.6	5,279
2052 [c]	17,103,425	308.6	5,279

[a] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017. Based on the estimated weekday VMT multiplied by 261 days per year and the estimated weekend VMT, using the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses multiplied by 104 days per year.

[b] EMFAC2014 Emission Factors for the South Coast Air Basin motor vehicle fleet mix.

[c] EMFAC2014 does not generate emission factors for calendar years after 2050. Therefore, 2050 emission factors were used to represent emissions in calendar years 2051 and 2052.

SOURCE: ESA 2017.

Operational Solid Waste

The project would generate MSW from day-to-day operational activities, which generally consists of product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, plastic, and other items routinely disposed of in trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the project are calculated using CalEEMod. The emissions are based on the size of the commercial and residential land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod using the general formula shown previously as **Equation 3**.

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. Annual waste disposal rates used in CalEEMod are based on waste generation data for applicable residential and nonresidential land uses from the City of Los Angeles and CalRecycle. The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of 76 percent, according to data available from the City.[45] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, are used in this assessment.

The estimated annual emissions from solid waste disposal from the project are provided in **Table 13**. The emissions of GHGs due to waste generation would be relatively steady for the years assessed. Detailed emissions calculations are provided in **Appendix B**.

TABLE 13
PROJECT SOLID WASTE DISPOSAL GREENHOUSE GAS EMISSIONS

Land Use [a]	Waste Diversion [b]	Waste Disposal Rate After Diversion (tons/year)	Landfill gas (no capture)	Landfill Gas (capture with flaring)	Annual GHG Emissions ($MTCO_2e$/year) [c]
2023-2052					
Apartment	76%	425.3	6%	94%	213.9
High Turnover (Sit Down Rest.)	76%	23.8	6%	94%	11.9
Subtotal					**226**

[a] Waste generation factors provided by
Apartment: City of Los Angeles (LA) California Environmental Quality Act (CEQA) Thresholds Guide, Chapter M.3 Solid Waste, (2006). Available at: http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf. Accessed September 2017.
Commercial (Restaurant): CalRecycle 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017. The calculation assumes all of the commercial space would be used for restaurant uses. If other types of retail use are located on the Project Site their solid waste generation would be less than this calculation.

[b] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

[c] Emissions are based on CalEEMod default values for landfill gas capture and flaring for the South Coast Air Basin region. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

With respect to municipal solid waste, the State has enacted regulations to address solid waste services and recycling. California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649 et seq. requires businesses that produce four cubic yards or more of solid waste per week or multifamily residential dwellings of five units or more to arrange for recycling services that are consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection, handling, or recycling of solid waste, to the extent that

[45] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

these services are offered and reasonably available from a local service provider.[46] In addition, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.8 et seq. requires after January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during 2014, a business that generates two cubic yards or more per week of commercial solid waste is required to arrange for organic waste recycling services that include at least one of the following actions: (1) source separate of organic waste from other waste and subscribe to a basic level of organic waste recycling service that includes collection and recycling of organic waste, (2) recycle its organic waste on-site or self-haul its own organic waste for recycling, (3) subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste, (4) make other arrangements to meet the organic waste requirements of a local governmental agency that are more stringent or comprehensive than the requirements of Chapter 12.9, unless the department determines that this requirement will not result in significant additional reductions of organics disposal.[47] The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan (SWIRP), also referred to as the City's Zero Waste Plan, whose goal is to lead Los Angeles towards being a "zero waste" City by 2030.[48] These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion (e.g., recycling) for the City to 76 percent as of 2013.[49] The City has also approved Ordinance No. 181519 (Los Angeles Municipal Code (LAMC) Chapter VI, Article 6, Section 66.32-66.32.5), which requires the diversion of mixed construction and demolition debris to City certified construction and demolition waste processors. The project would be consistent with the City and State waste requirements by utilizing waste collection services that are approved by the City and that meet the applicable requirements for waste diversion and recycling mandates. The City generally relies on single-stream waste recycling where mixed waste is collected and sorted for recycling at a waste reclamation facility. The project would subscribe to a municipal solid waste collection service that is approved by the City and that meets applicable City and State waste collection, management, recycling and diversion requirements.

Operational Water and Wastewater

Water and wastewater generated from the existing land uses under the project would require energy to supply, distribute and treat. Emissions of GHGs would result from the combustion of

46 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649. 2011, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.8.&article=. Access October 2017

47 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.9. January 2015, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.9.&article=. Accessed October 2017.

48 City of Los Angeles Department of Public Works, LA Sanitation, Solid Waste Integrated Resources Plan (SWIRP) – A Zero Waste Management Plan, October 2013, https://www.lacitysan.org/san/sandocview?docname=cnt012522. Accessed October 2017.

49 City of Los Angeles Department of Public Works, LA Sanitation, Recycling, 2017, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r?_adf.ctrl-state=kq9mn3h5a_188. Accessed October 2017.

fossil fuels to produce electricity as well as the wastewater treatment process itself, which results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O.

The emissions of GHGs associated with water demand and wastewater generation under the project are calculated using CalEEMod. The emissions are based on the size of the commercial and residential land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod using the general formula shown previously as **Equation 4**.

CalEEMod calculates water demand based on annual rates in the Pacific Institute *Waste Not Want Not* report.[50] CalEEMod provides options to account for the use of water saving features such as the use of low-flow water fixtures (e.g., low-flow faucets, low-flow toilets). The project would incorporate PDFs to reduce indoor and outdoor water usage, as summarized previous in PDF-GHG-1. Implementation of these PDFs would reduce indoor water usage by approximately 35 percent compared to typical usage values for developments meeting the minimum requirements. These water reduction factors have been accounted for in CalEEMod.

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report *Refining Estimates of Water-Related Energy Use in California*, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[51] The same electricity GHG emissions factors discussed under the **Operational Energy – Electricity** subheading are used for water and wastewater energy usage.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in CalEEMod for the type of wastewater treatment. Calculation formulas are described in detail in the *California Emissions Estimator Model User's Guide, Appendix A*.[52] As stated in the *User's Guide*, the GHGs emitted from each type of wastewater treatment are based on the CARB's *Local Government Operations Protocol* (LGOP),[53] which are in turn based on United States Environmental Protection Agency (USEPA) methodologies.[54] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas. The estimated annual emissions

50 Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm.

51 California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

52 California Air Resources Board, CalEEMod User's Guide, Appendix A, November 2017, http://caleemod.com/. Accessed December 2017.

53 California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, (2008).

54 United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, (2008).

from water and wastewater from the project are provided in **Table 14**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 14
PROJECT WATER AND WASTEWATER GREENHOUSE GAS EMISSIONS

Land Use	Indoor Water Demand (gal/year) [a]	Outdoor Water Demand (gal/year) [a]	Suppy Water (kwh/Mgal)	Treat Water (kWh/Mgal)	Distribute Water (kWh/Mgal)	Wastewater Treatment (kWh/Mgal)	Annual GHG Emissions ($MTCO_2e$/year) [b]
2023							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	200.9
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	11.5
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	41.8
Subtotal							**254**
2024-2026							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	184.4
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	10.6
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	38.4
Subtotal							**234**
2027-2029							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	172.5
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	10.0
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	35.9
Subtotal							**218**
2030-2052							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	160.8
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	9.4
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	33.5
Subtotal							**204**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[b] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

[c] For emissions calculation purposes, Common Open Space (Interior/Exterior) was categorized in CalEEMod as the land use type General Office Building which is defined as land uses that house multiple tenants where affairs of businesses commercial or industrial organizations or professional persons or firms are conducted. This was determined to provide a reasonably conservative estimate of emissions for these project uses.

SOURCE: ESA 2017.

Operational Area and Stationary

Area sources of GHG emissions resulting from operation of the Project include equipment used to maintain landscaping, such as lawnmowers and trimmers. The combustion of fossil fuels to operate these equipment results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. There are no other substantial stationary sources on-site, such as generators or industrial sized boilers. Residential hearths would not be installed in the project's residential uses.

The emissions of GHGs associated with operational area sources under the Project are calculated using CalEEMod. The emissions for landscaping equipment are based on the size of the commercial and residential land uses, the GHG emission factors for fuel combustion, and the GWP values for the GHGs emitted. Annual GHG emissions from landscaping equipment in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Landscaping Equipment:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times EF_{LE} \times A_{LE} \times GWP)_i \right) \div 10^6 \qquad \textbf{[Equation 5]}$$

Where:
- Units = Number of land use units (same land use type) [DU or 1000 sqft]
- EF_{LE} = GHG emission factor [grams (g)/DU or 1000 sqft/day]
- A_{LE} = Landscaping equipment operating days per year [day/year]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 10^6 = Conversion factor [g/MT]
- i = Summation index

CalEEMod uses landscaping equipment GHG emission factors from the CARB OFFROAD model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003).* [55] CalEEMod estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin.

Stationary sources would include on-site emergency generator with an estimated capacity rated at approximately 708 kilowatts (950 horsepower), which would provide emergency power primarily for lighting and other emergency building systems. Emissions of GHGs would be generated during maintenance and testing operations and emissions were estimated separately outside of the CalEEMod software. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines). Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470. In general, stationary-source emergency generator emissions are calculated as follows:

[55] California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, (6/13/2003), http://www.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_ act.pdf. Accessed September 2017.

Stationary Source Emergency Generator:

$$Emissions_{Diesel}\,[g] = \sum_i (EF \times Pop \times HP \times Load \times Activity)_i \quad \textbf{[Equation 6]}$$

Where:
EF = Emission factor [g/bhp-hr]
Pop = Population [quantity of same equipment type]
HP = Maximum rated horsepower [hp]
Load = Load Factor [dimensionless]
Activity = Hours of operation [hours per day, hours per year]
i = Summation index

The estimated annual emissions from area and stationary sources under the project are provided in **Table 15**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 15
PROJECT AREA AND STATIONARY SOURCE GREENHOUSE GAS EMISSIONS

Emission Source	Annual GHG Emissions [a]
Landscaping Equipment	14
Emergency Generator	19
Total GHG Emissions	**33**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

SOURCE: ESA 2017.

Carbon Sequestration from Vegetation

The Project site includes a number of green spaces that will include a mix of canopy trees and native shrubs, perennials, and ground cover. Canopy trees will provide a source of carbon sequestration that would offer a reduction in GHG emissions produced by the project. Native shrubs, perennials, and ground cover would also contribute to carbon sequestration.

Carbon sequestration was estimated using CalEEMod, which calculates carbon sequestration from vegetation based on the Project's net addition of vegetated land uses, the number of new trees, and the types of trees being planted. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. According the methodology in the CalEEMod User's Guide, carbon sequestration from vegetation are calculated as follows:

Carbon Sequestration from Vegetation (Land Use Change):

$$\text{Total Sequestered } CO_2 = \sum_i (SeqCO_2 \times Area)_i - \sum_j (SeqCO_2 \times Area)_j \quad \textbf{[Equation 7]}$$

Where:
$SeqCO_2$ = Mass of sequestered CO_2 per unit area [$MTCO_2$/acre]
Area = Area of land for specific land use type [acre]
i = Summation index for final land use type
j = Summation index for initial land use type

Carbon Sequestration from Vegetation (Trees):

Total Sequestered $CO_2 = GP \times \sum_i (SeqCO_2 \times Trees)_i$ **[Equation 8]**

Where:
- GP = Growing period for all trees, expressed in years (20)
- $SeqCO_2$ = Annual CO_2 accumulation per tree for species class [$MTCO_2$/tree]
- Trees = Number of net new trees of broad species class
- i = Summation index for broad species class

The Project's planting area of native plants, shrubs, perennials, and ground-cover was modeled using the "grassland" category which is the most applicable vegetation category for the Project. The "grassland" category represents the lowest non-zero carbon sequestration value of the available categories in CalEEMod,[56] thus providing for a conservative estimate of the Project's carbon sequestration from the net addition of native plants, shrubs, perennials, and ground-cover to the Project Site. The Project will provide 137 canopy trees; however, the exact type and species are not known at this Project planning stage. According to the CalEEMod User's Guide, if specific tree types are not known, the "miscellaneous" tree type should be used.[57] Therefore, therefore, the "miscellaneous" tree type option was used per the CalEEMod User's Guide.

The effects of carbon sequestration from canopy trees assumes the IPCC active growing period of 20 years. Accumulation of carbon in biomass decreases as the trees age and would eventually be offset by clipping, pruning, and tree death. Therefore, GHG reductions from carbon sequestration are only applied to the first 20 years of the project's operation. The estimated annual carbon sequestration rate is provided in **Table 16**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 16
CARBON SEQUESTRATION FROM VEGETATION

Reduction Source	Carbon Sequestered ($MTCO_2e$) [a]
Total GHG Reduction	98
Yearly GHG Reduction (20-year growing period) [b]	**5**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

[b] Annual CO_2 sequestration applied over a 20-year period beginning in the Project's first full operational year.

SOURCE: ESA 2017.

Summary of Project GHG Emissions

A summary of the GHG emissions under the project is provided in **Table 17**.

[56] Grassland applies to all grassland as well as woody vegetation and other non-grass vegetation such as herbs and brushes, which are consistent with the types of vegetation (native plants, shrubs, perennials, and ground-cover) proposed for this Project. Cropland and forest have higher carbon sequestration values, but are also less applicable to this Project.

[57] California Air Resources Board, CalEEMod User's Guide, Appendix A, Section 11.2, November 2017, http://caleemod.com/. Accessed December 2017.

TABLE 17
SUMMARY OF ANNUAL GHG EMISSIONS

	Annual GHG Emissions ($MTCO_2e$/year)								
Year	Construc-tion	Electricity	Natural Gas	Mobile	Waste	Water and Waste Water	Area and Stationary	CO_2 Seq. from Net New Vegetation [a]	Total [b]
Const Yr 1	1,262	–	–	–	–	–	–	–	1,262
Const Yr 2	1,678	–	–	–	–	–	–	–	1,678
Const Yr 3	2,666	–	–	–	–	–	–	–	2,666
Const Yr 4 [c]	1,507	781	243	2,895	94	106	14	–	5,640
2023	–	1,875	582	6,716	226	254	33	(5)	9,681
2024	–	1,680	582	6,546	226	234	33	(5)	9,296
2025	–	1,680	582	6,346	226	234	33	(5)	9,096
2026	–	1,680	582	6,178	226	234	33	(5)	8,928
2027	–	1,539	582	6,029	226	218	33	(5)	8,622
2028	–	1,539	582	5,899	226	218	33	(5)	8,492
2029	–	1,539	582	5,785	226	218	33	(5)	8,378
2030	–	1,401	582	5,686	226	204	33	(5)	8,127
2031	–	1,401	582	5,604	226	204	33	(5)	8,045
2032	–	1,401	582	5,529	226	204	33	(5)	7,970
2033	–	1,401	582	5,463	226	204	33	(5)	7,904
2034	–	1,401	582	5,408	226	204	33	(5)	7,849
2035	–	1,401	582	5,363	226	204	33	(5)	7,804
2036	–	1,401	582	5,330	226	204	33	(5)	7,771
2037	–	1,401	582	5,302	226	204	33	(5)	7,743
2038	–	1,401	582	5,281	226	204	33	(5)	7,722
2039	–	1,401	582	5,266	226	204	33	(5)	7,707
2040	–	1,401	582	5,255	226	204	33	(5)	7,696
2041	–	1,401	582	5,247	226	204	33	(5)	7,688
2042	–	1,401	582	5,243	226	204	33	(5)	7,684
2043	–	1,401	582	5,242	226	204	33	–	7,688
2044	–	1,401	582	5,242	226	204	33	–	7,688
2045	–	1,401	582	5,244	226	204	33	–	7,690
2046	–	1,401	582	5,249	226	204	33	–	7,695
2047	–	1,401	582	5,254	226	204	33	–	7,700
2048	–	1,401	582	5,261	226	204	33	–	7,707
2049	–	1,401	582	5,269	226	204	33	–	7,715
2050	–	1,401	582	5,279	226	204	33	–	7,725
2051	–	1,401	582	5,279	226	204	33	–	7,725
2052	–	1,401	582	5,279	226	204	33	–	7,725

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

[b] The Project GHG emissions may be re-evaluated periodically to account for future reductions from the promulgation of state regulations, such as post-2025 model year vehicle emissions standards and post-2030 Renewables Portfolio Standard and other regulations that would reduce Project-related operational GHG emissions but cannot be quantified at this time.

[c] Based on the anticipated Project construction schedule, the Project could be operational during the last 5 months of year 2022. Therefore, estimated operational emissions associated with approximately 5 months of operational activity are included for year 2022.

SOURCE: ESA 2017.

3.3.3 Project GHG Emissions Offsets

Annual emissions of GHGs from the Project will incorporate GHG emission offsets as necessary to achieve a net zero increase in site GHG emissions, relative to the baseline annual GHG emissions, for the estimated Project lifetime. The Project proposes to meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through Project-based or community-based program measures that will reduce GHG emissions in the region. Examples of the types of Project-based or community-based program measures that could be implemented are as follows:

- Install solar photovoltaic panels on Project building rooftops based on available physical roof space taking into account space dedicated for rooftop amenities, open space/landscaping, decks/pool areas, and space required for rooftop equipment, such as heating, ventilation, and air conditioning units.
- Purchase certified green-power from the local utility provider to offset Project-related GHG emissions from electricity demand.
- Coordinating with property owners in the City of Los Angeles or in other cities or communities in California for the installation of rooftop solar photovoltaic panels in accordance with state and local permitting standards on existing buildings, parking structures, carports, or other facilities.
- Seek opportunities for offsetting GHG emissions from existing sources in the City of Los Angeles or in other cities or communities in California. Examples include coordinating with local transportation agencies and property owners and establishing electric vehicle supply equipment (EVSE) at park-and-ride lots or other appropriate locations, coordinating with local transportation agencies and school districts and replacing diesel- or gasoline-fueled buses with less-polluting technologies such as compressed natural gas, electric, hybrid-electric, fuel cell, or other commercially available technologies, implementing methane capture and destruction programs at dairy farms, or other GHG emissions offset programs.
- Plant new drought-tolerant, high-carbon sequestering, and/or native trees of appropriate size and type at off-site locations such as parks in the City of Los Angeles or in other cities or communities in California, that would result in a net sequestration of CO_2 emissions.
- Purchase carbon credits from a reputable carbon market. Priority should be given to those credits generated within the City of Los Angeles, and in decreasing preference, credits generated within the region, in-state, and out-of-state.

Through implementation of the Project-based or community-based GHG reduction program, the Project will meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG emissions. The acquisition of carbon credits as part of the Project-based or community-based GHG reduction program will serve to ensure that all projected additional GHG emissions are offset. If acquiring carbon credits, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits from a qualified GHG emissions broker (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to achieve a net zero increase in site GHG emissions. Consistent with SCAQMD's definition of the "life of

the project" for CEQA GHG purposes, provided in SCAQMD's Governing Board Agenda Item 31, December 5, 2008, the project would be required to offset emissions over a 30-year lifetime. The SCAQMD recommends that offsets should have a 30-year project life, should be real, quantifiable, verifiable, and surplus and will be considered in the following prioritized manner: (1) project design feature/on-site reduction measures; (2) off-site within the neighborhood; (3) off-site within the SCAQMD jurisdiction; (4) off-site within the State; (5) off-site out-of-State. The project would obtain offsets following this prioritization. The necessary offsets are summarized below in **Section 4.0**. Offsets are estimated for a project useful lifetime of 30 years, which is recommended as a presumed project lifetime per SCAQMD guidance.[58]

58 South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2. Accessed September 2017.

SECTION 4
Comparison of Project to Baseline Condition

Table 18 provides a summary of the determination of net additional GHG emissions comparing the existing site GHG emissions and the Project GHG emissions including the Project's total construction-related GHG emissions. Based on these GHG emissions estimates, the Project would not result in net additional contemporaneous GHG emissions compared to the baseline annual operational emissions at any time.

TABLE 18
EVALUATION OF NET GHG EMISSIONS FOR THE PROJECT

Year	Baseline Annual Operations	Project Total	Project GHG Reductions from Offsets [a]	Net Change from Baseline
Const Yr 1	0	1,262	(1,262)	0
Const Yr 2	0	1,678	(1,678)	0
Const Yr 3	0	2,666	(2,666)	0
Const Yr 4 [b]	195	5,640	(5,172)	0
2023	468	9,681	(9,213)	0
2024	468	9,296	(8,828)	0
2025	468	9,096	(8,628)	0
2026	468	8,928	(8,460)	0
2027	468	8,622	(8,154)	0
2028	468	8,492	(8,024)	0
2029	468	8,378	(7,910)	0
2030	468	8,127	(7,659)	0
2031	468	8,045	(7,577)	0
2032	468	7,970	(7,502)	0
2033	468	7,904	(7,436)	0
2034	468	7,849	(7,381)	0
2035	468	7,804	(7,336)	0
2036	468	7,771	(7,303)	0
2037	468	7,743	(7,275)	0
2038	468	7,722	(7,254)	0
2039	468	7,707	(7,239)	0
2040	468	7,696	(7,228)	0
2041	468	7,688	(7,220)	0
2042	468	7,684	(7,216)	0
2043	468	7,688	(7,220)	0
2044	468	7,688	(7,220)	0
2045	468	7,690	(7,222)	0

Year	Baseline Annual Operations	Project Total	Project GHG Reductions from Offsets [a]	Net Change from Baseline
2046	468	7,695	(7,227)	0
2047	468	7,700	(7,232)	0
2048	468	7,707	(7,239)	0
2049	468	7,715	(7,247)	0
2050	468	7,725	(7,257)	0
2051	468	7,725	(7,257)	0
2052	468	7,725	(7,257)	0

[a] The quantity of GHG emissions offsets may be re-evaluated periodically to account for future reductions from the promulgation of state regulations, such as post-2025 model year vehicle emissions standards and post-2030 Renewables Portfolio Standard and other regulations that would reduce Project-related operational GHG emissions but cannot be quantified at this time.

[b] Based on the anticipated Project construction schedule, the Project could be operational during the last 5 months of year 2022. Therefore, estimated operational emissions associated with approximately 5 months of operational activity are included for year 2022.

SOURCE: ESA 2017.

The Project will commit to implementing Project-based or community-based program measures, as discussed in the previous section, that will achieve no net increase in GHG emissions. As such, the Project would not result in net contemporaneous GHG emissions compared to the Baseline Condition, taking into account GHG Project-based or community-based program measures and offsets. Therefore, this analysis demonstrates that the Project meets the GHG emissions requirements of the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.) and would result in no net GHG emissions.

Application for Environmental Leadership Development Project

1045 Olive, LLC

1045 Olive Street, Los Angeles, California 90015

December 2017



Application for Environmental Leadership Development Project

Project Title: 1045 Olive Street

Project Applicant: 1045 Olive, LLC

Project Location: Los Angeles, California

PROJECT PROPOSAL

1045 Olive, LLC (Applicant) proposes a new mixed-use development (Project) on an approximately 0.96-acre site located at the northwest corner of Olive Street and 11th Street (Project Site). Four existing single story commercial buildings would be removed and replaced with a new 751,777 square foot (net) mixed-use high-rise building. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[1] The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The residential units would include a large range of housing types to serve a broad section of the housing market, including singles, small families, and empty-nesters as well as few larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. Approximately two thirds of the units would be smaller than 2-bedroom in size and approximately one third of the units would be 2-bedrooms or larger in size. The residential units would be mostly located within the residential tower; however, approximately 40 units would be located along the top five levels of the Podium facing Olive Street and 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The commercial uses would meet needs of neighborhood residents. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing environmental impacts, including for traffic and greenhouse gas (GHG) emissions, this assessment conservatively

[1] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.[2]

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

PROJECT SITE

The Project Site is located at 1045 Olive Street on the northwest corner of Olive Street and 11th Street in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. The size of the Project Site will be reduced during Project implementation to increase the width of the alley and adjacent sidewalks to meet current standards. The post dedication Site would be 37,172 square feet.

Uses within the block that lie adjacent to the Project include a 7-story mixed-use development to the north, 7-story mixed-use development to the northwest, and a two story commercial building and 25-story mixed-use high-rise building to the west. Adjacent development across Olive Street to the east includes single story commercial uses; and across 11th Street to the south includes a surface parking. Surrounding development includes a large array of newer mixed use development, and older commercial, office, residential and warehouse uses.

2 Calculations included in the analysis of environmental impacts for this Project conservatively assume that all of the commercial space would be used for restaurant uses. This provides for conservative analyses as restaurant uses generate greater impacts than retail uses. For example, restaurant uses generate greater levels of traffic and greater consumption of resources such as water consumption.

The Project vicinity is highly urbanized and generally built-out. The South Park community of Downtown Los Angeles is one of nine-districts in the Central City Community Plan area, and is representative of the Downtown Center with its concentration of government-related uses, high- and mid-rise office buildings, residential buildings, hotels, retail uses, museums, and cultural districts. The South Park area includes a mix of residential, medical, commercial, and retail uses; with a substantial concentration of housing located next to and over support services, such as retail and commercial developments that provide employment opportunities for area residents.

The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is also located within walking distance (approximately 0.27 miles) east of the Figueroa Street Corridor, the focus of the MyFigueroa Streetscape project that is transforming the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFigueroa project extends eastward from Figueroa Street along 11th Street adjacent to the Project Site, ending at Broadway. Figueroa Street in the Project vicinity is also the focus of regional activity including LA LIVE, an entertainment, hotel, and residential complex that is a Citywide focus of entertainment activity; the Staples Center Arena, a multipurpose sports arena which is home to the Los Angeles Clippers, Los Angeles Kings, Los Angeles Lakers and Los Angeles Sparks; and the Los Angeles Convention Center, which regularly features conventions, trade shows, and exhibitions.

CONSISTENCY WITH STATUTORY REQUIREMENTS FOR CEQA STREAMLINING

This application was prepared in accordance with the Governor's Guidelines for Streamlining Judicial Review under the California Environmental Quality Act (CEQA), which is provided on the Governor's Office of Planning and Research Website (http://opr.ca.gov/s californiajobs.php).

The following information (in addition to all exhibits) is submitted to establish that the Project satisfies the statutory requirements for CEQA streamlining as further informed by the criteria set forth in the Governor's Guidelines under California Public Resources Code Section 21178 et seq.

Information to show the project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature.

The Project is a mixed-use development that is both residential and commercial in nature, located on property zoned for high density residential development and commercial uses. As previously

stated, the Project would include 794 multi-family residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level.

The residential units would include a large range of housing types to serve a broad section of the housing market, including singles, small families, and empty-nesters as well as few larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. The Project's commercial uses would meet needs of neighborhood residents. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses.

Amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

Proposed site plans for the Project are attached as **Exhibit 1**. Renderings of the Project are attached as **Exhibit 2**.

Information to show the project will qualify for LEED Gold Certification. The application shall specify those design elements that make the project eligible for LEED Gold Certification, and the applicant shall submit a binding commitment to delay operating the project until it receives LEED Gold Certification. If, upon completion of construction, LEED Gold Certification is delayed as a result of the certification process rather than a project deficiency, the applicant may petition the Governor to approve project operation pending completion of the certification process.

The Project will encourage design and construction decisions that have the potential to reduce energy and water use, promote resource conservation through redevelopment and the sourcing of local construction materials and create healthier indoor environments. The Project will achieve the United States Green Building Standards (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification. Achieving LEED Gold Certification requires obtaining at least 60 points satisfying seven categories, which can be organized into three overarching themes: Siting and Transportation, Building Performance, and Material Selection. The end result is a positive impact on resource conservation, the built environment, and the local community.

Siting, Transportation, and Mixed Use: This overarching theme addresses preservation of undeveloped property by encouraging infill development, adaptive re-use of existing historic buildings, and facilitating pedestrian activity by integrating a diversity of uses and providing convenient access to public transportation. The Project is located in a prime urban location close to transit, entertainment and employment and will integrate a range of residential and commercial uses around public and private open spaces.

The Project will be designed as a high-density residential building with neighborhood serving commercial uses on a previously developed site in close proximity (i.e., within a one-half mile) to a number of services including restaurant, grocery, laundry/cleaner, movie theater, fitness center uses and other service uses. The Project would also incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent underground parking and incorporate heat island reduction strategies for the Project roof areas.

The Project's placement within Downtown Los Angeles results in increased efficiencies with respect to the siting and transportation in the area. The Project is located less than 0.5 miles from Metro Blue Line and Expo Line station at Pico Boulevard, which connects to the 7th Street/Metro Center and the Red Line and Purple Line. The Project is also located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. Additionally, the Project will provide short- and long-term bicycle parking for bicycle commuters to facilitate "last mile" connectivity to nearby multi-modal transit options.

The Project would promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

Building Performance: This overarching theme emphasizes water and energy efficiency to maximize livability with reduced resource consumption. Consideration will be taken to select high-performance materials, fixtures and appliances to optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements and water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would include other specific design features that would be incorporated into the Project design to enhance energy efficiency and sustainability. Wraparound-cantilevered balconies would be provided on every residential level that would provide shade and minimize solar gain throughout the building. Further considerations regarding energy efficiency and sustainability include native plants and drip/subsurface irrigation systems, individual metering or sub metering for water use, leak detection systems, rainwater harvesting and provisions for electric vehicle charging (wiring for 5 percent of all parking spaces and pre-wiring for 20 percent of all parking spaces).

Material Selection: This overarching theme attempts to reduce the building's life cycle impact through the selection of upcycled, recycled and locally sourced materials where feasible and also minimize exposure to environmental toxins by choosing low volatile organic compound (VOC) materials. A few practices being considered are using salvaged, refurbished or reused materials for at least 5 percent of the total value of materials on the Project, using materials with recycled content for at least 10 percent of the total value of materials on the Project, using refrigerants that minimize ozone depletion, using adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of VOCs and/or other air quality pollutants, and providing on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable

materials and adequate storage areas for such containers during construction and after the building is occupied. Additionally, a construction and demolition waste management plan will maximize the recycling or salvage of nonhazardous construction debris.

Green Building Features: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED required prerequisites.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

The GHG Emissions Offset Approach for the 1045 Olive Street Project / Commitment Letter and LEED Measures, dated December 2017, is attached as **Exhibit 3**.

Information to show the project will achieve at least 15 percent greater transportation efficiency than comparable projects. "Transportation efficiency" is defined as the number of vehicle trips by employees, visitors, or customers to the project divided by the total number of employees, visitors, and customers. The applicant shall provide information setting forth its basis for determining and evaluating comparable projects and their transportation efficiency, and how the project will achieve at least 15 percent greater transportation efficiency. For the purpose of this provision, comparable means a project of the same size, capacity and location.

The Project is considered an "infill" project, as it is replacing existing commercial uses with a high-density, mixed-use development. The Project Site is located in the South Park community of Downtown Los Angeles. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110), which provide regional access to the Site.

The Project includes a mix of residential and neighborhood serving commercial uses (restaurant and retail) located at the ground level, which would provide convenient local destinations for the residential element of the Project without having to drive to other locations. The mix of uses on the Project Site provides for internal capture of vehicle trips that would otherwise occur without the mix of uses. The Project is also located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the LADOT DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project would also implement a Traffic Demand Management (TDM) Program that would provide new on-site residents and employees with transit information, on-site bicycle amenities (bicycle racks, lockers, showers, etc.), unbundle residential parking, and other measures to encourage the use of non-auto modes and reduce vehicle trips to and from the Project Site.

The combined effects of the Project's urban infill location along major corridors, proximity to transit and pedestrian amenities, and proposed TDM program would reduce the Project's anticipated daily vehicular trip generation estimates by approximately 32 percent as compared to a comparable mixed-use project. Therefore, the Project results in substantially more than the 15 percent greater transportation efficiency requirement.

The AB 900 Traffic Assessment for the 1045 Olive Street Project, dated September 2017, is attached as **Exhibit 4**.

Information to show the project is located on an infill site, defined at Public Resources Code Section 21061.3, and in an urbanized area, as defined at Public Resources Code Section 21071

The Project is located on an infill site. Under Public Resources Code Section 21061.3, an "infill site" is defined as a site that "has been previously developed for qualified urban uses." In turn, a "qualified urban use" is defined, pursuant to Public Resources Code Section 21072, as "any residential, commercial, public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses." The Project Site meets this definition as it is currently developed with four existing commercial buildings. Additionally, the Project is located in an "urbanized area," which is defined under Public Resources Code Section 21071 as "an incorporated city" that meets the criteria of having a population of at least 100,000 persons. The City of Los Angeles has an estimated population of 4,041,707 in 2017 according to the 2017 estimates prepared by the California Department of Finance. The Project would represent an urban infill development since it would be located on a site that meets the definition of an infill site in an urbanized area and would be considered a qualified urban use.

For a project that is within a metropolitan planning organization for which a sustainable communities strategy or alternative planning strategy is in effect, information to show the project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets. For the purposes of this provision, "in effect" means that the sustainable communities strategy or the alternative planning strategy has been adopted by the metropolitan planning organization, and that the Air Resources Board has accepted the metropolitan planning organization's determination that the sustainable communities strategy or alternative planning strategy meets the adopted greenhouse gas reduction targets and is not the subject of judicial challenge.

California Senate Bill (SB) 375 was passed by the State Assembly on August 25, 2008 and signed into law by the Governor on September 30, 2008. This legislation links regional planning for housing and transportation with the greenhouse gas (GHG) reduction goals outlined in California Assembly Bill (AB) 32. Under SB 375, each Metropolitan Planning Organization (MPO) is required to adopt a Sustainable Community Strategy to encourage compact development that reduces passenger vehicle miles traveled (VMT) and trips so that the region will meet a target, created by the California Air Resources Board (CARB), for reducing GHG emissions.

The Project is within the jurisdiction of the Southern California Association of Governments (SCAG). On April 4, 2012, SCAG's Regional Council adopted the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future (2012–2035 RTP/SCS). On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 RTP/SCS: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life. The 2016-2040 RTP/SCS reaffirms the land use policies that were incorporated into the 2012-2035 RTP/SCS. On June 28, 2016, CARB accepted SCAG's quantification of GHG emission reductions from the 2016 SCS and the determination that the 2016 SCS would, if implemented, achieve the 2020 and 2035 GHG emission reduction targets established by CARB.[3]

The purpose of the SCAG RTP/SCS is to achieve its assigned regional per capita GHG reduction targets for the passenger vehicle and light-duty truck sector established by CARB pursuant to SB 375. SCAG's RTP/SCS plans for regional population growth using smart land use strategies. As part of the SCS/RTP, "transportation network improvements would be included, and more compact, infill, walkable and mixed-use development strategies to accommodate new region's growth would be encouraged to accommodate increases in population, households, employment,

3 CARB, Executive Order G-16-066, SCAG 2016 SCS ARB Acceptance of GHG Quantification Determination, April 2016 (http://www.arb.ca.gov/cc/sb375/scag_executive_order_g_16_066.pdf).

and travel demand."[4] Moreover, the RTP/SCS states that while "[p]opulation and job growth would induce land use change (development projects) and increase VMT, and would result in direct and indirect GHG emissions," the RTP/SCS would "supports sustainable growth through a more compact, infill, and walkable development pattern."[5] Accordingly, the RTP/SCS outlines the region's plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Additionally, the RTP/SCS demonstrates the region's ability to attain and exceed the GHG emission-reduction targets set forth by CARB. The majority of new housing and job growth is focused in high-quality transit areas (HQTA) and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development (TOD). This overall land use development pattern supports and complements the proposed transportation network that emphasizes system preservation, active transportation, and transportation demand management TDM measures.

Adopted strategies for the reduction of GHG emissions, as part of the 2012–2035 RTP/SCS and the 2016-2040 RTP/SCS, have the potential to significantly change the region's land use and travel patterns to achieve GHG reductions by 2020, 2035, and 2040. Such strategies include (but are not limited to) the following:

- Compact growth in areas accessible to transit;
- Half of all new development on three percent of the region's land use;
- More multi-family housing, jobs, and housing closer to transit;
- New housing and job growth focused in HQTAs; and
- Investments in biking and walking infrastructure to improve active transportation options and transit access.

Consistent with the RTP/SCS, the Project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services provided by the nearby Metro Blue Line and Expo Line station at Pico Boulevard, which provides convenient access to locations within Downtown Los Angeles, Long Beach, Culver City, Santa Monica, and direct connections to the Metro Red and Purple lines that provide transit service to a multitude of locations through the Los Angeles region including Hollywood, Koreatown, and Universal City. The Project would be located within a quarter-mile of public transportation, including existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The SCAG objective of locating multi-family housing in proximity to jobs and transit would be accomplished by the Project. New housing and job growth, as a result of the completed

4 Southern California Association of Governments, Draft Program Environmental Impact Report – 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, (2015), page 3.8-35.

5 Ibid, page 3.8-36.

Project, is focused in a HQTA, which SCAG defines as an area within a half mile of a well-serviced transit stop. A well-service transit stop is one which has a 15 minute or less service frequency during peak commute hours."[6] As discussed above, the Project would be consistent with this strategy.

The Project would also be consistent with the general land use designation, density, and building intensity outlined in the SCAG 2016–2040 RTP/SCS. Using data collected from local jurisdictions, including General Plans, SCAG categorized existing land use into "land use types," then combined these land use types into 35 place types, and then classified sub-regions into one of three land use development categories: urban, compact, or standard. SCAG used each of these three categories to describe the conditions that exist and/or are likely to exist within each specific area of the region.[7]

SCAG identified the existing General Plan land uses as Multi-Family Residential (SCAG Data Request Maps, refer to the attached **Figure 1**). After converting this data into Scenario Planning Zone-level place types, SCAG categorized the area surrounding the Project as an urban area.[8]

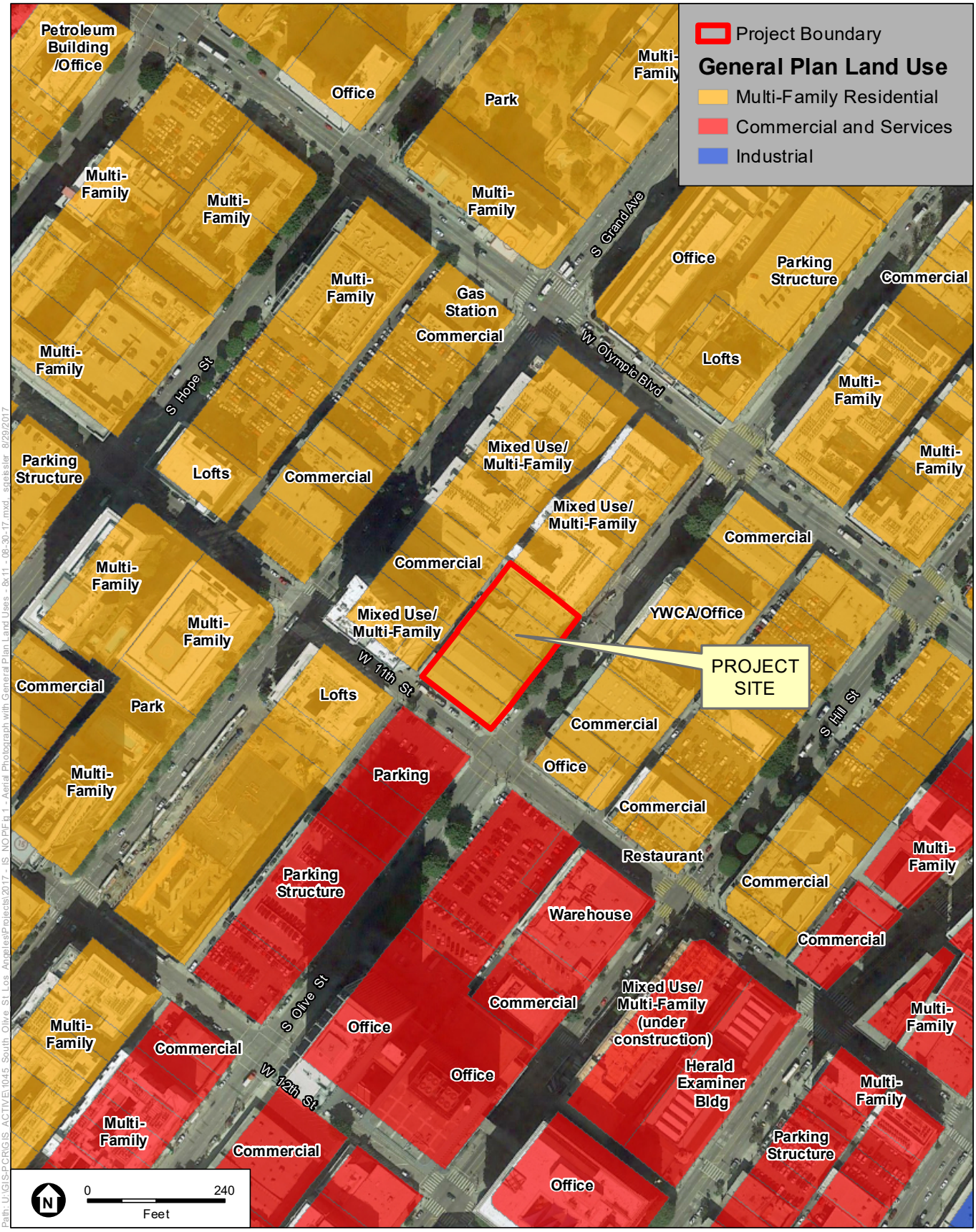
The RTP/SCS defines urban areas as "often found within and directly adjacent to moderate and high density urban centers. Nearly all urban growth in these areas would be considered infill or redevelopment. The majority of housing is multi-family and attached single-family (townhome), which tend to consume less water and energy than the large types found in greater proportion in less urban locations. These areas are supported by high levels of regional and local transit service. They have well-connected street networks, and the mix and intensity of uses result in a highly walkable environment. These areas offer enhanced access and connectivity for people who choose not to drive or do not have access to a vehicle."[9]

6 Technical Evaluation of the Greenhouse Gas Emission Reduction Quantification for the Southern California Association of Governments' SB 375 Sustainable Communities Strategy, dated May 2012. Document located on the ARB website: http://www.arb.ca.gov/cc/sb375/scag_scs_tech_eval0512.pdf.

7 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, pages 20-21, (2016). Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 2017.

8 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Exhibit 13 Forecasted Regional Development Types (2012) – Los Angeles City Subregion, (2015). Available at: http://scagrtpscs.net/Documents/2016/draft/d2016RTPSCS_SCSBackgroundDocumentation.pdf. Accessed September 2017.

9 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, page 20, (2016). Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 2017.



SOURCE: Google Earth, 2016, SCAG 2012.

1045 Olive Street

Figure 1
Aerial Photograph with General Plan Land Uses

ESA

The SCAG urban land development category comprises the following urban footprint scenario models, including urban mixed use, urban residential, urban commercial, city mixed use, city residential, and city commercial.[10, 11] The Project would consist of multi-family residential uses with ground- and mezzanine-level neighborhood serving commercial uses and thus would be consistent with the range of place types within the SCAG urban land development category.

Additionally, the RTP/SCS states that "urban mixed-use districts are exemplified by a variety of intense uses and building types. Typical buildings are between 10 and 40+ stories tall, with offices and/or residential uses and ground-floor retail space. Parking is usually structured below or above ground. Workers, residents, and visitors are well served by transit, and can walk or bicycle for many of their transportation needs." The land use mix for the urban mixed-use place type is approximately 18 percent residential, 16 percent employment, 45 percent mixed-use, and 21 percent open space/civic.[12]

Urban residential uses are the most intense residential-focused type, and are typically found within or adjacent to major downtown areas. They include high-rise and mid-rise residential towers, with some ground-floor retail space. Parking is usually structured below or above ground. Residents are well served by transit and can walk or bicycle for many of their daily needs.[13]

City mixed-use areas are transit oriented and walkable, and contain a variety of uses and building types. Typical buildings are between 5 and 30 stories tall, with ground-floor retail space and offices and/or residential on the floors above. Parking is usually structured below or above ground. The land use mix for this place type is typically approximately 28 percent residential, 17 percent employment, 35 percent mixed use, and 20 percent open space/civic. The residential mix is composed of 97 percent multi-family and 3 percent townhomes. The average total net floor-area ratio (FAR) is 3.4, floor count ranges from 3 to 40 stories, and gross density ranges from 10 to 75 households per acre.[14]

The RTP/SCS describes city residential place types as "dominated by mid- and high-rise residential towers, with some ground-floor retail space, and offices and/or residences on the floors above. Parking is usually structured below or above ground. Residents are well served by transit, and can walk or bicycle for many of their daily needs." The land use mix for this place type is typically approximately 65 percent residential, 4 percent employment, 11 percent mixed use, and 20 percent open space/civic. The residential mix is 97 percent multi-family and 3 percent

10 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 9, (2016). Available at: http://www.scagrtpscs.net/Documents/2016/supplemental/LDC_PlaceType.pdf. Accessed September 2017.

11 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 6, (2016). Available at: http://scagrtpscs.net/documents/2016/supplemental/UrbanFootprint_PlaceTypesSummary.pdf. Accessed September 2017.

12 Ibid.

13 Ibid.

14 Ibid.

townhome. The average total net FAR is 2.9, floor count ranges from 5 to 40 stories, and the gross density ranges from 35 to 37 households per acre.[15]

The Project consists of the development of a building containing mixed-use residential and commercial units in the South Park community of the city of Los Angeles. Surrounding land uses include a mixed-use development to the northeast of the Project site, a high-rise building to the west, commercial to the east, and a parking lot to the south.

The Project Site (1045 Olive Street) is currently occupied by four commercial buildings. The Project would consist of multi-family residential and ground- and mezzanine-level neighborhood serving commercial uses in a 61-story tower atop a nine level podium structure. The Project would include 6 subterranean and 8 above-grade parking levels within the podium, creating 802 residential vehicle parking spaces. Overall, the Project would include 794 residential units, and approximately 12,504 square feet of commercial space. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The Project is located within the Central City Community Plan area and is designated as High Density Residential and is zoned [Q]R5-4D-O. The R5 zoning designation permits the development of high density residential development. The "[Q]" Condition allows commercial uses to be included along with the residential development provided the floor area for the commercial uses does not exceed a 2:1 FAR. The Height District No. 4 permits a FAR of 13:1. However, the "D" limitation limits the floor area to a maximum of 6:1 FAR, unless additional floor area is permitted through a Transfer of Floor Area (TFAR). The Project is located within a designated Transit Priority Area and as a mixed-use Project qualifies for the 13:1 FAR pursuant to Section 14.5 of the Los Angeles Municipal Code (LAMC) as a Transit Area Mixed Use Project that allows the proposed FAR to be based on the area contained within the centerlines of Olive Street 11th Street, and the abutting alley. Therefore, the Project is consistent with the SCAG urban land development category and consistent with the land use designation.

Information to show that the applicant has notified a lead agency prior to the release of the draft environmental impact report that it intends to certify a project for streamlined environmental review under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011. Written acknowledgment from the lead agency of the applicant's intent to apply for certification may be used to satisfy this requirement.

Prior to the circulation of the Draft Environmental Impact Report and well before approval of the Project entitlements, the City of Los Angeles, lead agency for the Project, has been notified that the Applicant is seeking certification for the Project under the Jobs and Economic Improvement

15 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 6, (2016). Available at: http://scagrtpscs.net/documents/2016/supplemental/UrbanFootprint_PlaceTypesSummary.pdf. Accessed September 2017.

Through Environmental Leadership Act of 2011. The letter of acknowledgement and binding agreement between the Applicant and the City of Los Angeles is provided in **Exhibit 7**.

Information to show that the project will result in a minimum investment of $100 million in California through the time of completion of construction.

The Project will far exceed the $100 million minimum investment as required by Public Resources Code section 21183(a). In addition to the roughly $10 million in direct public benefit payments, the Project entails the demolition of 35,651 square feet of commercial buildings and construction of a 70-story urban mixed-used retail and residential project consisting of 794 apartments and 12,504 square feet of ground-level neighborhood serving commercial space. Based on recent construction cost information, the Project's hard costs are estimated to be over $300 million. The fiscal impacts and economic benefits are summarized in **Table 1** below.

TABLE 1
OVERVIEW OF FISCAL IMPACTS AND ECONOMIC BENEFITS

	Construction (One-Time/Short-Term)	Ongoing Operation (Annual)
Employment	**4,720 Jobs**	**550 Jobs**
Labor Income	**$327,400,000**	**$20,500,000**
Economic Output	**$808,200,000**	**$67,100,000**
State and Local Taxes	**$33,200,000**	**$8,600,000**
City of Los Angeles and other Local Cities	$3,800,000	$1,400,000
County of Los Angeles	$8,600,000	$4,800,000
State	$20,800,000	$2,400,000
Federal Taxes	**$65,700,000**	**$5,600,000**

SOURCE: Los Angeles Economic Development Corporation (LAEDC) Institute for Applied Economics, Project 1045 Olive – An Economic and Fiscal Impact Analysis, December 2017.

A detailed Fiscal Impact and Economic Benefit Analysis for the Project, dated December 2017, is attached as **Exhibit 5**.

Information to show that the project will satisfy the prevailing and living wage requirements of Public Resources Code section 21183(b).

The Project will create high-wage, highly skilled jobs that pay prevailing wages and living wages and will comply with all provisions of Public Resources Code Section 21183(b) as ordered. As defined in Section 21183(b)(1), "jobs that pay prevailing wages" means that all construction workers employed in the execution of the project will receive at least the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations pursuant to Sections 1773 and 1773.9 of the Labor Code. The Project Applicant will include this requirement in all contracts for the performance of the work.

As per Section 21183(b)(2)(B), the obligation of the contractors and subcontractors to pay prevailing wages may be enforced by the Labor Commissioner through the issuance of a civil wage and penalty assessment pursuant to Section 1741 of the Labor Code, which may be reviewed pursuant to Section 1742 of the Labor Code, within 18 months after the completion of the project, or by an underpaid worker through an administrative complaint or civil action. Section 21183(b)(2)(B) does not apply if a project labor agreement is in place with enforcement through an arbitration process. The Project has not entered into a project labor agreement; therefore, enforcement is subject to the provisions of Section 21183(b)(2)(B).

Information establishing that the project will not result in any net additional greenhouse gas emissions. This information includes (1) a proposed methodology for quantifying the project's net additional greenhouse gas emissions, and (2) documentation that quantifies both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and quantifies the net emissions of the project after accounting for any mitigation measures. This information is subject to a determination signed by the Executive Officer of the Air Resources Board that the project does not result in any net additional greenhouse gas emissions, following the procedures set forth in section 6 of the Governor's Guidelines.

The Project will not result in any net additional GHG emissions. The proposed methodology for quantifying the project's GHG emissions is attached as **Exhibit 6**.

Prior to the onset of construction activity, the existing uses will be vacated and all facilities will cease to operate. The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. These existing uses would be demolished and removed to allow for development of the Project. Given the physical space limitations of the Project Site, the entire site would be fully built out prior to occupancy. Thus, the project would not result in simultaneous construction and operation GHG emissions from partial occupancy during construction.

Construction of the project would result in one-time GHG emissions of carbon dioxide (CO_2) and smaller amounts of methane (CH_4) and nitrous oxide (N_2O) from heavy-duty construction equipment, haul trucks, and worker vehicles. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road and on-road emissions factors. The emissions are estimated using the California Emissions Estimator Model (CalEEMod), which incorporates the CARB off-road emissions factor model, OFFROAD, and the on-road emissions factor model, EMFAC. The output values used in this analysis are adjusted to be project-specific based on expected equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year. The CalEEMod tool provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Since a specific construction contractor(s) has not yet been

retained for the project, specific equipment specifications are not yet known. Therefore, air district recommended default equipment and vehicle horsepower ratings and load factors provided in CalEEMod are used in this assessment. The use of these CalEEMod factors is recognized as providing a reasonably conservative estimate of a project's construction emissions. Construction of the project would occur over a number of phases and include activities such as demolition, debris and soil hauling, building construction, architectural coating, and paving. The construction phases are not independent of each other, as there may be overlap and efficiency built into the construction process. Information regarding the activities that would occur during these phases is provided below:

- **Demolition:** This phase is anticipated to begin as early as 2019 and last for approximately one month. If construction commences at a later date, this assessment would be considered conservative as future year emission factors tend to decline in future years. Construction equipment would include a concrete saw, loader, haul trucks, jackhammer, sweeper/scrubber and other construction equipment.
- **Site Preparation:** This phase is anticipated to occur during demolition and last for approximately one month. Construction equipment would include a concrete saw, excavator, and sweeper/scrubber.
- **Grading and Excavation:** This phase is anticipated to have some overlap with the demolition and site preparation phase and last for approximately four months. Construction equipment would include a backhoe, drill rig, excavators, haul trucks, loaders, and sweeper/scrubber. Up to approximately 80,000 cubic yards of soil would be excavated and exported.
- **Utilities/Trenching:** This activity is anticipated to have some overlap with grading and excavation and last for approximately 3 months. During this phase, trenching for site utilizes would occur. Construction equipment would include a backhoe and sweeper/scrubber.
- **Foundation/Concrete Pouring:** This activity is anticipated to have some overlap with grading and excavation and utilities/trenching and would be on-going through building construction activities for approximately 2.5 years. During this activity, the building foundations would be prepared and concrete pouring for various building and Project Site elements would occur. Construction equipment would include a concrete trucks, backhoe, crane, forklift, and sweeper/scrubber.
- **Building Construction:** This phase is anticipated to begin after grading and excavation and after the building foundations have been prepared and last for just over 2 years. During this phase, the building would be constructed. Construction equipment would include cranes, forklifts, sweeper/scrubber, and material/vendor supply trucks.
- **Paving:** This activity is anticipated to last for approximately 2 months and occur during the building construction phase. During this activity, paving materials would be poured during construction of the buildings and related features and the surfaces would be paved. Construction equipment would include a backhoe, sweeper/scrubber, and other equipment.
- **Architectural Coating:** This activity is anticipated to last for approximately 2 years and occur during the building construction phase. During this activity, the interior and exterior coating would be applied to the residential and commercial uses as the floors are built out. Specific coating equipment would include an air compressor and forklift.

Operation of the Project would generate GHG emissions from vehicles traveling to and from the site, area sources (landscaping equipment and hearths) energy demand (electricity and natural gas), water demand, and solid waste generation. Physical and operational land use characteristics and green building features for which sufficient data is available to quantify the reductions from building energy and resource consumption are accounted for in the quantitative analysis, and include but are not limited to the following measures described below.

Land Use Characteristics: The Project includes a mix of residential and neighborhood serving commercial uses (restaurant and retail) located at the ground level, which would provide convenient local destinations for the residential element of the Project without having to drive to other locations. The mix of uses on the Project Site provides for internal capture of vehicle trips that would otherwise occur without the mix of uses. The Project is also located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. The Project is located in an area well served by multi-modal transportation options and in close proximity to services, which reduces VMT from private automobiles. The Project Site is less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard, which provides convenient access to locations within Downtown Los Angeles, Long Beach, Culver City, Santa Monica, and direct connections to the Metro Red and Purple lines that provide transit service to a multitude of locations through the Los Angeles region including Hollywood, Koreatown, and Universal City. The project would be located within a quarter-mile of public transportation, including existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is also an infill location in close proximity (i.e., within a one-half mile) to a number of services including restaurant, grocery, laundry/cleaner, movie theater, fitness center uses and other service uses. The Project would also implement a TDM Program that would provide new on-site residents and employees with transit information, on-site bicycle amenities (bicycle racks, lockers, showers, etc.), unbundle residential parking, and other measures to encourage the use of non-auto modes and reduce vehicle trips to and from the Project Site. These characteristics result in a substantial reduction in VMT compared to the regional average.

Green Building Features: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. Green building and LEED measures include the following.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

- The Project will optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED required prerequisites.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

To achieve the goal of the Project not resulting in any net additional GHG emissions, the Project would implement GHG reduction measures and programs that may include community-based programs that reduce sources of GHG emissions in the regions. These may include installing solar panels on existing rooftops and carports or other similar community-based measures. The Project may also purchase green-power to offset the GHG emissions from the Project's building electricity demand, obtain GHG credit offsets, or other similar types of GHG reductions. Detailed GHG emissions calculations demonstrating a net zero increase in GHG emissions is attached as **Exhibit 6**.

Information documenting a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183(d) (all mitigation measures will be conditions of approval and enforceable, and environmental mitigation measures will be monitored and enforced for the life of the obligation), (e) (applicant will pay costs for hearing by Court of Appeal), and (f) (applicant will pay costs of preparing the administrative record).

SB 734 (effective January 1, 2014) amended the AB 900 Guidelines, regarding the documentation of a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183 (d) (e) and (f), to remove the need for a binding agreement prior to the release of the Draft Environmental Impact Report. Section 21181 as amended by AB 246 requires the Governor to certify the project as an environmental leadership development project eligible for streamlining prior to January 1, 2020.

The letter of acknowledgement and binding agreement between the Applicant and the City of Los Angeles is provided in **Exhibit 7**.

Information per Public Resources Code 21184.5 as amended by SB 734 to show the project is providing unbundled parking for residential dwelling units, except for affordable dwelling units.

The project will provide unbundled parking for the residential dwelling units.

Information per Public Resources Code 21183(d) to show the project demonstrates compliance with the requirements of Chapters 12.8 (commencing with Section 42649) and 12.9 (commencing with Section 42649.8) of Part 3 of Division 30, as applicable.

With respect to municipal solid waste, the State has enacted regulations to address solid waste services and recycling. California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649 et seq. requires businesses that produce four cubic yards or more of solid waste per week or multifamily residential dwellings of five units or more to arrange for recycling services that are consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection, handling, or recycling of solid waste, to the extent that these services are offered and reasonably available from a local service provider.[16] In addition, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.8 et seq. requires after January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during 2014, a business that generates two cubic yards or more per week of commercial solid waste is required to arrange for organic waste recycling services that include at least one of the following actions: (1) source separate of organic waste from other waste and subscribe to a basic level of organic waste recycling service that includes collection and recycling of organic waste, (2) recycle its organic waste on-site or self-haul its own organic waste for recycling, (3) subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste, (4) make other arrangements to meet the organic waste requirements of a local governmental agency that are more stringent or comprehensive than the requirements of Chapter 12.9, unless the department determines that this requirement will not result in significant additional reductions of organics disposal.[17] The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan (SWIRP), also referred to as the City's Zero Waste Plan, whose goal is to lead Los Angeles towards being a "zero waste" City by 2030.[18] These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion (e.g., recycling) for the City to 76 percent as of 2013.[19] The City has also approved Ordinance No. 181519 (Los Angeles Municipal Code (LAMC) Chapter VI, Article 6, Section 66.32-66.32.5), which requires the diversion of mixed construction and demolition debris to City certified construction and demolition waste processors. The project would be consistent with the City and State waste requirements by utilizing waste collection services that are approved by the City and that meet the

16 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649. 2011, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.8.&article=. Access October 2017

17 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.9. January 2015, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.9.&article=. Accessed October 2017.

18 City of Los Angeles Department of Public Works, LA Sanitation, Solid Waste Integrated Resources Plan (SWIRP) – A Zero Waste Management Plan, October 2013, https://www.lacitysan.org/san/sandocview?docname=cnt012522. Accessed October 2017.

19 City of Los Angeles Department of Public Works, LA Sanitation, Recycling, 2017, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r?_adf.ctrl-state=kq9mn3h5a_188. Accessed October 2017.

applicable requirements for waste diversion and recycling mandates. The City generally relies on single-stream waste recycling where mixed waste is collected and sorted for recycling at a waste reclamation facility. The project would subscribe to a municipal solid waste collection service that is approved by the City and that meets applicable City and State waste collection, management, recycling and diversion requirements.

Consistency with Planning Goals, Policies and Objectives of the City of Los Angeles.

The Project Site is located within the Central City Community Plan area in the City of Los Angeles. The Project Site has a General Plan land use designation of High Density Residential and is currently zoned [Q]R5-4D-O. The R5 zoning designation permits the development of high density residential development. The "[Q]" Condition allows commercial uses to be included along with the residential development provided the floor area for the commercial uses does not exceed a 2:1 FAR. The Height District No. 4 permits a FAR of 13:1. However, the "D" limitation limits the floor area to a maximum of 6:1 FAR, unless additional floor area is permitted through a Transfer of Floor Area (TFAR). The Project is located within a designated Transit Priority Area and as a mixed-use project qualifies for the 13:1 FAR pursuant to Section 14.5 of the LAMC as a Transit Area Mixed Use Project that allows the proposed FAR to be based on the area contained within the centerlines of Olive Street 11th Street, and the abutting alley. The Project Site is also located in a Los Angeles State Enterprise Zone, Central City and Downtown Parking Districts, Greater Downtown Housing Incentive Area, South Park II Business Improvement District, and Central City Revitalization Zone.

The Project is consistent with many of the goals, policies and objectives of the City of Los Angeles General Plan, the Housing Element, and the Do Real Planning Guidelines. In addition, all entitlements being considered for approval by the City of Los Angeles conform with the appropriate sections set forth in the LAMC and the underlying zoning.

General Plan Framework

The General Plan Framework includes the following goals, objectives and policies relevant to the proposed mixed-use development:

Objective 3.1: Accommodate a diversity of uses that support the needs of the City's existing and future residents, businesses, and visitors.

Policy 3.1.1: Identify areas on the Land Use Diagram and the Community Plans sufficient for the development of a diversity of uses that serve the needs of existing and future residents (housing, employment, retail, entertainment, cultural/institutional, educational, health, services, recreation, and similar uses), provide job opportunities, and support visitors and tourism.

The Project would provide 794 multi-family residential units and approximately 12,504 square feet of neighborhood serving commercial uses and would replace the existing four commercial buildings that total 35,651 square feet on the Project Site. The range of housing types and

commercial uses represent a more diverse mix of land uses that would support the needs of the City's existing and future residents, businesses, and visitors. Downtown Los Angeles is a jobs-rich area and providing more residential uses on the Project Site would provide for needed housing in the City, particularly housing in close proximity to multi-modal transportation options.

The Framework Element Land Use Diagram(s) designate(s) districts, centers and mixed-use boulevards that are encouraged to develop with appropriate uses and character for their land use designations. The Project Site is located in an area that is identified as "Downtown Center," which is targeted for major cultural and entertainment facilities, hotels, professional offices, corporate headquarters, financial institutions, high-rise residential towers, regional transportation facilities and the Convention Center according to the City's General Plan Framework's Land Use Diagram. The Downtown Center is generally characterized by a floor area ratio up to 13:1 and high-rise buildings. Development of the Project would support the intent of the Downtown Center designation by providing high-rise residential with neighborhood serving commercial uses that provide housing options near regional transportation facilities, including the Metro Blue Line and Expo Line station at Pico Boulevard, and near job and entertainment opportunities including professional, offices, corporate headquarters, financial institutions, museums, theaters, restaurant, shopping, and other commercial service uses. The provision of residential units at this Downtown location would serve the needs of City residents, would expand the diversity within the designated Downtown Center, and provide housing in close proximity to the aforementioned commercial, retail, entertainment, and restaurant uses. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment.

Objective 3.2: To provide for the spatial distribution of development that promotes an improved quality of life by facilitating a reduction of vehicle trips, vehicle miles traveled, and air pollution.

Policy 3.2.3: Provide for the development of land use patterns that emphasize pedestrian/bicycle access and use in appropriate locations.

The Project would contribute to the concentration of mixed-use development along a corridor with convenient access to the Metro Blue Line and Expo Line (less than 0.5 miles), Metro bus and Metro rapid bus lines, and the LADOT DASH and Commuter Express lines. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project would also provide up to 886 bicycle spaces for on-site residents and the on-site commercial uses.

The new residential population would have access to commercial development on site as well as retail, restaurant, office, and entertainment activities within walking and biking distance and via bus and rail service. The Project would provide pedestrian access from various at-grade sidewalks and steps and would include a ground-level public Plaza with streetscaping,

landscaping and a public art display. At the pedestrian level, the Project would increase the sidewalk width and provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street to promote pedestrian activity.

The Project's location, design, and specific features, including its proximity to high-capacity and high-frequency transit, commercial uses easily accessible from the ground-level, and implementation of a TDM program that will reduce the use of single occupant vehicles and increase the number of trips by walking, bicycle, carpool, vanpool, and transit. The Project would be expected to result in VMT reductions of approximately 32 percent daily, including 31 percent during the morning peak hour and 32 percent during the afternoon peak hour.

Objective 3.16: Accommodate land uses, locate and design buildings, and implement streetscape amenities that enhance pedestrian activity.

The exterior boundaries of the Project Site along Olive Street and 11th Street would provide streetscape amenities for pedestrians, including public Plaza with streetscaping, landscaping and a public art display. At the pedestrian level, the Project would increase the sidewalk width and provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street to promote pedestrian activity. There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site and landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants. The addition of trees, landscaping, and streetscaping would enhance the Project Site and make it more inviting for pedestrian activity. The Project would also include neighborhood serving commercial uses easily accessible from the ground-level along Olive Street and 11th Street, which would also enhance pedestrian activity.

Housing Element 2013-2021

The Project is consistent with goals, objectives and policies of the Housing Element 2013-2021, adopted by the Los Angeles City Council on December 3, 2013. The City of Los Angeles is committed to providing affordable housing and amenity-rich sustainable neighborhoods for its residents, answering the variety of housing needs of its growing population. The purpose of the General Plan Housing Element is to provide guidance for meeting the City's need for housing per the allocation defined in SCAG's Regional Housing Needs Assessment.

Goal 1: An adequate supply of ownership and rental housing that is safe, healthy and affordable to people of all income levels, races, ages, and suitable for their various needs.

Objective 1.1: Produce an adequate supply of rental and ownership housing in order to meet current and projected needs.

Policy 1.1.3: Facilitate new construction and preservation of a range of different housing types that address the particular needs of the city's households.

Policy 1.1.4: Expand opportunities for residential development, particularly in designated Centers, Transit Oriented Districts and along Mixed-Use Boulevards.

The 2013-2021 Housing Element identifies a need for 82,002 new housing units, of which 35,412 units, i.e. 43.2 percent of all units, would be marketed at above moderate income levels. The remaining 56.8 percent of the needed housing units consist of 13,728 moderate income units (16.8 percent), 12,435 low income units (15.2 percent), 10,213 very low income units (12.5 percent), and 10,213 extremely low income units (12.5 percent). The Project would provide 794 new multi-family residential units that would serve the growing population of the community in the designated Downtown Center. The Project would also include commercial uses, which would contribute to meeting the needs of Project residents, as well as off-site residents, tourists and visitors. The Project would remove the existing commercial uses and result in a net decrease of 23,147 square feet of commercial space. However, Downtown Los Angeles is jobs rich and the Project's inclusion of high-rise residential uses near transit, office, commercial, and entertainment uses results in increased land use diversity for the area. The 794 residential units would represent approximately 0.97 percent of the 82,002 needed units identified in the SCAG Regional Housing Needs Assessment (RHNA) for the 8-year (2014 to 2021) planning period. The Project would provide a range of housing types for all family types including studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units.

Objective 1.3: Forecast and plan for changing housing needs over time in relation to production and preservation needs.

Policy 1.3.5: Provide sufficient land use and density to accommodate an adequate supply of housing units by type and cost within the City to meet the projections of housing needs, according to the policies and objectives of the City's Framework Element of the General Plan.

The Project would concentrate new housing within the Downtown Center consistent with policies and objectives of the Framework Element. The Downtown Center is generally characterized by a floor area ratio up to 13:1 and high-rise buildings. As discussed previously, Development of the Project would support the intent of the Downtown Center designation by providing high-rise residential with neighborhood serving commercial uses that provide housing options near regional transportation facilities, including the Metro Blue Line and Expo Line station at Pico Boulevard, and near job and entertainment opportunities including professional, offices, corporate headquarters, financial institutions, museums, theaters, restaurant, shopping, and other commercial service uses. The provision of residential units at this Downtown location would serve the needs of City residents, would expand the diversity within the designated Downtown Center, and provide housing in close proximity to the aforementioned commercial, retail, entertainment, and restaurant uses. Furthermore, as stated above, the Project would assist the City in meeting its housing needs identified in SCAG's Regional Housing Needs Assessment.

Goal 2: Safe, Livable, and Sustainable Neighborhoods

Objective 2.1: Promote safety and health within neighborhoods.

Policy 2.1.1: Establish development standards and policing practices that reduce the likelihood of crime

Policy 2.1.2: Establish development standards and other measures that promote and implement positive health outcomes.

The Project would promote safety and health within the neighborhood by providing landscaping, streetscaping, new sidewalks, and appropriate lighting along Olive Street and 11th Street. The Project would include neighborhood serving commercial uses easily accessible from the ground-level on Olive Street and 11th Street. The Project would incorporate a security program to ensure the safety of residents and visitors, including controlled access, video surveillance, and security personnel.

The Project would implement Project Design Features to promote positive health outcomes, including compliance with the Los Angeles Green Building Code and 2016 California Green Building Standards (CALGreen) Code, and compliance with USGBC LEED Gold Certification standards. To obtain LEED credits, the Project would use adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of VOCs and/or other air quality pollutants. The Project would also minimize transportation-related emissions by being located within walking distance of major transit centers including the Metro Blue Line and Expo Line station on Pico Boulevard, as well as other off-site office, commercial, and entertainment uses. The Project would enhance the pedestrian space to encourage walking and other non-automotive forms of transportation. In addition, the project would provide up to 886 short-term and long-term bicycle parking spaces to promote bicycling. The Project would place residential uses approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110), which would serve as an adequate buffer distance from these freeways so that potential exposure to freeway-generated air pollutant emissions would not pose an elevated health risk.

Objective 2.3: Promote sustainable buildings, which minimize adverse effects on the environment and minimize the use of non-renewable resources.

Policy 2.3.2: Promote and facilitate the reduction of water consumption in new and existing housing.

Policy 2.3.3: Promote and facilitate reduction of energy consumption in new and existing housing.

Policy 2.3.4: Promote and facilitate reduction of waste in construction and building operations.

The Project would ensure sustainable building design through compliance with the 2016 CALGreen Code, Los Angeles Green Building Code, Los Angeles Building Code, Planning and Zoning Code, and compliance with USGBC LEED Gold Certification standards. Design features of the project would include implementation of heat island reduction strategies, optimization of building energy performance to achieve greater than the minimum 5 percent reduction from the LEED baseline as specified in the LEED required prerequisites, and water efficiency features to reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would provide on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied. Additionally, a

construction and demolition waste management plan will maximize the recycling or salvage of nonhazardous construction debris.

Objective 2.4: Promote livable neighborhoods with a mix of housing types, quality design and a scale and character that respects unique residential neighborhoods in the City.

Policy 2.4.1: Promote preservation of neighborhood character in balance with facilitating new development.

Policy 2.4.2: Develop and implement design standards that promote quality residential development.

As discussed previously, the Project would provide 794 multi-family residential units that would serve a broad section of the housing market, including singles, small families, and empty-nesters as well as larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. The Project would be consistent with the character of the Downtown Center, which is targeted for high-rise residential towers, and major cultural and entertainment facilities, hotels, professional offices, corporate headquarters, financial institutions, regional transportation facilities, and other urban uses. The Project would also be designed consistent with the City's Downtown Design Guide. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment. The Project would also include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site and landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants. The addition of trees, landscaping, and streetscaping would enhance the Project Site and make it more inviting for pedestrian activity.

City Planning Commission – Do Real Planning

Promoting the ideals of inspired, principles land use planning concepts at a citywide level, the Los Angeles City Planning Commission has fostered new visions with its "Do Real Planning." The proposed project fulfills several of these important objectives and goals:

Demand a Walkable City: This concept poses the question of whether a project actively welcomes its own users, its neighbors and its passerby. The Project proposes a walkable concept within the Downtown Center by orienting commercial spaces towards the street frontages along Olive Street and 11th Street. The Project would provide and enhance the street frontages with and landscaping, streetscaping, and new and wider sidewalks along Olive Street and 11th Street, as well as providing 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover on the Project Site. In addition, a public Plaza with streetscaping, landscaping and a public art display. These features would enliven the pedestrian environment and improve the visual character of the Project Site and the Downtown Center area.

Offer Basic Design Standards: The Project would be consistent with the character of the Downtown Center, which is targeted for high-rise residential towers and other major commercial, entertainment, office, financial, and transportation centers. The Project would also be designed consistent with the City's Downtown Design Guide. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment. The parking areas within the Podium would be covered with mesh screening. Residential liner units in the upper Podium levels (5 through 9) would offer a variation in the building appearance that is defined by the horizontal lines of the residential balconies. The design of the Project would be consistent with the overall character of the Downtown Center while also providing an appealing Project Site.

Locate Jobs Near Housing: The Commission observes that "the time for segregating jobs from housing in Los Angeles has passed." The Commission observes that the City has "several stale business boulevards and districts that are ripe for renovation; in these traditionally commercial-only locations, we must include both jobs and housing in the mix." The Project Site is primed for renovation proposed by the Commission insofar as the project would bring needed housing units into the jobs-rich Downtown Center area, along with neighborhood serving commercial uses.

Produce Green Buildings: The Project would comply with the applicable requirements of the 2016 CALGreen Code, the Los Angeles Green Building Code, and compliance with the USGBC LEED Gold Certification standards. Some of the Project's key design features that would contribute to energy efficiency include optimizing building energy performance to achieve greater than the minimum 5 percent reduction from the LEED baseline specified in the LEED required prerequisites and water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would include other specific design features that would be incorporated into the Project design to enhance energy efficiency and sustainability. Wraparound-cantilevered balconies would be provided on every residential level that would provide shade and minimize solar gain throughout the building. Further considerations regarding energy efficiency and sustainability include native plants and drip/subsurface irrigation systems, individual metering or sub metering for water use, leak detection systems, rainwater harvesting and provisions for electric vehicle charging (wiring for 5 percent of all parking spaces and pre-wiring for 20 percent of all parking spaces).

Identify Smart Parking Requirements: The Project would provide parking within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The parking areas within the Podium would be covered with mesh screening, while residential liner units in the upper Podium levels (5 through 9) would offer a variation in the building appearance that is defined by the horizontal lines of the residential balconies. The Project would provide 886 bicycle parking spaces for residents and the commercial uses, with short-term bicycle parking located along the streets.

9. California Air Resources Board (CARB) Transmittal Letter to Office of Planning and Research (OPR)

CALIFORNIA
AIR RESOURCES BOARD

Mary D. Nichols, Chair
Matthew Rodriquez, CalEPA Secretary
Edmund G. Brown Jr., Governor

March 19, 2018

Mr. Ken Alex, Director
Office of Planning and Research
Office of Governor Edmund G. Brown, Jr.
1400 10th Street
Sacramento, California 95814

Dear Mr. Alex:

The Jobs and Economic Improvement through Environmental Leadership Act (Assembly Bill 900, statutes of 2011) authorizes the Governor to certify a leadership project for streamlining under the California Environmental Quality Act (CEQA) if the project meets certain conditions. One condition for certification is that the project does not result in any net additional emissions of greenhouse gases (GHG), including GHG emissions from employee transportation, as determined by the California Air Resources Board (CARB).

1045 Olive, LLC (the Applicant) submitted an original application to CARB on December 22, 2017, and clarifying documentations on January 22, 2018, for the proposed 1045 Olive Street project (Proposed Project). As required by the Governor's Guidelines for Streamlining Judicial Review under CEQA, the application includes proposed GHG quantification methodologies and supporting documentation. CARB staff conducted an evaluation of the GHG emission estimates and voluntary improvement measures submitted by the Applicant, and confirmed that the Applicant's methodology, calculations, and documentation are adequate. Based on the documentation submitted by the Applicant, CARB has determined that the Proposed Project will not result in any net additional GHG emissions for purposes of certification under AB 900 once the conditions of approval of the project described in the enclosed staff analysis document are satisfied. CARB staff's evaluation and an Executive Order noting CARB's determination are enclosed.

If you have any questions regarding the evaluation or determination, please contact Dr. Michael Benjamin, Chief of Air Quality Planning and Science Division at (916) 201-8968 or by email at michael.benjamin@arb.ca.gov.

Sincerely,

Richard W. Corey
Executive Officer

Enclosures

cc: (continued, via email):

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Dr. Michael Benjamin, Chief
Air Quality Planning and Science Division
California Air Resources Board
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State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER G-18-018

Relating to Determination of No Net Additional Greenhouse Gas Emissions Under Public Resources Code section 21183, subdivision (c) for 1045 Olive Street Project

WHEREAS, in September 2011, Governor Brown signed the "Jobs and Economic Improvement through Environmental Leadership Act" (AB 900);

WHEREAS, under AB 900, the Governor may certify certain projects for judicial streamlining under the California Environmental Quality Act (CEQA) if certain conditions are met;

WHEREAS, under California Public Resources Code section 21183, subdivision (c), one condition for the Governor's certification is that the project does not result in any net additional emission of greenhouse gases (GHG), as determined by the California Air Resources Board (CARB);

WHEREAS, the Governor's Guidelines for Streamlining Judicial Review under the California Environmental Quality Act require for purposes of CARB's determination on GHG emissions that an applicant submit electronically to CARB a proposed methodology for quantifying the project's net additional GHG emissions and documentation that the project does not result in any net additional GHG emissions;

WHEREAS, pursuant to the Governor's Guidelines, 1045 Olive, LLC (the Applicant) submitted its initial proposed GHG quantification methodologies and documentation to CARB on the proposed 1045 Olive Street Project (proposed project) on December 22, 2017, and clarifying documentations submitted on January 22, 2018;

WHEREAS, the application submitted for the proposed project estimates the project's net additional GHG emissions as follows:

1. Construction GHG Emissions: Additional 7,113 metric tons CO2e emissions from project construction and demolition activities. Construction-generated GHG emissions were estimated from equipment used for construction activities and from both on-site and off-site vehicles and equipment;

2. Operation-Related GHG Emissions: Additional 9,681 metric tons CO2e emissions during the first full year of project operation (2023) and declining operational emissions in future years over the lifetime of the project.

WHEREAS, in the application, the applicant proposes to secure 7,113 metric tons of one-time carbon credits to offset emissions generated during construction and to secure

230,886 metric tons of carbon credits on a net present value basis to offset the net increase in emissions generated during project operation through purchasing credible offset credits issued by a recognized and reputable carbon registry to fully offset these identified construction and operational GHG emissions;

WHEREAS, on September 1, 2017, the applicant has entered into a binding and enforceable agreement with the City of Los Angeles (the lead agency) that all mitigation measures required to certify the project under AB 900 shall be conditions of approval of the project, and those conditions will be fully monitored and enforced by the lead agency for the life of the obligation, pursuant to Public Resources Code section 21183, subdivision (e).

WHEREAS, CARB staff reviewed and evaluated the application in consultation with the lead agency (the City of Los Angeles);

WHEREAS, CARB staff conducted an evaluation of the GHG emission estimates and voluntary mitigation included in the application submitted by the applicant and confirmed the documentation provides an adequate technical basis for estimating total GHG emissions and voluntary mitigation for the proposed project;

WHEREAS, CARB's review and determination on the proposed project's GHG emissions is for the limited purpose of the Governor's findings and certification under AB 900 and should not be construed as meeting any other requirement under State or federal law, including CEQA; the lead agency remains responsible for full CEQA compliance for this project;

NOW, THEREFORE, based on CARB Staff's Evaluation (Attachment 1) of the documentation submitted by the Applicant (Attachment 2), I determine that the 1045 Olive Street Project will not result in any net additional GHG emissions pursuant to Public Resources Code section 21183, subdivision (c) for purposes of certification under AB 900.

Executed this nineteenth day of March 2018, at Sacramento, California.

Richard W. Corey
Executive Officer

Attachments

1. CARB Staff Evaluation of AB 900 Application for 1045 Olive Street Project
2. 1045 Olive Street Project Greenhouse Gas Emissions Methodology Documentation for AB 900 Application

10. Governor’s Determination of Eligibility

Executive Department
State of California

GOVERNOR'S CERTIFICATION GRANTING
STREAMLINING FOR THE 1045 OLIVE STREET PROJECT
IN THE CITY OF LOS ANGELES

I, EDMUND G. BROWN JR., Governor of the State of California, in accordance with the authority vested in me by the Jobs and Economic Improvement Act of 2011, Public Resources Code Section 21178 et seq., make the following determinations:

The 1045 Olive Street Project, a $300 million dollar mixed use residential/commercial redevelopment on a .96 acre site in the downtown area of Los Angeles at Olive and 11th, will create new jobs, reduce energy usage and use clean energy, and promote infill development. A copy of the Project's Application, which contains information supporting this certification, is attached as Exhibit 1. All materials associated with this application are available online at http://opr.ca.gov/s_californiajobs.php.

1. Project Applicant: 1045 Olive, LLC.

2. Project Description: A mixed use residential/commercial/retail project located at the corner of Olive Street and 11th Street in downtown/South Park, Los Angeles, consisting of a 70 story tower with up to 794 residential units and 12,904 square feet of commercial space. The project will redevelop a .96 acre site currently occupied by four single story commercial buildings. Parking will be on site.

3. Lead Agency: City of Los Angeles

4. The project meets the criteria set forth in Public Resources Code section 21180(b)(1). It is

    a. A mixed use residential/commercial project;
    b. Designed to be eligible for LEED Gold certification (Ex. 2);
    c. Designed to achieve a 15-percent greater standard for transportation efficiency than for comparable projects (see Ex. 3); and
    d. Located on an in-fill site.

5. The project is consistent with the Sustainable Communities Strategy for the Southern California region. (See Ex. 1 page 8-13.)
6. As a multifamily residential project, private vehicle parking spaces are priced and rented or purchased separately from dwelling units (i.e., unbundled).

7. The size and scope of the project clearly establish that the project entails a minimum investment of $100 million in California through the time of completion of construction.

8. The project applicant has provided information establishing that the prevailing and living wage requirements of Public Resources Code section 21183(b) will be satisfied. (See Ex. 1, page 14.

9. The project applicant has provided information establishing that the project will comply with the requirements for commercial and organic waste recycling of Chapters 12.8 (commencing with Section 42649) and 12.9 (commencing with Section 42649.8) of Part 3 of Division 30, as applicable.

10. The project applicant has provided information establishing that the project will not result in any net additional greenhouse gas emissions, and the Deputy Executive Officer of the Air Resources Board has made the determination that the project does not result in any net additional greenhouse gas emissions. (See Application, and CARB Determination, dated, 2017, attached as Ex. 4.)

11. The project applicant has provided documentation reflecting a binding agreement establishing the requirements set forth in Public Resources Code sections 21183(d), (e), and (f). (See Exhibit 5.) For this project, the applicant must ensure that the proposed travel demand management strategy (as set forth in the Project Application) is incorporated into the project or identified as mitigation for the project, and that the management strategy will be monitored and adjusted to ensure a fifteen percent reduction in motor vehicle trips.

Therefore, I hereby certify that the 1045 Olive Street Project is an eligible project under the Jobs and Economic improvement Act of 2011, Public Resources Code Sections 21178 et seq.

EDMUND G. BROWN JR.
Governor of California

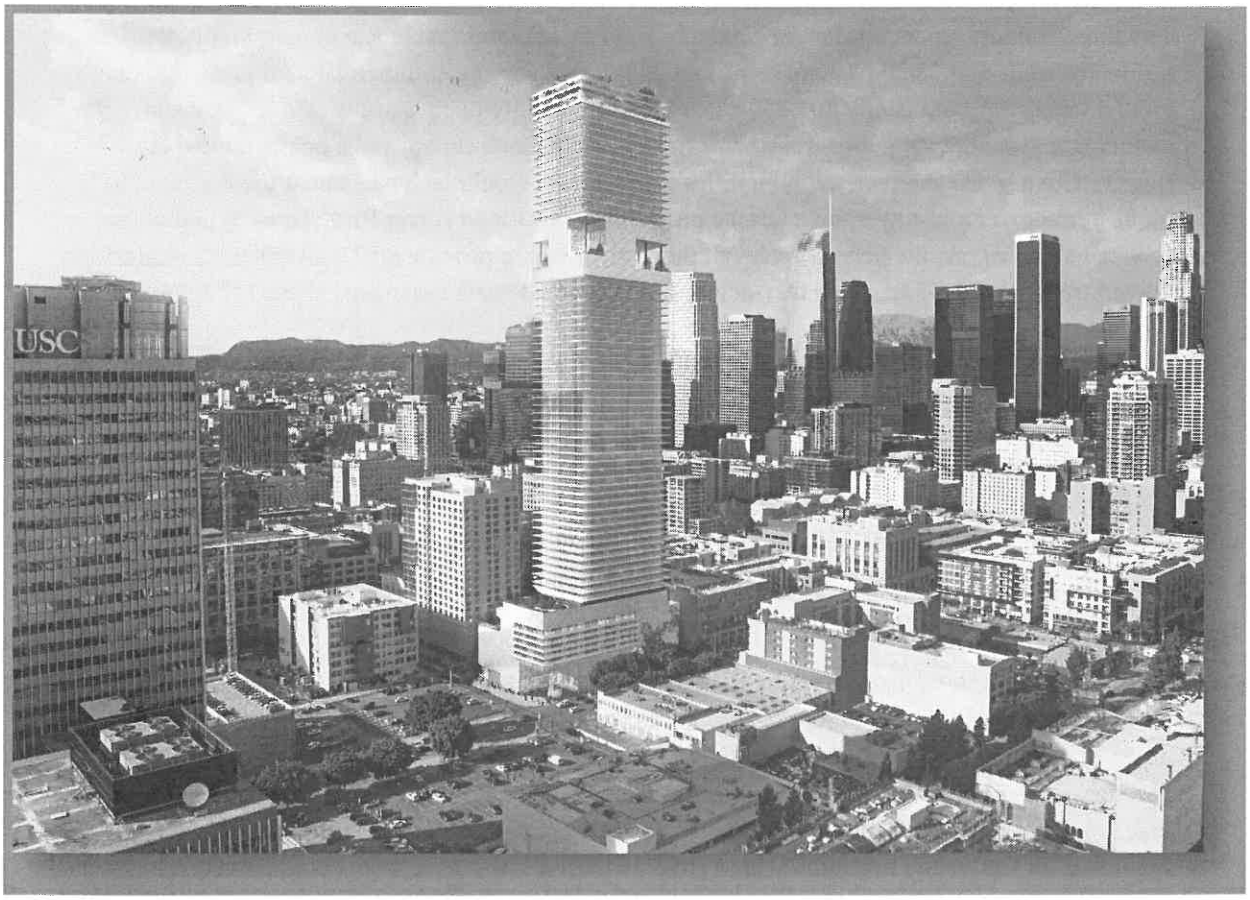
April 27, 2018

Application for Environmental Leadership Development Project

1045 Olive, LLC

1045 Olive Street, Los Angeles, California 90015

December 2017



Application for Environmental Leadership Development Project

Project Title: 1045 Olive Street

Project Applicant: 1045 Olive, LLC

Project Location: Los Angeles, California

PROJECT PROPOSAL

1045 Olive, LLC (Applicant) proposes a new mixed-use development (Project) on an approximately 0.96-acre site located at the northwest corner of Olive Street and 11th Street (Project Site). Four existing single story commercial buildings would be removed and replaced with a new 751,777 square foot (net) mixed-use high-rise building. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[1] The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The residential units would include a large range of housing types to serve a broad section of the housing market, including singles, small families, and empty-nesters as well as few larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. Approximately two thirds of the units would be smaller than 2-bedroom in size and approximately one third of the units would be 2-bedrooms or larger in size. The residential units would be mostly located within the residential tower; however, approximately 40 units would be located along the top five levels of the Podium facing Olive Street and 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The commercial uses would meet needs of neighborhood residents. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing environmental impacts, including for traffic and greenhouse gas (GHG) emissions, this assessment conservatively

1 The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.[2]

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

PROJECT SITE

The Project Site is located at 1045 Olive Street on the northwest corner of Olive Street and 11th Street in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. The size of the Project Site will be reduced during Project implementation to increase the width of the alley and adjacent sidewalks to meet current standards. The post dedication Site would be 37,172 square feet.

Uses within the block that lie adjacent to the Project include a 7-story mixed-use development to the north, 7-story mixed-use development to the northwest, and a two story commercial building and 25-story mixed-use high-rise building to the west. Adjacent development across Olive Street to the east includes single story commercial uses; and across 11th Street to the south includes a surface parking. Surrounding development includes a large array of newer mixed use development, and older commercial, office, residential and warehouse uses.

2 Calculations included in the analysis of environmental impacts for this Project conservatively assume that all of the commercial space would be used for restaurant uses. This provides for conservative analyses as restaurant uses generate greater impacts than retail uses. For example, restaurant uses generate greater levels of traffic and greater consumption of resources such as water consumption.

The Project vicinity is highly urbanized and generally built-out. The South Park community of Downtown Los Angeles is one of nine-districts in the Central City Community Plan area, and is representative of the Downtown Center with its concentration of government-related uses, high- and mid-rise office buildings, residential buildings, hotels, retail uses, museums, and cultural districts. The South Park area includes a mix of residential, medical, commercial, and retail uses; with a substantial concentration of housing located next to and over support services, such as retail and commercial developments that provide employment opportunities for area residents.

The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is also located within walking distance (approximately 0.27 miles) east of the Figueroa Street Corridor, the focus of the MyFigueroa Streetscape project that is transforming the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFigueroa project extends eastward from Figueroa Street along 11th Street adjacent to the Project Site, ending at Broadway. Figueroa Street in the Project vicinity is also the focus of regional activity including LA LIVE, an entertainment, hotel, and residential complex that is a Citywide focus of entertainment activity; the Staples Center Arena, a multipurpose sports arena which is home to the Los Angeles Clippers, Los Angeles Kings, Los Angeles Lakers and Los Angeles Sparks; and the Los Angeles Convention Center, which regularly features conventions, trade shows, and exhibitions.

CONSISTENCY WITH STATUTORY REQUIREMENTS FOR CEQA STREAMLINING

This application was prepared in accordance with the Governor's Guidelines for Streamlining Judicial Review under the California Environmental Quality Act (CEQA), which is provided on the Governor's Office of Planning and Research Website (http://opr.ca.gov/s californiajobs.php).

The following information (in addition to all exhibits) is submitted to establish that the Project satisfies the statutory requirements for CEQA streamlining as further informed by the criteria set forth in the Governor's Guidelines under California Public Resources Code Section 21178 et seq.

Information to show the project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature.

The Project is a mixed-use development that is both residential and commercial in nature, located on property zoned for high density residential development and commercial uses. As previously

stated, the Project would include 794 multi-family residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level.

The residential units would include a large range of housing types to serve a broad section of the housing market, including singles, small families, and empty-nesters as well as few larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. The Project's commercial uses would meet needs of neighborhood residents. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses.

Amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

Proposed site plans for the Project are attached as **Exhibit 1**. Renderings of the Project are attached as **Exhibit 2**.

Information to show the project will qualify for LEED Gold Certification. The application shall specify those design elements that make the project eligible for LEED Gold Certification, and the applicant shall submit a binding commitment to delay operating the project until it receives LEED Gold Certification. If, upon completion of construction, LEED Gold Certification is delayed as a result of the certification process rather than a project deficiency, the applicant may petition the Governor to approve project operation pending completion of the certification process.

The Project will encourage design and construction decisions that have the potential to reduce energy and water use, promote resource conservation through redevelopment and the sourcing of local construction materials and create healthier indoor environments. The Project will achieve the United States Green Building Standards (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification. Achieving LEED Gold Certification requires obtaining at least 60 points satisfying seven categories, which can be organized into three overarching themes: Siting and Transportation, Building Performance, and Material Selection. The end result is a positive impact on resource conservation, the built environment, and the local community.

Siting, Transportation, and Mixed Use: This overarching theme addresses preservation of undeveloped property by encouraging infill development, adaptive re-use of existing historic buildings, and facilitating pedestrian activity by integrating a diversity of uses and providing convenient access to public transportation. The Project is located in a prime urban location close to transit, entertainment and employment and will integrate a range of residential and commercial uses around public and private open spaces.

The Project will be designed as a high-density residential building with neighborhood serving commercial uses on a previously developed site in close proximity (i.e., within a one-half mile) to a number of services including restaurant, grocery, laundry/cleaner, movie theater, fitness center uses and other service uses. The Project would also incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent underground parking and incorporate heat island reduction strategies for the Project roof areas.

The Project's placement within Downtown Los Angeles results in increased efficiencies with respect to the siting and transportation in the area. The Project is located less than 0.5 miles from Metro Blue Line and Expo Line station at Pico Boulevard, which connects to the 7th Street/Metro Center and the Red Line and Purple Line. The Project is also located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. Additionally, the Project will provide short- and long-term bicycle parking for bicycle commuters to facilitate "last mile" connectivity to nearby multi-modal transit options.

The Project would promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

Building Performance: This overarching theme emphasizes water and energy efficiency to maximize livability with reduced resource consumption. Consideration will be taken to select high-performance materials, fixtures and appliances to optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements and water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would include other specific design features that would be incorporated into the Project design to enhance energy efficiency and sustainability. Wraparound-cantilevered balconies would be provided on every residential level that would provide shade and minimize solar gain throughout the building. Further considerations regarding energy efficiency and sustainability include native plants and drip/subsurface irrigation systems, individual metering or sub metering for water use, leak detection systems, rainwater harvesting and provisions for electric vehicle charging (wiring for 5 percent of all parking spaces and pre-wiring for 20 percent of all parking spaces).

Material Selection: This overarching theme attempts to reduce the building's life cycle impact through the selection of upcycled, recycled and locally sourced materials where feasible and also minimize exposure to environmental toxins by choosing low volatile organic compound (VOC) materials. A few practices being considered are using salvaged, refurbished or reused materials for at least 5 percent of the total value of materials on the Project, using materials with recycled content for at least 10 percent of the total value of materials on the Project, using refrigerants that minimize ozone depletion, using adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of VOCs and/or other air quality pollutants, and providing on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable

materials and adequate storage areas for such containers during construction and after the building is occupied. Additionally, a construction and demolition waste management plan will maximize the recycling or salvage of nonhazardous construction debris.

Green Building Features: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED required prerequisites.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

The GHG Emissions Offset Approach for the 1045 Olive Street Project / Commitment Letter and LEED Measures, dated December 2017, is attached as **Exhibit 3**.

Information to show the project will achieve at least 15 percent greater transportation efficiency than comparable projects. "Transportation efficiency" is defined as the number of vehicle trips by employees, visitors, or customers to the project divided by the total number of employees, visitors, and customers. The applicant shall provide information setting forth its basis for determining and evaluating comparable projects and their transportation efficiency, and how the project will achieve at least 15 percent greater transportation efficiency. For the purpose of this provision, comparable means a project of the same size, capacity and location.

The Project is considered an "infill" project, as it is replacing existing commercial uses with a high-density, mixed-use development. The Project Site is located in the South Park community of Downtown Los Angeles. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110), which provide regional access to the Site.

The Project includes a mix of residential and neighborhood serving commercial uses (restaurant and retail) located at the ground level, which would provide convenient local destinations for the residential element of the Project without having to drive to other locations. The mix of uses on the Project Site provides for internal capture of vehicle trips that would otherwise occur without the mix of uses. The Project is also located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the LADOT DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project would also implement a Traffic Demand Management (TDM) Program that would provide new on-site residents and employees with transit information, on-site bicycle amenities (bicycle racks, lockers, showers, etc.), unbundle residential parking, and other measures to encourage the use of non-auto modes and reduce vehicle trips to and from the Project Site.

The combined effects of the Project's urban infill location along major corridors, proximity to transit and pedestrian amenities, and proposed TDM program would reduce the Project's anticipated daily vehicular trip generation estimates by approximately 32 percent as compared to a comparable mixed-use project. Therefore, the Project results in substantially more than the 15 percent greater transportation efficiency requirement.

The AB 900 Traffic Assessment for the 1045 Olive Street Project, dated September 2017, is attached as **Exhibit 4**.

Information to show the project is located on an infill site, defined at Public Resources Code Section 21061.3, and in an urbanized area, as defined at Public Resources Code Section 21071

The Project is located on an infill site. Under Public Resources Code Section 21061.3, an "infill site" is defined as a site that "has been previously developed for qualified urban uses." In turn, a "qualified urban use" is defined, pursuant to Public Resources Code Section 21072, as "any residential, commercial, public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses." The Project Site meets this definition as it is currently developed with four existing commercial buildings. Additionally, the Project is located in an "urbanized area," which is defined under Public Resources Code Section 21071 as "an incorporated city" that meets the criteria of having a population of at least 100,000 persons. The City of Los Angeles has an estimated population of 4,041,707 in 2017 according to the 2017 estimates prepared by the California Department of Finance. The Project would represent an urban infill development since it would be located on a site that meets the definition of an infill site in an urbanized area and would be considered a qualified urban use.

For a project that is within a metropolitan planning organization for which a sustainable communities strategy or alternative planning strategy is in effect, information to show the project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets. For the purposes of this provision, "in effect" means that the sustainable communities strategy or the alternative planning strategy has been adopted by the metropolitan planning organization, and that the Air Resources Board has accepted the metropolitan planning organization's determination that the sustainable communities strategy or alternative planning strategy meets the adopted greenhouse gas reduction targets and is not the subject of judicial challenge.

California Senate Bill (SB) 375 was passed by the State Assembly on August 25, 2008 and signed into law by the Governor on September 30, 2008. This legislation links regional planning for housing and transportation with the greenhouse gas (GHG) reduction goals outlined in California Assembly Bill (AB) 32. Under SB 375, each Metropolitan Planning Organization (MPO) is required to adopt a Sustainable Community Strategy to encourage compact development that reduces passenger vehicle miles traveled (VMT) and trips so that the region will meet a target, created by the California Air Resources Board (CARB), for reducing GHG emissions.

The Project is within the jurisdiction of the Southern California Association of Governments (SCAG). On April 4, 2012, SCAG's Regional Council adopted the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future (2012–2035 RTP/SCS). On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 RTP/SCS: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life. The 2016-2040 RTP/SCS reaffirms the land use policies that were incorporated into the 2012-2035 RTP/SCS. On June 28, 2016, CARB accepted SCAG's quantification of GHG emission reductions from the 2016 SCS and the determination that the 2016 SCS would, if implemented, achieve the 2020 and 2035 GHG emission reduction targets established by CARB.[3]

The purpose of the SCAG RTP/SCS is to achieve its assigned regional per capita GHG reduction targets for the passenger vehicle and light-duty truck sector established by CARB pursuant to SB 375. SCAG's RTP/SCS plans for regional population growth using smart land use strategies. As part of the SCS/RTP, "transportation network improvements would be included, and more compact, infill, walkable and mixed-use development strategies to accommodate new region's growth would be encouraged to accommodate increases in population, households, employment,

3 CARB, Executive Order G-16-066, SCAG 2016 SCS ARB Acceptance of GHG Quantification Determination, April 2016 (http://www.arb.ca.gov/cc/sb375/scag_executive_order_g_16_066.pdf).

and travel demand."[4] Moreover, the RTP/SCS states that while "[p]opulation and job growth would induce land use change (development projects) and increase VMT, and would result in direct and indirect GHG emissions," the RTP/SCS would "supports sustainable growth through a more compact, infill, and walkable development pattern."[5] Accordingly, the RTP/SCS outlines the region's plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Additionally, the RTP/SCS demonstrates the region's ability to attain and exceed the GHG emission-reduction targets set forth by CARB. The majority of new housing and job growth is focused in high-quality transit areas (HQTA) and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development (TOD). This overall land use development pattern supports and complements the proposed transportation network that emphasizes system preservation, active transportation, and transportation demand management TDM measures.

Adopted strategies for the reduction of GHG emissions, as part of the 2012–2035 RTP/SCS and the 2016-2040 RTP/SCS, have the potential to significantly change the region's land use and travel patterns to achieve GHG reductions by 2020, 2035, and 2040. Such strategies include (but are not limited to) the following:

- Compact growth in areas accessible to transit;
- Half of all new development on three percent of the region's land use;
- More multi-family housing, jobs, and housing closer to transit;
- New housing and job growth focused in HQTAs; and
- Investments in biking and walking infrastructure to improve active transportation options and transit access.

Consistent with the RTP/SCS, the Project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services provided by the nearby Metro Blue Line and Expo Line station at Pico Boulevard, which provides convenient access to locations within Downtown Los Angeles, Long Beach, Culver City, Santa Monica, and direct connections to the Metro Red and Purple lines that provide transit service to a multitude of locations through the Los Angeles region including Hollywood, Koreatown, and Universal City. The Project would be located within a quarter-mile of public transportation, including existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The SCAG objective of locating multi-family housing in proximity to jobs and transit would be accomplished by the Project. New housing and job growth, as a result of the completed

4 Southern California Association of Governments, Draft Program Environmental Impact Report – 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, (2015), page 3.8-35.

5 Ibid, page 3.8-36.

Project, is focused in a HQTA, which SCAG defines as an area within a half mile of a well-serviced transit stop. A well-service transit stop is one which has a 15 minute or less service frequency during peak commute hours."[6] As discussed above, the Project would be consistent with this strategy.

The Project would also be consistent with the general land use designation, density, and building intensity outlined in the SCAG 2016–2040 RTP/SCS. Using data collected from local jurisdictions, including General Plans, SCAG categorized existing land use into "land use types," then combined these land use types into 35 place types, and then classified sub-regions into one of three land use development categories: urban, compact, or standard. SCAG used each of these three categories to describe the conditions that exist and/or are likely to exist within each specific area of the region.[7]

SCAG identified the existing General Plan land uses as Multi-Family Residential (SCAG Data Request Maps, refer to the attached **Figure 1**). After converting this data into Scenario Planning Zone-level place types, SCAG categorized the area surrounding the Project as an urban area.[8]

The RTP/SCS defines urban areas as "often found within and directly adjacent to moderate and high density urban centers. Nearly all urban growth in these areas would be considered infill or redevelopment. The majority of housing is multi-family and attached single-family (townhome), which tend to consume less water and energy than the large types found in greater proportion in less urban locations. These areas are supported by high levels of regional and local transit service. They have well-connected street networks, and the mix and intensity of uses result in a highly walkable environment. These areas offer enhanced access and connectivity for people who choose not to drive or do not have access to a vehicle."[9]

6 Technical Evaluation of the Greenhouse Gas Emission Reduction Quantification for the Southern California Association of Governments' SB 375 Sustainable Communities Strategy, dated May 2012. Document located on the ARB website: http://www.arb.ca.gov/cc/sb375/scag_scs_tech_eval0512.pdf.

7 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, pages 20-21, (2016). Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 2017.

8 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Exhibit 13 Forecasted Regional Development Types (2012) – Los Angeles City Subregion, (2015). Available at: http://scagrtpscs.net/Documents/2016/draft/d2016RTPSCS_SCSBackgroundDocumentation.pdf. Accessed September 2017.

9 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, page 20, (2016). Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed September 2017.



SOURCE: Google Earth, 2016, SCAG 2012.

1045 Olive Street

Figure 1
Aerial Photograph with General Plan Land Uses

ESA

The SCAG urban land development category comprises the following urban footprint scenario models, including urban mixed use, urban residential, urban commercial, city mixed use, city residential, and city commercial.[10, 11] The Project would consist of multi-family residential uses with ground- and mezzanine-level neighborhood serving commercial uses and thus would be consistent with the range of place types within the SCAG urban land development category.

Additionally, the RTP/SCS states that "urban mixed-use districts are exemplified by a variety of intense uses and building types. Typical buildings are between 10 and 40+ stories tall, with offices and/or residential uses and ground-floor retail space. Parking is usually structured below or above ground. Workers, residents, and visitors are well served by transit, and can walk or bicycle for many of their transportation needs." The land use mix for the urban mixed-use place type is approximately 18 percent residential, 16 percent employment, 45 percent mixed-use, and 21 percent open space/civic.[12]

Urban residential uses are the most intense residential-focused type, and are typically found within or adjacent to major downtown areas. They include high-rise and mid-rise residential towers, with some ground-floor retail space. Parking is usually structured below or above ground. Residents are well served by transit and can walk or bicycle for many of their daily needs.[13]

City mixed-use areas are transit oriented and walkable, and contain a variety of uses and building types. Typical buildings are between 5 and 30 stories tall, with ground-floor retail space and offices and/or residential on the floors above. Parking is usually structured below or above ground. The land use mix for this place type is typically approximately 28 percent residential, 17 percent employment, 35 percent mixed use, and 20 percent open space/civic. The residential mix is composed of 97 percent multi-family and 3 percent townhomes. The average total net floor-area ratio (FAR) is 3.4, floor count ranges from 3 to 40 stories, and gross density ranges from 10 to 75 households per acre.[14]

The RTP/SCS describes city residential place types as "dominated by mid- and high-rise residential towers, with some ground-floor retail space, and offices and/or residences on the floors above. Parking is usually structured below or above ground. Residents are well served by transit, and can walk or bicycle for many of their daily needs." The land use mix for this place type is typically approximately 65 percent residential, 4 percent employment, 11 percent mixed use, and 20 percent open space/civic. The residential mix is 97 percent multi-family and 3 percent

10 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 9, (2016). Available at: http://www.scagrtpscs.net/Documents/2016/supplemental/LDC_PlaceType.pdf. Accessed September 2017.

11 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 6, (2016). Available at: http://scagrtpscs.net/documents/2016/supplemental/UrbanFootprint_PlaceTypesSummary.pdf. Accessed September 2017.

12 Ibid.

13 Ibid.

14 Ibid.

townhome. The average total net FAR is 2.9, floor count ranges from 5 to 40 stories, and the gross density ranges from 35 to 37 households per acre.[15]

The Project consists of the development of a building containing mixed-use residential and commercial units in the South Park community of the city of Los Angeles. Surrounding land uses include a mixed-use development to the northeast of the Project site, a high-rise building to the west, commercial to the east, and a parking lot to the south.

The Project Site (1045 Olive Street) is currently occupied by four commercial buildings. The Project would consist of multi-family residential and ground- and mezzanine-level neighborhood serving commercial uses in a 61-story tower atop a nine level podium structure. The Project would include 6 subterranean and 8 above-grade parking levels within the podium, creating 802 residential vehicle parking spaces. Overall, the Project would include 794 residential units, and approximately 12,504 square feet of commercial space. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The Project is located within the Central City Community Plan area and is designated as High Density Residential and is zoned [Q]R5-4D-O. The R5 zoning designation permits the development of high density residential development. The "[Q]" Condition allows commercial uses to be included along with the residential development provided the floor area for the commercial uses does not exceed a 2:1 FAR. The Height District No. 4 permits a FAR of 13:1. However, the "D" limitation limits the floor area to a maximum of 6:1 FAR, unless additional floor area is permitted through a Transfer of Floor Area (TFAR). The Project is located within a designated Transit Priority Area and as a mixed-use Project qualifies for the 13:1 FAR pursuant to Section 14.5 of the Los Angeles Municipal Code (LAMC) as a Transit Area Mixed Use Project that allows the proposed FAR to be based on the area contained within the centerlines of Olive Street 11th Street, and the abutting alley. Therefore, the Project is consistent with the SCAG urban land development category and consistent with the land use designation.

Information to show that the applicant has notified a lead agency prior to the release of the draft environmental impact report that it intends to certify a project for streamlined environmental review under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011. Written acknowledgment from the lead agency of the applicant's intent to apply for certification may be used to satisfy this requirement.

Prior to the circulation of the Draft Environmental Impact Report and well before approval of the Project entitlements, the City of Los Angeles, lead agency for the Project, has been notified that the Applicant is seeking certification for the Project under the Jobs and Economic Improvement

15 Southern California Association of Governments, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Background Documentation, Reference Document 6, (2016). Available at: http://scagrtpscs.net/documents/2016/supplemental/UrbanFootprint_PlaceTypesSummary.pdf. Accessed September 2017.

Through Environmental Leadership Act of 2011. The letter of acknowledgement and binding agreement between the Applicant and the City of Los Angeles is provided in **Exhibit 7**.

Information to show that the project will result in a minimum investment of $100 million in California through the time of completion of construction.

The Project will far exceed the $100 million minimum investment as required by Public Resources Code section 21183(a). In addition to the roughly $10 million in direct public benefit payments, the Project entails the demolition of 35,651 square feet of commercial buildings and construction of a 70-story urban mixed-used retail and residential project consisting of 794 apartments and 12,504 square feet of ground-level neighborhood serving commercial space. Based on recent construction cost information, the Project's hard costs are estimated to be over $300 million. The fiscal impacts and economic benefits are summarized in **Table 1** below.

TABLE 1
OVERVIEW OF FISCAL IMPACTS AND ECONOMIC BENEFITS

	Construction (One-Time/Short-Term)	Ongoing Operation (Annual)
Employment	**4,720 Jobs**	**550 Jobs**
Labor Income	**$327,400,000**	**$20,500,000**
Economic Output	**$808,200,000**	**$67,100,000**
State and Local Taxes	**$33,200,000**	**$8,600,000**
City of Los Angeles and other Local Cities	$3,800,000	$1,400,000
County of Los Angeles	$8,600,000	$4,800,000
State	$20,800,000	$2,400,000
Federal Taxes	**$65,700,000**	**$5,600,000**

SOURCE: Los Angeles Economic Development Corporation (LAEDC) Institute for Applied Economics, Project 1045 Olive – An Economic and Fiscal Impact Analysis, December 2017.

A detailed Fiscal Impact and Economic Benefit Analysis for the Project, dated December 2017, is attached as **Exhibit 5**.

Information to show that the project will satisfy the prevailing and living wage requirements of Public Resources Code section 21183(b).

The Project will create high-wage, highly skilled jobs that pay prevailing wages and living wages and will comply with all provisions of Public Resources Code Section 21183(b) as ordered. As defined in Section 21183(b)(1), "jobs that pay prevailing wages" means that all construction workers employed in the execution of the project will receive at least the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations pursuant to Sections 1773 and 1773.9 of the Labor Code. The Project Applicant will include this requirement in all contracts for the performance of the work.

As per Section 21183(b)(2)(B), the obligation of the contractors and subcontractors to pay prevailing wages may be enforced by the Labor Commissioner through the issuance of a civil wage and penalty assessment pursuant to Section 1741 of the Labor Code, which may be reviewed pursuant to Section 1742 of the Labor Code, within 18 months after the completion of the project, or by an underpaid worker through an administrative complaint or civil action. Section 21183(b)(2)(B) does not apply if a project labor agreement is in place with enforcement through an arbitration process. The Project has not entered into a project labor agreement; therefore, enforcement is subject to the provisions of Section 21183(b)(2)(B).

Information establishing that the project will not result in any net additional greenhouse gas emissions. This information includes (1) a proposed methodology for quantifying the project's net additional greenhouse gas emissions, and (2) documentation that quantifies both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and quantifies the net emissions of the project after accounting for any mitigation measures. This information is subject to a determination signed by the Executive Officer of the Air Resources Board that the project does not result in any net additional greenhouse gas emissions, following the procedures set forth in section 6 of the Governor's Guidelines.

The Project will not result in any net additional GHG emissions. The proposed methodology for quantifying the project's GHG emissions is attached as **Exhibit 6**.

Prior to the onset of construction activity, the existing uses will be vacated and all facilities will cease to operate. The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. These existing uses would be demolished and removed to allow for development of the Project. Given the physical space limitations of the Project Site, the entire site would be fully built out prior to occupancy. Thus, the project would not result in simultaneous construction and operation GHG emissions from partial occupancy during construction.

Construction of the project would result in one-time GHG emissions of carbon dioxide (CO_2) and smaller amounts of methane (CH_4) and nitrous oxide (N_2O) from heavy-duty construction equipment, haul trucks, and worker vehicles. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road and on-road emissions factors. The emissions are estimated using the California Emissions Estimator Model (CalEEMod), which incorporates the CARB off-road emissions factor model, OFFROAD, and the on-road emissions factor model, EMFAC. The output values used in this analysis are adjusted to be project-specific based on expected equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year. The CalEEMod tool provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Since a specific construction contractor(s) has not yet been

retained for the project, specific equipment specifications are not yet known. Therefore, air district recommended default equipment and vehicle horsepower ratings and load factors provided in CalEEMod are used in this assessment. The use of these CalEEMod factors is recognized as providing a reasonably conservative estimate of a project's construction emissions. Construction of the project would occur over a number of phases and include activities such as demolition, debris and soil hauling, building construction, architectural coating, and paving. The construction phases are not independent of each other, as there may be overlap and efficiency built into the construction process. Information regarding the activities that would occur during these phases is provided below:

- **Demolition:** This phase is anticipated to begin as early as 2019 and last for approximately one month. If construction commences at a later date, this assessment would be considered conservative as future year emission factors tend to decline in future years. Construction equipment would include a concrete saw, loader, haul trucks, jackhammer, sweeper/scrubber and other construction equipment.
- **Site Preparation:** This phase is anticipated to occur during demolition and last for approximately one month. Construction equipment would include a concrete saw, excavator, and sweeper/scrubber.
- **Grading and Excavation:** This phase is anticipated to have some overlap with the demolition and site preparation phase and last for approximately four months. Construction equipment would include a backhoe, drill rig, excavators, haul trucks, loaders, and sweeper/scrubber. Up to approximately 80,000 cubic yards of soil would be excavated and exported.
- **Utilities/Trenching:** This activity is anticipated to have some overlap with grading and excavation and last for approximately 3 months. During this phase, trenching for site utilizes would occur. Construction equipment would include a backhoe and sweeper/scrubber.
- **Foundation/Concrete Pouring:** This activity is anticipated to have some overlap with grading and excavation and utilities/trenching and would be on-going through building construction activities for approximately 2.5 years. During this activity, the building foundations would be prepared and concrete pouring for various building and Project Site elements would occur. Construction equipment would include a concrete trucks, backhoe, crane, forklift, and sweeper/scrubber.
- **Building Construction:** This phase is anticipated to begin after grading and excavation and after the building foundations have been prepared and last for just over 2 years. During this phase, the building would be constructed. Construction equipment would include cranes, forklifts, sweeper/scrubber, and material/vendor supply trucks.
- **Paving:** This activity is anticipated to last for approximately 2 months and occur during the building construction phase. During this activity, paving materials would be poured during construction of the buildings and related features and the surfaces would be paved. Construction equipment would include a backhoe, sweeper/scrubber, and other equipment.
- **Architectural Coating:** This activity is anticipated to last for approximately 2 years and occur during the building construction phase. During this activity, the interior and exterior coating would be applied to the residential and commercial uses as the floors are built out. Specific coating equipment would include an air compressor and forklift.

Operation of the Project would generate GHG emissions from vehicles traveling to and from the site, area sources (landscaping equipment and hearths) energy demand (electricity and natural gas), water demand, and solid waste generation. Physical and operational land use characteristics and green building features for which sufficient data is available to quantify the reductions from building energy and resource consumption are accounted for in the quantitative analysis, and include but are not limited to the following measures described below.

Land Use Characteristics: The Project includes a mix of residential and neighborhood serving commercial uses (restaurant and retail) located at the ground level, which would provide convenient local destinations for the residential element of the Project without having to drive to other locations. The mix of uses on the Project Site provides for internal capture of vehicle trips that would otherwise occur without the mix of uses. The Project is also located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. The Project is located in an area well served by multi-modal transportation options and in close proximity to services, which reduces VMT from private automobiles. The Project Site is less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard, which provides convenient access to locations within Downtown Los Angeles, Long Beach, Culver City, Santa Monica, and direct connections to the Metro Red and Purple lines that provide transit service to a multitude of locations through the Los Angeles region including Hollywood, Koreatown, and Universal City. The project would be located within a quarter-mile of public transportation, including existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) DASH Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is also an infill location in close proximity (i.e., within a one-half mile) to a number of services including restaurant, grocery, laundry/cleaner, movie theater, fitness center uses and other service uses. The Project would also implement a TDM Program that would provide new on-site residents and employees with transit information, on-site bicycle amenities (bicycle racks, lockers, showers, etc.), unbundle residential parking, and other measures to encourage the use of non-auto modes and reduce vehicle trips to and from the Project Site. These characteristics result in a substantial reduction in VMT compared to the regional average.

Green Building Features: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. Green building and LEED measures include the following.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

- The Project will optimize building energy performance to achieve a minimum of a 5 percent reduction from the LEED baseline consistent with LEED required prerequisites.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

To achieve the goal of the Project not resulting in any net additional GHG emissions, the Project would implement GHG reduction measures and programs that may include community-based programs that reduce sources of GHG emissions in the regions. These may include installing solar panels on existing rooftops and carports or other similar community-based measures. The Project may also purchase green-power to offset the GHG emissions from the Project's building electricity demand, obtain GHG credit offsets, or other similar types of GHG reductions. Detailed GHG emissions calculations demonstrating a net zero increase in GHG emissions is attached as **Exhibit 6**.

Information documenting a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183(d) (all mitigation measures will be conditions of approval and enforceable, and environmental mitigation measures will be monitored and enforced for the life of the obligation), (e) (applicant will pay costs for hearing by Court of Appeal), and (f) (applicant will pay costs of preparing the administrative record).

SB 734 (effective January 1, 2014) amended the AB 900 Guidelines, regarding the documentation of a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183 (d) (e) and (f), to remove the need for a binding agreement prior to the release of the Draft Environmental Impact Report. Section 21181 as amended by AB 246 requires the Governor to certify the project as an environmental leadership development project eligible for streamlining prior to January 1, 2020.

The letter of acknowledgement and binding agreement between the Applicant and the City of Los Angeles is provided in **Exhibit 7**.

Information per Public Resources Code 21184.5 as amended by SB 734 to show the project is providing unbundled parking for residential dwelling units, except for affordable dwelling units.

The project will provide unbundled parking for the residential dwelling units.

Information per Public Resources Code 21183(d) to show the project demonstrates compliance with the requirements of Chapters 12.8 (commencing with Section 42649) and 12.9 (commencing with Section 42649.8) of Part 3 of Division 30, as applicable.

With respect to municipal solid waste, the State has enacted regulations to address solid waste services and recycling. California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649 et seq. requires businesses that produce four cubic yards or more of solid waste per week or multifamily residential dwellings of five units or more to arrange for recycling services that are consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection, handling, or recycling of solid waste, to the extent that these services are offered and reasonably available from a local service provider.[16] In addition, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.8 et seq. requires after January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during 2014, a business that generates two cubic yards or more per week of commercial solid waste is required to arrange for organic waste recycling services that include at least one of the following actions: (1) source separate of organic waste from other waste and subscribe to a basic level of organic waste recycling service that includes collection and recycling of organic waste, (2) recycle its organic waste on-site or self-haul its own organic waste for recycling, (3) subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste, (4) make other arrangements to meet the organic waste requirements of a local governmental agency that are more stringent or comprehensive than the requirements of Chapter 12.9, unless the department determines that this requirement will not result in significant additional reductions of organics disposal.[17] The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan (SWIRP), also referred to as the City's Zero Waste Plan, whose goal is to lead Los Angeles towards being a "zero waste" City by 2030.[18] These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion (e.g., recycling) for the City to 76 percent as of 2013.[19] The City has also approved Ordinance No. 181519 (Los Angeles Municipal Code (LAMC) Chapter VI, Article 6, Section 66.32-66.32.5), which requires the diversion of mixed construction and demolition debris to City certified construction and demolition waste processors. The project would be consistent with the City and State waste requirements by utilizing waste collection services that are approved by the City and that meet the

16 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649. 2011, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.8.&article=. Access October 2017

17 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.9. January 2015, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.9.&article=. Accessed October 2017.

18 City of Los Angeles Department of Public Works, LA Sanitation, Solid Waste Integrated Resources Plan (SWIRP) – A Zero Waste Management Plan, October 2013, https://www.lacitysan.org/san/sandocview?docname=cnt012522. Accessed October 2017.

19 City of Los Angeles Department of Public Works, LA Sanitation, Recycling, 2017, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r?_adf.ctrl-state=kq9mn3h5a_188. Accessed October 2017.

applicable requirements for waste diversion and recycling mandates. The City generally relies on single-stream waste recycling where mixed waste is collected and sorted for recycling at a waste reclamation facility. The project would subscribe to a municipal solid waste collection service that is approved by the City and that meets applicable City and State waste collection, management, recycling and diversion requirements.

Consistency with Planning Goals, Policies and Objectives of the City of Los Angeles.

The Project Site is located within the Central City Community Plan area in the City of Los Angeles. The Project Site has a General Plan land use designation of High Density Residential and is currently zoned [Q]R5-4D-O. The R5 zoning designation permits the development of high density residential development. The "[Q]" Condition allows commercial uses to be included along with the residential development provided the floor area for the commercial uses does not exceed a 2:1 FAR. The Height District No. 4 permits a FAR of 13:1. However, the "D" limitation limits the floor area to a maximum of 6:1 FAR, unless additional floor area is permitted through a Transfer of Floor Area (TFAR). The Project is located within a designated Transit Priority Area and as a mixed-use project qualifies for the 13:1 FAR pursuant to Section 14.5 of the LAMC as a Transit Area Mixed Use Project that allows the proposed FAR to be based on the area contained within the centerlines of Olive Street 11th Street, and the abutting alley. The Project Site is also located in a Los Angeles State Enterprise Zone, Central City and Downtown Parking Districts, Greater Downtown Housing Incentive Area, South Park II Business Improvement District, and Central City Revitalization Zone.

The Project is consistent with many of the goals, policies and objectives of the City of Los Angeles General Plan, the Housing Element, and the Do Real Planning Guidelines. In addition, all entitlements being considered for approval by the City of Los Angeles conform with the appropriate sections set forth in the LAMC and the underlying zoning.

General Plan Framework

The General Plan Framework includes the following goals, objectives and policies relevant to the proposed mixed-use development:

Objective 3.1: Accommodate a diversity of uses that support the needs of the City's existing and future residents, businesses, and visitors.

Policy 3.1.1: Identify areas on the Land Use Diagram and the Community Plans sufficient for the development of a diversity of uses that serve the needs of existing and future residents (housing, employment, retail, entertainment, cultural/institutional, educational, health, services, recreation, and similar uses), provide job opportunities, and support visitors and tourism.

The Project would provide 794 multi-family residential units and approximately 12,504 square feet of neighborhood serving commercial uses and would replace the existing four commercial buildings that total 35,651 square feet on the Project Site. The range of housing types and

commercial uses represent a more diverse mix of land uses that would support the needs of the City's existing and future residents, businesses, and visitors. Downtown Los Angeles is a jobs-rich area and providing more residential uses on the Project Site would provide for needed housing in the City, particularly housing in close proximity to multi-modal transportation options.

The Framework Element Land Use Diagram(s) designate(s) districts, centers and mixed-use boulevards that are encouraged to develop with appropriate uses and character for their land use designations. The Project Site is located in an area that is identified as "Downtown Center," which is targeted for major cultural and entertainment facilities, hotels, professional offices, corporate headquarters, financial institutions, high-rise residential towers, regional transportation facilities and the Convention Center according to the City's General Plan Framework's Land Use Diagram. The Downtown Center is generally characterized by a floor area ratio up to 13:1 and high-rise buildings. Development of the Project would support the intent of the Downtown Center designation by providing high-rise residential with neighborhood serving commercial uses that provide housing options near regional transportation facilities, including the Metro Blue Line and Expo Line station at Pico Boulevard, and near job and entertainment opportunities including professional, offices, corporate headquarters, financial institutions, museums, theaters, restaurant, shopping, and other commercial service uses. The provision of residential units at this Downtown location would serve the needs of City residents, would expand the diversity within the designated Downtown Center, and provide housing in close proximity to the aforementioned commercial, retail, entertainment, and restaurant uses. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment.

Objective 3.2: To provide for the spatial distribution of development that promotes an improved quality of life by facilitating a reduction of vehicle trips, vehicle miles traveled, and air pollution.

Policy 3.2.3: Provide for the development of land use patterns that emphasize pedestrian/bicycle access and use in appropriate locations.

The Project would contribute to the concentration of mixed-use development along a corridor with convenient access to the Metro Blue Line and Expo Line (less than 0.5 miles), Metro bus and Metro rapid bus lines, and the LADOT DASH and Commuter Express lines. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project would also provide up to 886 bicycle spaces for on-site residents and the on-site commercial uses.

The new residential population would have access to commercial development on site as well as retail, restaurant, office, and entertainment activities within walking and biking distance and via bus and rail service. The Project would provide pedestrian access from various at-grade sidewalks and steps and would include a ground-level public Plaza with streetscaping,

landscaping and a public art display. At the pedestrian level, the Project would increase the sidewalk width and provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street to promote pedestrian activity.

The Project's location, design, and specific features, including its proximity to high-capacity and high-frequency transit, commercial uses easily accessible from the ground-level, and implementation of a TDM program that will reduce the use of single occupant vehicles and increase the number of trips by walking, bicycle, carpool, vanpool, and transit. The Project would be expected to result in VMT reductions of approximately 32 percent daily, including 31 percent during the morning peak hour and 32 percent during the afternoon peak hour.

Objective 3.16: Accommodate land uses, locate and design buildings, and implement streetscape amenities that enhance pedestrian activity.

The exterior boundaries of the Project Site along Olive Street and 11th Street would provide streetscape amenities for pedestrians, including public Plaza with streetscaping, landscaping and a public art display. At the pedestrian level, the Project would increase the sidewalk width and provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street to promote pedestrian activity. There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site and landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants. The addition of trees, landscaping, and streetscaping would enhance the Project Site and make it more inviting for pedestrian activity. The Project would also include neighborhood serving commercial uses easily accessible from the ground-level along Olive Street and 11th Street, which would also enhance pedestrian activity.

Housing Element 2013-2021

The Project is consistent with goals, objectives and policies of the Housing Element 2013-2021, adopted by the Los Angeles City Council on December 3, 2013. The City of Los Angeles is committed to providing affordable housing and amenity-rich sustainable neighborhoods for its residents, answering the variety of housing needs of its growing population. The purpose of the General Plan Housing Element is to provide guidance for meeting the City's need for housing per the allocation defined in SCAG's Regional Housing Needs Assessment.

Goal 1: An adequate supply of ownership and rental housing that is safe, healthy and affordable to people of all income levels, races, ages, and suitable for their various needs.

Objective 1.1: Produce an adequate supply of rental and ownership housing in order to meet current and projected needs.

Policy 1.1.3: Facilitate new construction and preservation of a range of different housing types that address the particular needs of the city's households.

Policy 1.1.4: Expand opportunities for residential development, particularly in designated Centers, Transit Oriented Districts and along Mixed-Use Boulevards.

The 2013-2021 Housing Element identifies a need for 82,002 new housing units, of which 35,412 units, i.e. 43.2 percent of all units, would be marketed at above moderate income levels. The remaining 56.8 percent of the needed housing units consist of 13,728 moderate income units (16.8 percent), 12,435 low income units (15.2 percent), 10,213 very low income units (12.5 percent), and 10,213 extremely low income units (12.5 percent). The Project would provide 794 new multi-family residential units that would serve the growing population of the community in the designated Downtown Center. The Project would also include commercial uses, which would contribute to meeting the needs of Project residents, as well as off-site residents, tourists and visitors. The Project would remove the existing commercial uses and result in a net decrease of 23,147 square feet of commercial space. However, Downtown Los Angeles is jobs rich and the Project's inclusion of high-rise residential uses near transit, office, commercial, and entertainment uses results in increased land use diversity for the area. The 794 residential units would represent approximately 0.97 percent of the 82,002 needed units identified in the SCAG Regional Housing Needs Assessment (RHNA) for the 8-year (2014 to 2021) planning period. The Project would provide a range of housing types for all family types including studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units.

Objective 1.3: Forecast and plan for changing housing needs over time in relation to production and preservation needs.

Policy 1.3.5: Provide sufficient land use and density to accommodate an adequate supply of housing units by type and cost within the City to meet the projections of housing needs, according to the policies and objectives of the City's Framework Element of the General Plan.

The Project would concentrate new housing within the Downtown Center consistent with policies and objectives of the Framework Element. The Downtown Center is generally characterized by a floor area ratio up to 13:1 and high-rise buildings. As discussed previously, Development of the Project would support the intent of the Downtown Center designation by providing high-rise residential with neighborhood serving commercial uses that provide housing options near regional transportation facilities, including the Metro Blue Line and Expo Line station at Pico Boulevard, and near job and entertainment opportunities including professional, offices, corporate headquarters, financial institutions, museums, theaters, restaurant, shopping, and other commercial service uses. The provision of residential units at this Downtown location would serve the needs of City residents, would expand the diversity within the designated Downtown Center, and provide housing in close proximity to the aforementioned commercial, retail, entertainment, and restaurant uses. Furthermore, as stated above, the Project would assist the City in meeting its housing needs identified in SCAG's Regional Housing Needs Assessment.

Goal 2: Safe, Livable, and Sustainable Neighborhoods

Objective 2.1: Promote safety and health within neighborhoods.

Policy 2.1.1: Establish development standards and policing practices that reduce the likelihood of crime

Policy 2.1.2: Establish development standards and other measures that promote and implement positive health outcomes.

The Project would promote safety and health within the neighborhood by providing landscaping, streetscaping, new sidewalks, and appropriate lighting along Olive Street and 11th Street. The Project would include neighborhood serving commercial uses easily accessible from the ground-level on Olive Street and 11th Street. The Project would incorporate a security program to ensure the safety of residents and visitors, including controlled access, video surveillance, and security personnel.

The Project would implement Project Design Features to promote positive health outcomes, including compliance with the Los Angeles Green Building Code and 2016 California Green Building Standards (CALGreen) Code, and compliance with USGBC LEED Gold Certification standards. To obtain LEED credits, the Project would use adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of VOCs and/or other air quality pollutants. The Project would also minimize transportation-related emissions by being located within walking distance of major transit centers including the Metro Blue Line and Expo Line station on Pico Boulevard, as well as other off-site office, commercial, and entertainment uses. The Project would enhance the pedestrian space to encourage walking and other non-automotive forms of transportation. In addition, the project would provide up to 886 short-term and long-term bicycle parking spaces to promote bicycling. The Project would place residential uses approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110), which would serve as an adequate buffer distance from these freeways so that potential exposure to freeway-generated air pollutant emissions would not pose an elevated health risk.

Objective 2.3: Promote sustainable buildings, which minimize adverse effects on the environment and minimize the use of non-renewable resources.

Policy 2.3.2: Promote and facilitate the reduction of water consumption in new and existing housing.

Policy 2.3.3: Promote and facilitate reduction of energy consumption in new and existing housing.

Policy 2.3.4: Promote and facilitate reduction of waste in construction and building operations.

The Project would ensure sustainable building design through compliance with the 2016 CALGreen Code, Los Angeles Green Building Code, Los Angeles Building Code, Planning and Zoning Code, and compliance with USGBC LEED Gold Certification standards. Design features of the project would include implementation of heat island reduction strategies, optimization of building energy performance to achieve greater than the minimum 5 percent reduction from the LEED baseline as specified in the LEED required prerequisites, and water efficiency features to reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would provide on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied. Additionally, a

construction and demolition waste management plan will maximize the recycling or salvage of nonhazardous construction debris.

Objective 2.4: Promote livable neighborhoods with a mix of housing types, quality design and a scale and character that respects unique residential neighborhoods in the City.

Policy 2.4.1: Promote preservation of neighborhood character in balance with facilitating new development.

Policy 2.4.2: Develop and implement design standards that promote quality residential development.

As discussed previously, the Project would provide 794 multi-family residential units that would serve a broad section of the housing market, including singles, small families, and empty-nesters as well as larger units that could accommodate a larger family. The unit mix would include: studios, 1- and 2-bedroom units (with and without dens), and 3-bedroom units. The Project would be consistent with the character of the Downtown Center, which is targeted for high-rise residential towers, and major cultural and entertainment facilities, hotels, professional offices, corporate headquarters, financial institutions, regional transportation facilities, and other urban uses. The Project would also be designed consistent with the City's Downtown Design Guide. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment. The Project would also include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site and landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants. The addition of trees, landscaping, and streetscaping would enhance the Project Site and make it more inviting for pedestrian activity.

City Planning Commission – Do Real Planning

Promoting the ideals of inspired, principles land use planning concepts at a citywide level, the Los Angeles City Planning Commission has fostered new visions with its "Do Real Planning." The proposed project fulfills several of these important objectives and goals:

Demand a Walkable City: This concept poses the question of whether a project actively welcomes its own users, its neighbors and its passerby. The Project proposes a walkable concept within the Downtown Center by orienting commercial spaces towards the street frontages along Olive Street and 11th Street. The Project would provide and enhance the street frontages with and landscaping, streetscaping, and new and wider sidewalks along Olive Street and 11th Street, as well as providing 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover on the Project Site. In addition, a public Plaza with streetscaping, landscaping and a public art display. These features would enliven the pedestrian environment and improve the visual character of the Project Site and the Downtown Center area.

Offer Basic Design Standards: The Project would be consistent with the character of the Downtown Center, which is targeted for high-rise residential towers and other major commercial, entertainment, office, financial, and transportation centers. The Project would also be designed consistent with the City's Downtown Design Guide. The provision of the neighborhood serving commercial uses within the Project Site that would be accessible at ground-level would support the Project Site's residents as well as other off-site residents, tourists, and visitors in the area by proving commercial services in a walkable environment. The parking areas within the Podium would be covered with mesh screening. Residential liner units in the upper Podium levels (5 through 9) would offer a variation in the building appearance that is defined by the horizontal lines of the residential balconies. The design of the Project would be consistent with the overall character of the Downtown Center while also providing an appealing Project Site.

Locate Jobs Near Housing: The Commission observes that "the time for segregating jobs from housing in Los Angeles has passed." The Commission observes that the City has "several stale business boulevards and districts that are ripe for renovation; in these traditionally commercial-only locations, we must include both jobs and housing in the mix." The Project Site is primed for renovation proposed by the Commission insofar as the project would bring needed housing units into the jobs-rich Downtown Center area, along with neighborhood serving commercial uses.

Produce Green Buildings: The Project would comply with the applicable requirements of the 2016 CALGreen Code, the Los Angeles Green Building Code, and compliance with the USGBC LEED Gold Certification standards. Some of the Project's key design features that would contribute to energy efficiency include optimizing building energy performance to achieve greater than the minimum 5 percent reduction from the LEED baseline specified in the LEED required prerequisites and water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline. The Project would include other specific design features that would be incorporated into the Project design to enhance energy efficiency and sustainability. Wraparound-cantilevered balconies would be provided on every residential level that would provide shade and minimize solar gain throughout the building. Further considerations regarding energy efficiency and sustainability include native plants and drip/subsurface irrigation systems, individual metering or sub metering for water use, leak detection systems, rainwater harvesting and provisions for electric vehicle charging (wiring for 5 percent of all parking spaces and pre-wiring for 20 percent of all parking spaces).

Identify Smart Parking Requirements: The Project would provide parking within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The parking areas within the Podium would be covered with mesh screening, while residential liner units in the upper Podium levels (5 through 9) would offer a variation in the building appearance that is defined by the horizontal lines of the residential balconies. The Project would provide 886 bicycle parking spaces for residents and the commercial uses, with short-term bicycle parking located along the streets.

Exhibit 1 Project Site Plans

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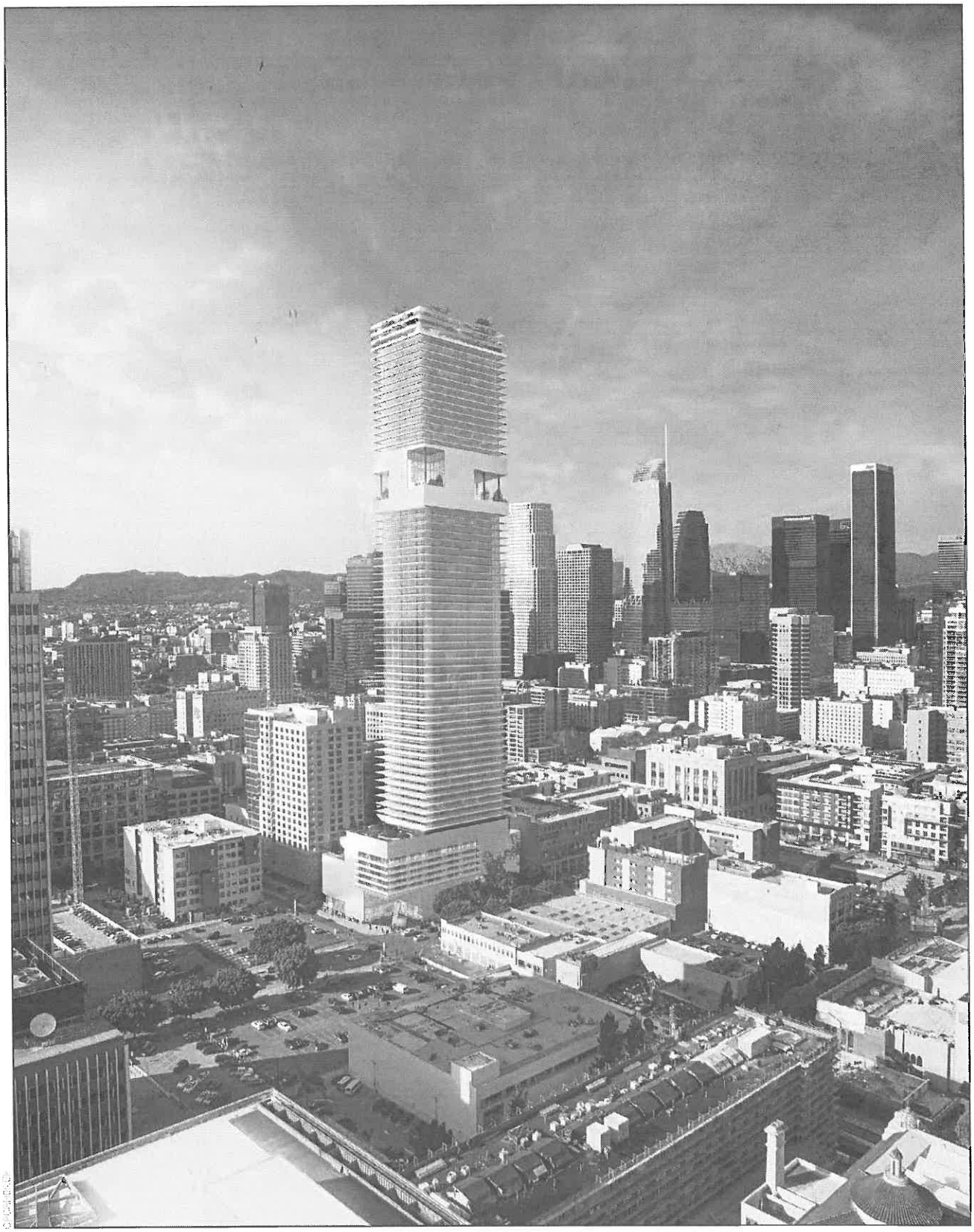
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VERSION : PCL6 6.51 09-03-2013

Exhibit 2 Project Renderings

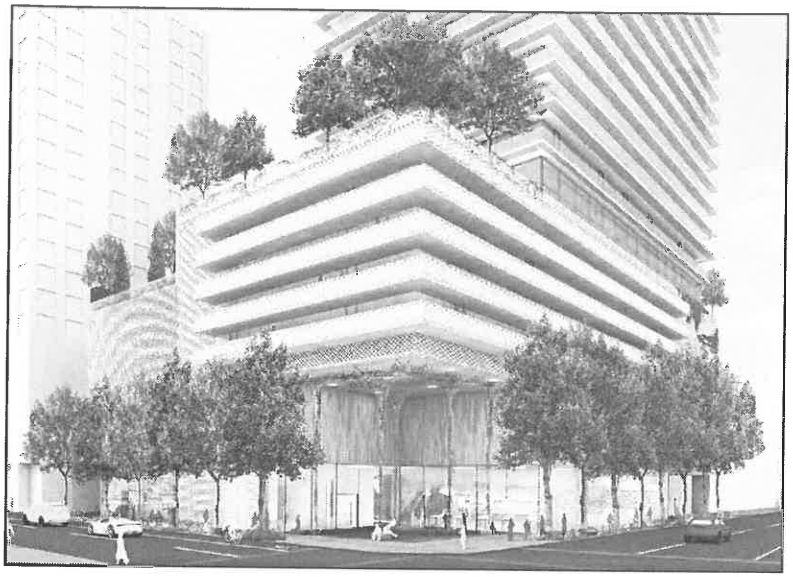


SOURCE: ODA New York, 2017

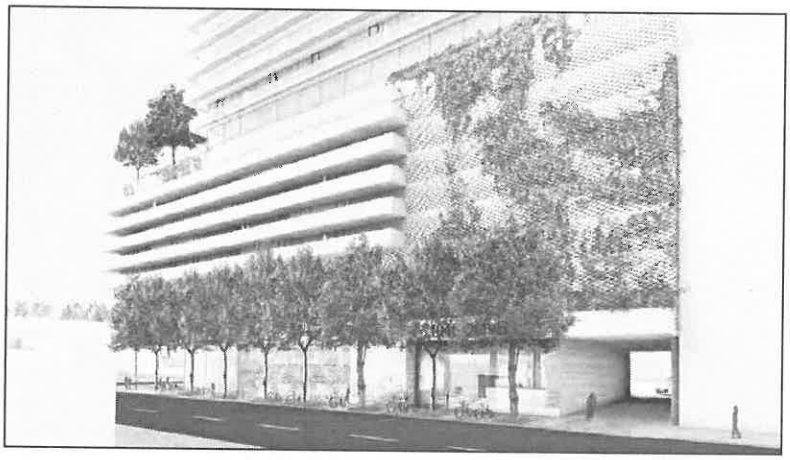
1045 Olive Street

Figure A-4
Conceptual Project Rendering

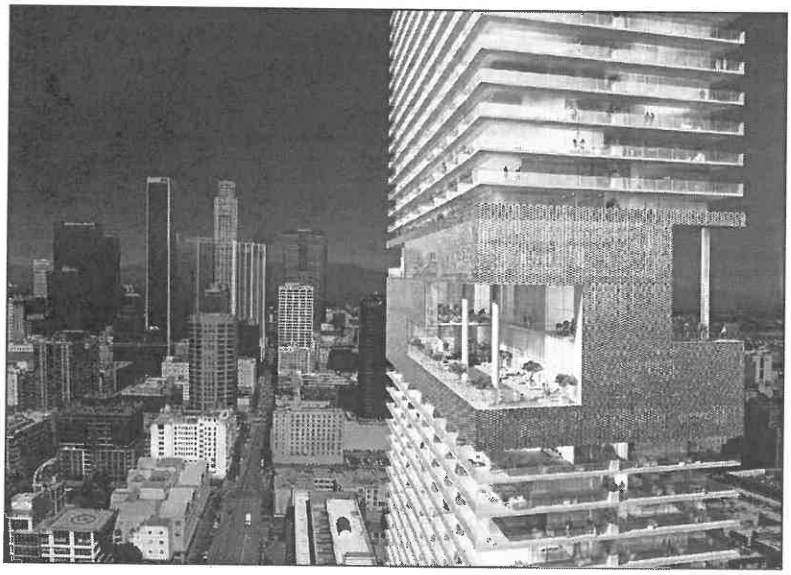
ESA



Plaza and Commercial at 11th Street and Olive Street



Commercial and Residential Entry on Olive Street



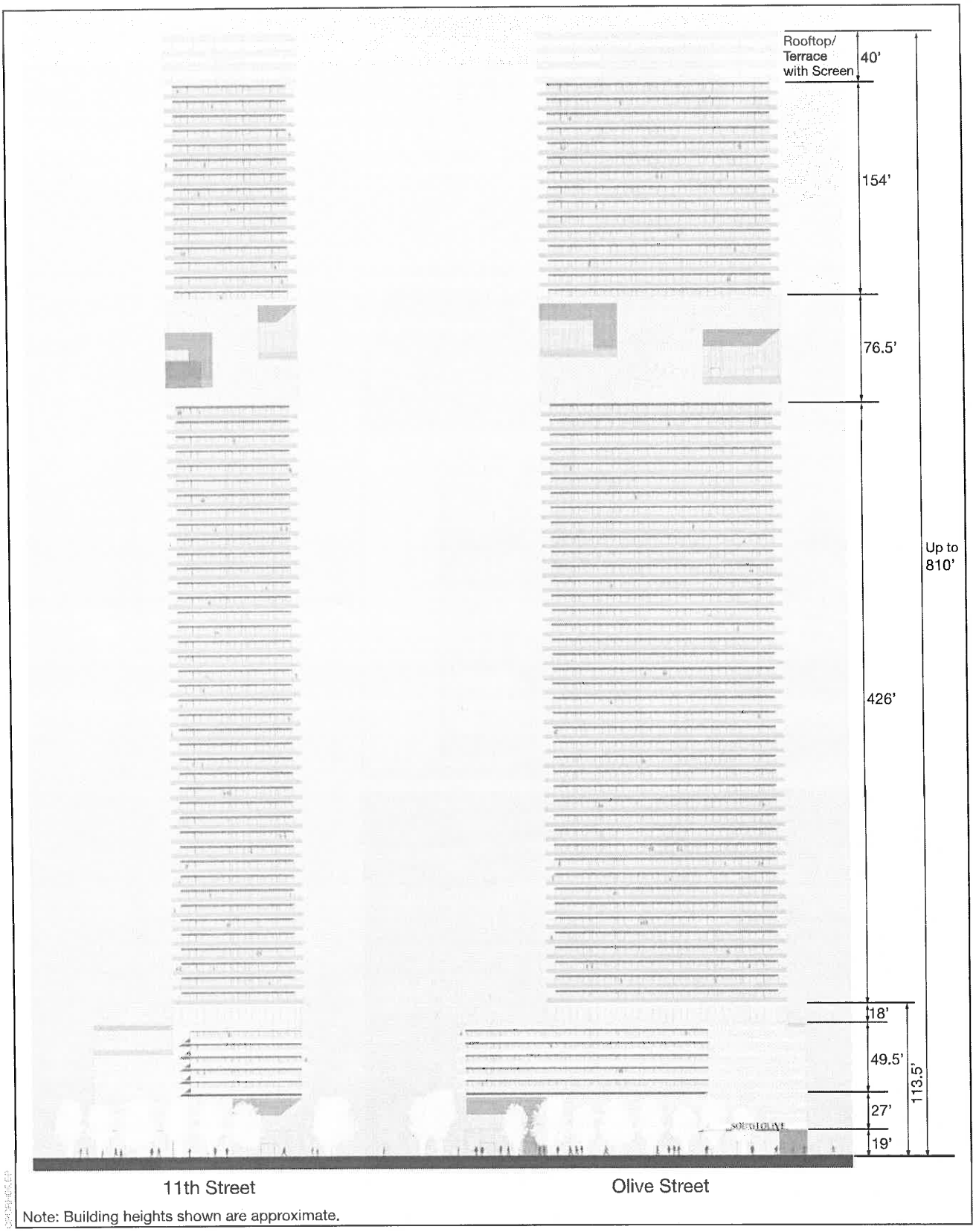
Nighttime - Residential Amenity Floors

SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-5
Selected Rendering Details

ESA



Note: Building heights shown are approximate.

SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-6
Conceptual 11th Street and Olive Street Elevations

ESA

Exhibit 3 GHG Emissions Offset Approach for the 1045 Olive Street Project / Commitment Letter and LEED Measures

December 19, 2017

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: Greenhouse Gas Emissions Offset Approach for the 1045 Olive Project

Dear Ms. Huang:

This letter is provided as a supplement to the application filed by 1045 Olive, LLC. (the "Project Applicant"), who proposes to develop the 1045 Olive Project (the "Project") in the Central City Community Plan and the City Center Redevelopment Plan Project area of the City of Los Angeles.

As you know, the Project Applicant has applied for certification by the Governor as a leadership project under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (collectively, "AB 900" or the "Act"). The application includes projected emissions for the Project that show certain projected net additional emissions of greenhouse gases (GHG) as a result of the construction of the Project and as a consequence of Project operations. The Project Applicant proposes to meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through the implementation of GHG-reducing Project Design Features and/or acquisition of voluntary carbon credits sufficient to offset all projected additional emissions, in the following manner:

1. No later than six (6) months after the issuance of a Temporary Certificate of Occupancy for the Project, the Project Sponsor shall provide to the lead agency, the City of Los Angeles, a calculation of the net additional emissions resulting from the construction of the Project (the "Construction Emissions"), to be calculated in accordance with the methodology agreed upon by the Air Resources Board (ARB) in connection with the AB 900 certification of the Project (the "Agreed Methodology"). Project Sponsor shall provide courtesy copies of the calculations to the ARB and the Governor's Office promptly following transmittal of the calculations to the City of Los Angeles. Project Sponsor shall enter into one or more contracts for the implementation of GHG-reducing Project Design Features and/or purchase voluntary carbon credits from a qualified GHG emissions broker in an amount sufficient to offset the Construction Emissions. The Project Sponsor shall provide courtesy copies of any such contracts to the ARB and the Governor's Office promptly following the execution of such contracts.

2. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits from a qualified GHG emissions broker (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

   Prior to execution of the contract(s), the Applicant and its consultant shall calculate the Operational Emissions, in accordance with the methodology described in the Applicant's "Application for Environmental Leadership Development Project," specifically the "Greenhouse Gas Emissions Methodology and Documentation" prepared by Environmental Science Associates (ESA).

   Once the City has had an opportunity to review and approve the methodology and associated calculations, the Applicant shall provide copies of the calculation methodology to the California Air Resources Board (CARB) and Governor's Office of Planning and Research (OPR), which is then subject to a determination signed by the Executive Officer of CARB pursuant to the procedures set forth in Section 6 of OPR's Guidelines. The City will issue a Certificate of Occupancy upon receipt of the following: (1) a fully executed copy of the carbon offset purchase agreement(s); (2) a final CARB Determination that the Project will not result in any net additional GHG emissions; and (3) a copy of OPR's Certification Letter for the Project.

3. The following project design features were accounted for in the AB 900 application for purposes of reducing GHG emissions and are, therefore, included as commitments in this letter.

   A. The design of the new buildings shall incorporate features to be capable of achieving Gold certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)-CS® or LEED-NC® Rating System as of January 1, 2011. Specific sustainability features that are integrated into the Project design to enable the Project to achieve at least LEED® Gold certification would include but not be limited to the following:

      a. The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.

      b. The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

c. The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.

d. The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

e. The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.

f. The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

B. The residential units within the Project shall not include the use of natural gas-fueled fireplaces.

The commitments outlined herein will be incorporated into the Project's Final Environmental Impact Report (FEIR) as a proposed improvement measure. The Project Sponsor will agree to comply with all improvement measures and mitigation measures contained in the FEIR through the Project's Mitigation Monitoring and Reporting Program, which represents a binding and enforceable agreement with the Project's lead agency, the City of Los Angeles.

Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Elliott Kahn
Its: Authorized Signatory

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

February 14, 2018

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: Greenhouse Gas Emissions Offset Approach for the 1045 Olive Project

Dear Ms. Huang:

This letter is provided as a supplement to the application filed by 1045 Olive, LLC. (the "Project Applicant"), who proposes to develop the 1045 Olive Project (the "Project") in the Central City Community Plan and the City Center Redevelopment Plan Project area of the City of Los Angeles.

As you know, the Project Applicant has applied for certification by the Governor as a leadership project under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (collectively, "AB 900" or the "Act"). The application includes projected emissions for the Project that show certain projected net additional emissions of greenhouse gases (GHG) as a result of the construction of the Project and as a consequence of Project operations.

The Applicant has committed to no net increase in construction and operation-related GHG emissions. Consistent with policy recommendations included in California Air Resources Board's (CARB) California 2017 Climate Change Scoping Plan,[1] while offsets are a potential way to mitigate GHG emissions, other options will continue to be explored as well to the extent feasible, with the following order of preference: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry. To the extent offsets are used to mitigate GHG emissions, prior to issuance or any Certificate of Occupancy for any building in the project, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits issued by a recognized and reputable carbon registry, which contract, together with any previous contracts, shall evidence the purchase of carbon credits in an amount sufficient to offset the operational emissions attributable to each building constructed within the project over the analysis horizon of 30 years. Prior to execution of the contract(s), the Applicant shall provide the lead agency (the City of Los Angeles) a calculation of the net additional operational GHG emissions according to the methodology followed in the

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1 The California 2017 Climate Change Scoping Plan is available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Greenhouse Gas Emissions Methodology and Documentation for the 1045 Olive Street Project document. The Applicant shall agree to promptly submit copies of executed contracts for purchased carbon credits to CARB and to the Governor's office. The commitments to enter into contracts to offset net additional GHG emissions will be incorporated as a condition of project approval under the Public Resources Code sec. 21183(e), which is binding and enforceable by the lead agency.

The Project Applicant proposes to meet the requirement set forth in California Public Resources Code Section 21183(c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through the implementation of GHG-reducing Project Design Features and/or acquisition of voluntary carbon credits sufficient to offset all projected additional emissions, in the following manner:

1. No later than six (6) months after the issuance of a Temporary Certificate of Occupancy for the Project, the Project Applicant shall commit to providing to the lead agency, the City of Los Angeles, a calculation of the net additional emissions resulting from the construction of the Project (the "Construction Emissions"), to be calculated in accordance with the methodology agreed upon by the California Air Resources Board (CARB) in connection with the AB 900 certification of the Project (the "Agreed Methodology"). Project Applicant shall provide courtesy copies of the calculations to CARB and the Governor's Office promptly following transmittal of the calculations to the City of Los Angeles. Project Applicant shall enter into one or more contracts for the implementation of GHG-reducing Project Design Features and/or purchase voluntary carbon credits from a recognized and reputable carbon registry in an amount sufficient to offset the Construction Emissions. The Project Applicant shall provide courtesy copies of any such contracts to CARB and the Governor's Office promptly following the execution of such contracts.

2. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall commit to entering into one or more contracts to purchase carbon credits from a recognized and reputable carbon registry (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

   Prior to execution of the contract(s), the Applicant and its consultant shall calculate the Operational Emissions, in accordance with the methodology described in the Applicant's "Application for Environmental Leadership Development Project," specifically the "Greenhouse Gas Emissions Methodology and Documentation" prepared by Environmental Science Associates (ESA).

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   B. The residential units within the Project shall not include the use of natural gas-fueled fireplaces.

The commitments outlined herein will be incorporated into the Project's Final Environmental Impact Report (FEIR) as a proposed improvement measure. The Project Applicant will agree to comply with all improvement measures and mitigation measures

contained in the FEIR through the Project's Mitigation Monitoring and Reporting Program, which represents a binding and enforceable agreement with the Project's lead agency, the City of Los Angeles.

Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Adam Tartakovsky
Its: Authorized Signatory

cc: Alejandro Huerta, City Planner, City of Los Angeles, Department of City Planning
Ryan Leaderman, Partner, DLA Piper LLP
Heidi Rous, Air Quality and Noise Group Director, ESA

Transportation

- The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to the site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

Water Quality

- Use of on-site storm water treatment in accordance with City standards.
- Installation of catch basin inserts and screens to provide runoff contaminant removal in accordance with City standards.
- Preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plan (SUSMP), both of which would include Best Management Practices (BMPs) to control stormwater runoff, minimize pollutant loading and erosion effects during and after construction.

Energy Conservation and Efficiency

- Use of full-cutoff or fully shielded on-street lighting oriented to pedestrian areas/sidewalks so as to minimize overlighting, light trespass, and glare.
- Inclusion of outdoor air flow measuring devices, additional outdoor air ventilation, and use of low emitting materials to promote indoor environmental quality.
- Use of refrigerants that reduce ozone depletion.
- Provision of conduit that is appropriate for future photovoltaic and solar thermal collectors.
- Post-construction commissioning of building energy systems performed on an ongoing basis to ensure all systems are running at optimal efficiency.
- Purchase of renewable source power ("green power") or implementation of other carbon offset programs or carbon offset purchases to minimize carbon emissions.
- Review of commissioning activities by an independent Commissioning Agency and development and implementation of commissioning plan.
- Implementation of building level energy meter to provide monthly tracking of energy consumption.
- Provision of metering for tenant space.

Solid Waste

- Provision of on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied.
- Implementation of a construction waste management plan to recycle and/or salvage a minimum of 65 percent of nonhazardous construction debris.
- Diversion of construction materials from landfill. Diversion must include at least three material streams (e.g., recovery, reuse, and recycling).

Air Quality

- Employment of practices that prohibit the use of chlorofluorocarbons (CFCs) in heating, ventilation, and air conditioning (HVAC) systems.
- Installation of MERV 11 filtration at outside air intakes to improve indoor air quality (per LEED minimum indoor air quality performance requirements).
- Meeting applicable California and/or Los Angeles air emissions requirements for all heating or cogeneration equipment utilized at the Project Site.
- Installation of landscaping and canopy trees throughout the Project Site, including roof decks, pool decks, and terraces, to provide shading and capture carbon dioxide (CO_2) emissions.
- Use of adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air pollutants.
- Development of an Indoor Air Quality Management Plan for construction and pre-occupancy phases.
- Provision of individual control on thermostats to 50 percent of building occupants. For residential buildings, the credit can be achieved by providing access to operable windows. For commercial spaces, control must be provided to 50 percent of occupants in order to meet the intent of the credit.
- HVAC system design compliance to ASHRAE 55. The Core & Shell base building mechanical systems must allow for the tenant build-out to meet the requirement of this credit.

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

1045 Olive Project
LEED Measures

The following list highlights the main sustainability strategies to be implemented into the 1045 Olive Project in order to achieve Gold certification or greater under LEED v3 or the LEED v4 rating system, as applicable. This is in addition to the strategies needed to reduce the greenhouse gas (GHG) emissions, as required by the California Air Resources Board (CARB).

Design

- Prior to Project approvals, a preliminary LEED action plan will be submitted to the City of Los Angeles Department of City Planning. Prior to issuance of a building permit, conduct a preliminary LEED meeting with a minimum of four key Project team members and the owner or owner's representative. As part of the meeting, review a LEED action plan that, at a minimum (1) determines the LEED certification level to pursue (Gold or Platinum); (2) selects the LEED credits to meet the targeted certification level; and (3) identifies the responsible parties, including but not limited to the Los Angeles Department of Building and Safety, the City of Los Angeles Department of City Planning, the City of Los Angeles Department of Public Works, Bureau of Engineering, to ensure the LEED requirements for each prerequisite and selected credit are met. Modifications to the selected criteria are permissible during construction as long as the targeted LEED certification level continues to be met.

Site

- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

Transportation

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  - Preferential parking for carpools and vanpools for employees.
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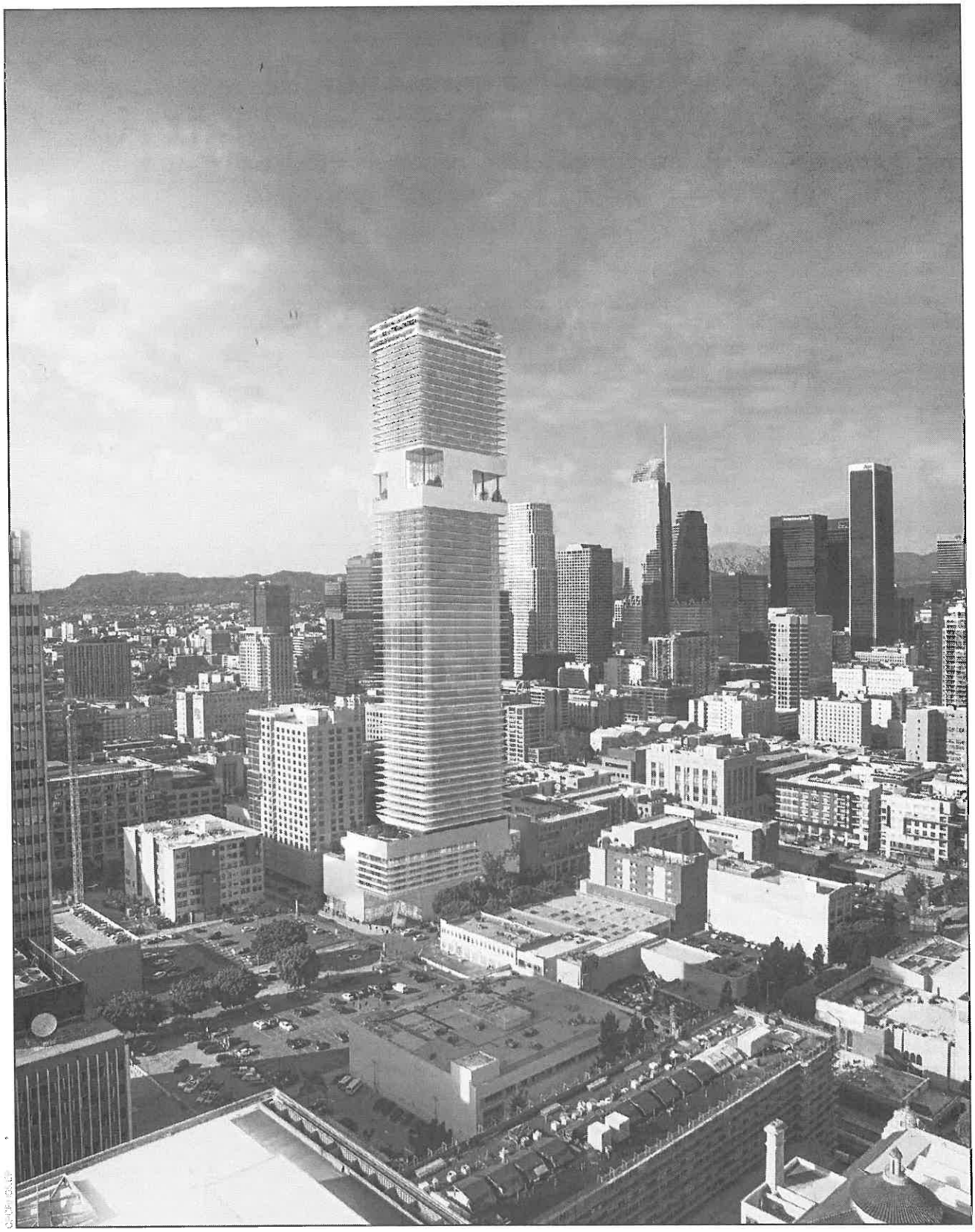
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Exhibit 2 Project Renderings

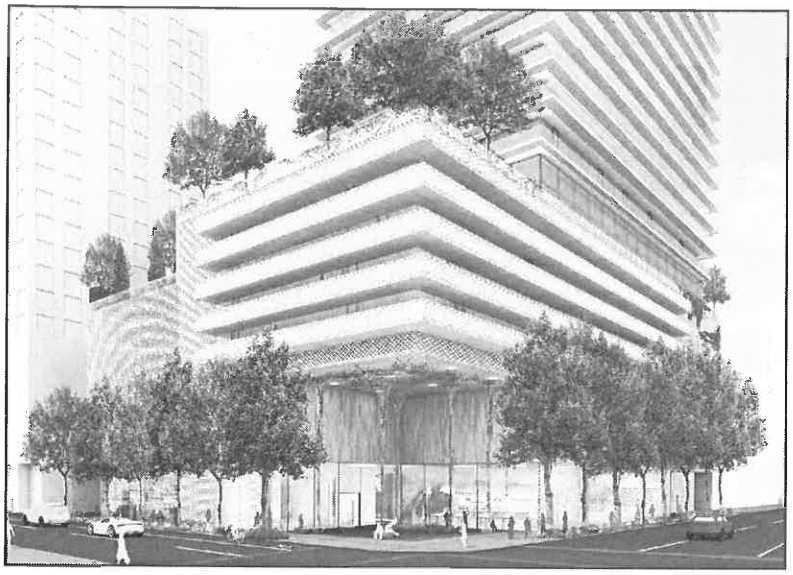


SOURCE: ODA New York, 2017

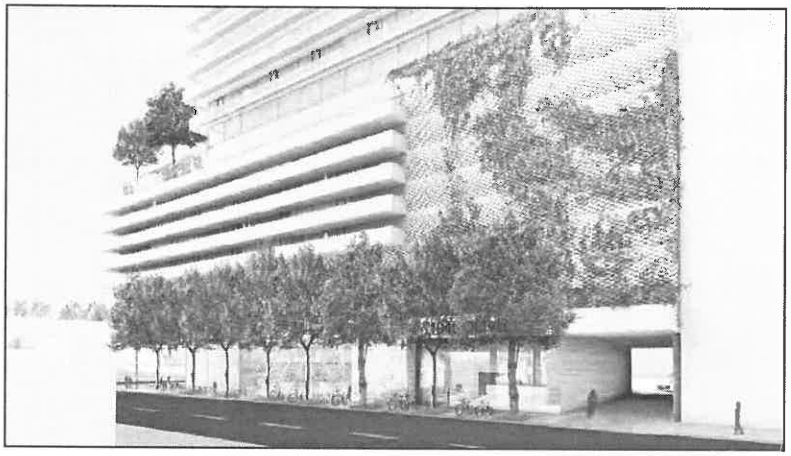
1045 Olive Street

Figure A-4
Conceptual Project Rendering

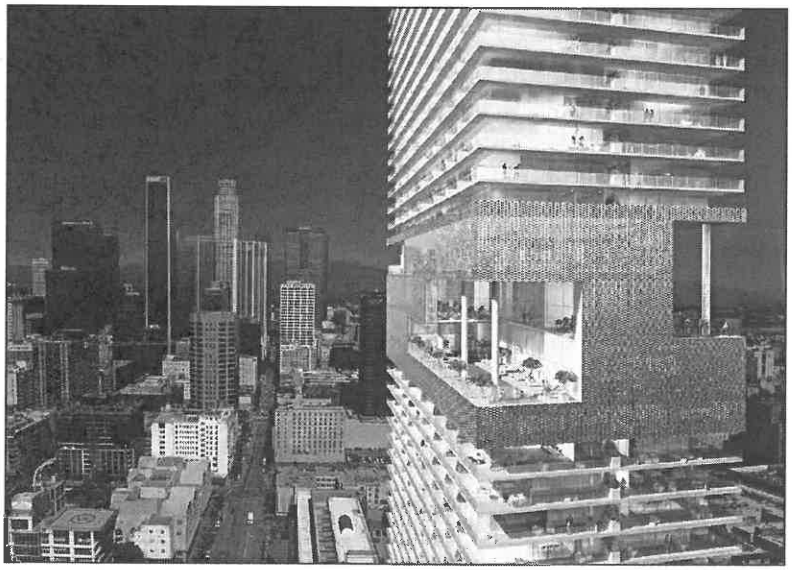
ESA



Plaza and Commercial at 11th Street and Olive Street



Commercial and Residential Entry on Olive Street



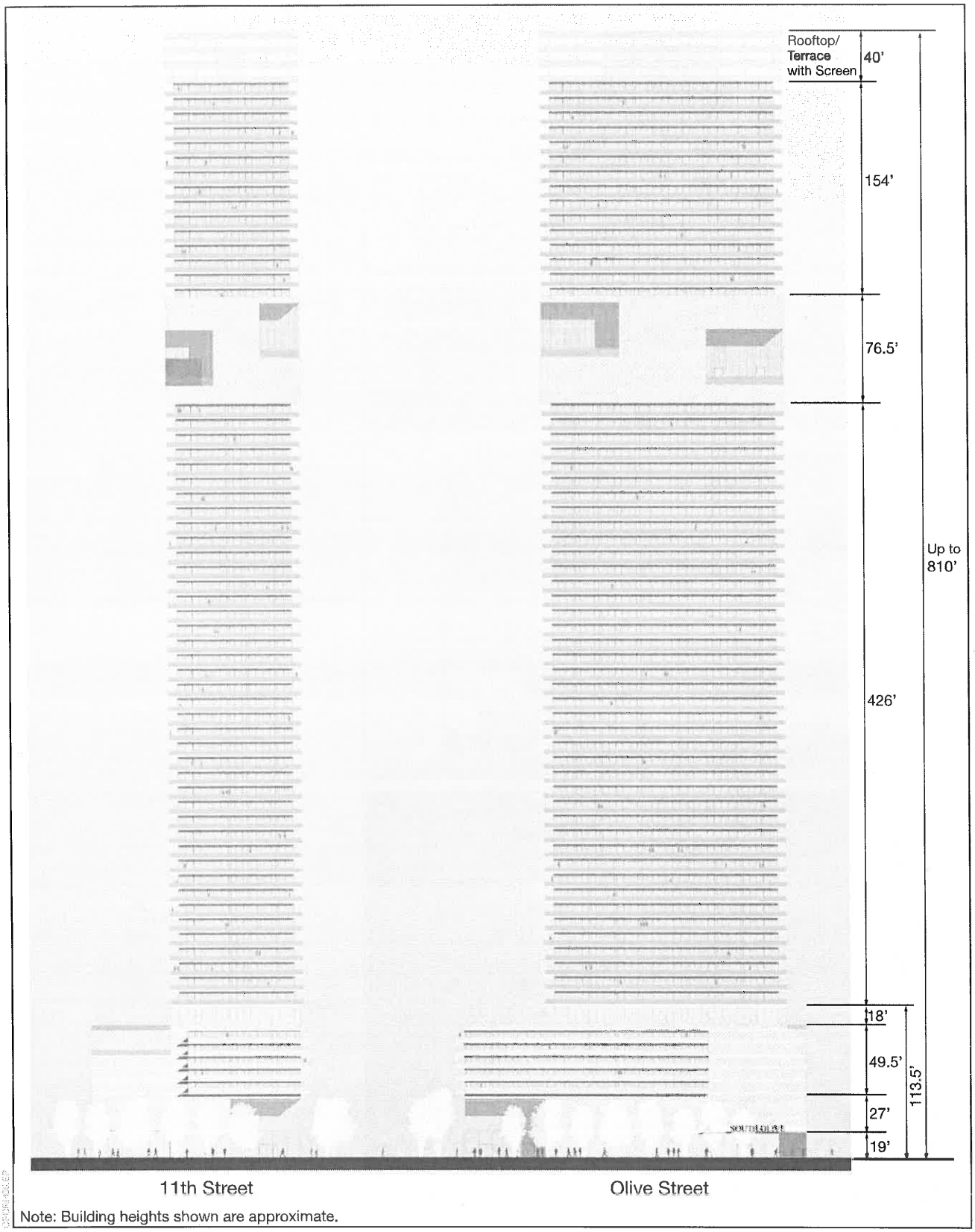
Nighttime - Residential Amenity Floors

SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-5
Selected Rendering Details

ESA



SOURCE: ODA New York, 2017

1045 Olive Street

Figure A-6
Conceptual 11th Street and Olive Street Elevations

ESA

Exhibit 3 GHG Emissions Offset Approach for the 1045 Olive Street Project / Commitment Letter and LEED Measures

December 19, 2017

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

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Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Elliott Kahn
Its: Authorized Signatory

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

1045 Olive Project
LEED Measures

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- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

Transportation

- The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to the site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

Water Quality

- Use of on-site storm water treatment in accordance with City standards.
- Installation of catch basin inserts and screens to provide runoff contaminant removal in accordance with City standards.
- Preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plan (SUSMP), both of which would include Best Management Practices (BMPs) to control stormwater runoff, minimize pollutant loading and erosion effects during and after construction.

Energy Conservation and Efficiency

- Use of full-cutoff or fully shielded on-street lighting oriented to pedestrian areas/sidewalks so as to minimize overlighting, light trespass, and glare.
- Inclusion of outdoor air flow measuring devices, additional outdoor air ventilation, and use of low emitting materials to promote indoor environmental quality.
- Use of refrigerants that reduce ozone depletion.
- Provision of conduit that is appropriate for future photovoltaic and solar thermal collectors.
- Post-construction commissioning of building energy systems performed on an ongoing basis to ensure all systems are running at optimal efficiency.
- Purchase of renewable source power ("green power") or implementation of other carbon offset programs or carbon offset purchases to minimize carbon emissions.
- Review of commissioning activities by an independent Commissioning Agency and development and implementation of commissioning plan.
- Implementation of building level energy meter to provide monthly tracking of energy consumption.
- Provision of metering for tenant space.

Solid Waste

- Provision of on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied.
- Implementation of a construction waste management plan to recycle and/or salvage a minimum of 65 percent of nonhazardous construction debris.
- Diversion of construction materials from landfill. Diversion must include at least three material streams (e.g., recovery, reuse, and recycling).

Air Quality

- Employment of practices that prohibit the use of chlorofluorocarbons (CFCs) in heating, ventilation, and air conditioning (HVAC) systems.
- Installation of MERV 11 filtration at outside air intakes to improve indoor air quality (per LEED minimum indoor air quality performance requirements).
- Meeting applicable California and/or Los Angeles air emissions requirements for all heating or cogeneration equipment utilized at the Project Site.
- Installation of landscaping and canopy trees throughout the Project Site, including roof decks, pool decks, and terraces, to provide shading and capture carbon dioxide (CO_2) emissions.
- Use of adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air pollutants.
- Development of an Indoor Air Quality Management Plan for construction and pre-occupancy phases.
- Provision of individual control on thermostats to 50 percent of building occupants. For residential buildings, the credit can be achieved by providing access to operable windows. For commercial spaces, control must be provided to 50 percent of occupants in order to meet the intent of the credit.
- HVAC system design compliance to ASHRAE 55. The Core & Shell base building mechanical systems must allow for the tenant build-out to meet the requirement of this credit.

Exhibit 4 AB 900 Traffic Assessment for the 1045 Olive Street Project

The **Mobility** Group
Transportation Strategies & Solutions

Memorandum

To: Alan Sako, ESA

From: Michael Bates, Iain Conway

Subject: 1045 S Olive Project – AB 900 Traffic Assessment

Date: October 2, 2017

This Memorandum provides a transportation assessment of the 1045 S Olive Project to determine whether it meets the transportation efficiency requirements for classification as an Environmental Leadership Development Project under California Assembly Bill 900 (AB 900).

1. Project Location

The Project Site is located in downtown Los Angeles, the dense, mixed-use urban core of the extensive metropolitan region. Downtown Los Angeles serves as the hub of the regional transit system with many regional rail and bus public transit services passing through or beginning and terminating services there. Downtown Los Angeles is also a highly walkable and bicycle-friendly area.

The Project Site is located at the northwest corner of Olive Street and 11th Street, and is bounded by Olive Street on the east, 11th Street on the south, an alley on the west and private property on the north. The block on which the Project is located is also bounded by Grand Avenue on the west and Olympic Boulevard to the north. The surrounding area includes a large range of newer mixed-use development, and older commercial, office, residential and warehouse uses.

The Project Site is directly served by Olive Street and 11th Street, which are designated as a Modified Avenue II and a Modified Collector Street respectively, in the City of Los Angeles Mobility Plan 2035. Adjacent streets are Grand Avenue and Olympic Boulevard which are designated as a Modified Avenue II and a Modified Avenue I respectively. There are bike lanes on Olive Street and on Grand Avenue.

The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is located less than 0.5 miles from the Pico Metro Station at Pico Boulevard and Flower Street. The Pico Metro Station serves the Metro Blue Line (Downtown Los Angeles – Long Beach) and Metro Expo Line (Downtown Los Angeles – Santa Monica), which travel at 6-minute and 12-minute intervals during weekday peak hours. These services terminate at 7th Street Metro Center Station in Downtown Los Angeles, providing access to the Metro Red and Purple Lines. The Project Site is also located within 0.7 miles of the 7th Street/Metro Center Station, which serves the Metro Red Line (Downtown Los Angeles – North Hollywood / Universal City) and Metro Purple Line (Downtown Los Angeles – Koreatown), which travel at 5-minute intervals during weekday peak hours. The Metro Red and Purple Lines also provide access to Union Station, with connections to the Metro Gold Line and the Metrolink Commuter Rail system.

The 1.9 mile Metro Regional Connector Project is currently under construction to connect Union Station and the 7th Street/Metro Center Station and will serve Little Tokyo, the Arts District, Civic Center, The Historic Core, Broadway, Grand Avenue, Bunker Hill, Flower Street and the Financial District. Additionally, the Regional Connector will provide direct connections between the Metro Gold Line and the Blue, Expo, Red and Purple Lines at 7th Street/Metro Center Station, eliminating the need for passenger transfers.

The Project Site is located approximately 0.27 miles east of Figueroa Street. The MyFig Project is currently being implemented on Figueroa Street and will add protected bike lanes, enhanced sidewalks, landscaping and pedestrian facilities, which along with the existing northbound bus lane will transform the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFig Project will also install a protected bike lane and similar enhancements along the north side of 11th Street from Broadway to Figueroa Street.

The Los Angeles Streetcar is a streetcar project planned for downtown Los Angeles, which will run on streets in a loop connecting the Civic Center, Broadway Corridor, Financial District and 7th Street. In the vicinity of the Project, it will run south on Broadway, west on 11th Street immediately adjacent to the Project, and north on Figueroa Street.

Bicycle facilities in the Project Area include bike lanes on Olive Street, Grand Avenue and Spring Street (3 blocks east of the Project). Additionally, there are bike lanes planned on Flower Street (3 blocks west of the Project) and Broadway (2 blocks east of the Project), according to City of Los Angeles' Mobility Plan 2035.

Metro Bike Share is a bicycle-sharing system with approximately 60 stations in and around downtown Los Angeles. Many stations are located at transit hubs, such as Union Station and

7th Street/Metro Center Station. Access to the system is provided 24 hours per day and payment can be made for an individual trip or on a monthly basis. The nearest stations to the Project Site are located at 11th Street & Hope Street, 12th Street & Hill Street and Olympic Boulevard & Grand Avenue, each being approximately a two-block walk from the Project Site.

2. Project Description

The Project Site is currently occupied by four commercial buildings totaling 35,651 sq. ft. and approximately 5,952 square feet paved parking area. The four buildings are one-story in height and are reflective of the older single story development in the Downtown area. Existing active land uses include 14,653 sq. ft. of manufacturing space and 5,171 sq. ft. of retail space. The remaining 15,827 sq. ft. is currently vacant.

The Proposed Project is a mixed-use development comprising 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground and mezzanine levels. The commercial space has been conservatively assessed as half high-turnover restaurant and half quality restaurant for trip generation purposes. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors. Approximately 100,652 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and public art display (Plaza). On-site open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies.

3. Site Access and Circulation

Vehicle access would be provided from one driveway on Olive Street, near the northern property line, and from two driveways on the alley between 11th Street and Olympic. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. An additional service driveway on the alley near the center of the Project Site would provide access to on-site loading and move-in/out services.

Pedestrian access to the Project Site would be provided from a 17-foot sidewalk along Olive Street. Access to the retail uses would be provided from a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street and the 17-foot sidewalk along Olive Street. Pedestrian access into the local neighborhood is facilitated by a midblock signalized pedestrian crosswalk on Olive Street between Olympic Boulevard and 11th Street and signalized crosswalks at all intersections in the vicinity of the Project. Additionally, there are midblock crosswalks on Grand Avenue south of 14th Street, on Hill Street (one block east of the Project) between 8th Street and 9th Street and between 11th Street and 12th Street, on Broadway (2 blocks east of the

Project) between 8th Street and 9th Street, between 9th Street and Olympic Boulevard, between Olympic Boulevard and 11th Street and between 11th Street and 12th Street.

The Project Site is located on the downtown bicycle network, comprising a bike lane on Grand Avenue, half a block west of the Project Site and by a bike lane running along Olive Street adjacent to the Project Site. The wider Project Area contains a high-level of bicycle access, with bike lanes as described earlier in Section 1.

4. Existing Transit Service

The Project Site is served by numerous transit lines within a one block walking distance on Olive Street, Grand Avenue, and Olympic Boulevard, including two Rapid Lines 770 and 728, eleven Metro lines 14, 28, 37, 70, 71, 76, 78, 79, 378, and 96, one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB 10), and two LADOT Commuter Express Lines CE 431 and CE 437. There are twelve bus services on Olive Street, twelve services on Grand Avenue, nine services on Hill Street, six on Broadway, four on 9th Street, four on Olympic Boulevard, two on 11th Street and one on Pico Boulevard.

The Project Site is located within 0.5 miles of the Pico Light Rail Station, which provides services to the Metro Blue and Expo Lines. The Project Site is also located within 0.7 miles of the 7th Street Metro Center Station, which provides services to Metro Red and Purple Lines. The Metro Blue Line travels between Long Beach Transit Mall and 7th Street Metro Center at 6-minute intervals during weekday peak hours, the Metro Expo Line travels between Santa Monica and Downtown Los Angeles at 12-minute intervals during weekday peak hours, and the Metro Red and Purple Lines travel between North Hollywood and Downtown Los Angeles at 5-minute intervals during weekday peak hours.

5. Project Trip Generation and Vehicle Miles Travelled (VMT)

Trip generation for the Proposed Project was estimated using ITE's 9th Edition Trip Generation Manual, as shown in Table 1. ITE trip rates for Apartments, High-Turnover Restaurant and Quality Restaurant were used for the land uses of the Proposed Project and ITE trip rates for Manufacturing and Specialty Retail were used for the existing uses. The trip generation estimates were adjusted for trip credits for existing active land uses to be removed and reductions for pass-by, transit, walk and internal capture. The Proposed Project is estimated to generate 4,817 net daily trips, 359 net trips in the AM Peak Hour, comprising 79 net inbound trips and 280 net outbound trips and 440 net trips in the PM Peak Hour, comprising 287 net inbound trips and 153 net outbound trips.

The Project type and location enjoy a number of advantages that will reduce the number of trips that will be generated. These include:

- Removal of Existing Uses from the Project Site.
- Internal Capture within Project land uses.
- Use of Transit and Walk/Bike.
- Pass-by trips.
- Transportation Demand Management (TDM) measures.

In order to demonstrate the efficacy of these trip reductions, trip generation was estimated for the Proposed Project without trip credits for the existing active land uses and without reductions for pass-by, transit, walk/bike and internal capture, as shown in Table 2. Trip generation was estimated at 6,637 daily trips, 478 trips in the AM peak hour and 601 trips in the PM peak hour.

Table 2 also shows the estimated vehicle miles travelled (VMT) without trip reductions. Average trip lengths for each land use were estimated using the California Emissions Estimator Model (CalEEMod) for the South Coast Air Basin (LA County except for the Antelope Valley, Orange County, and the urbanized portions of Riverside and San Bernardino Counties). CalEEMod specifies average trip lengths for the South Coast Air Basin by trip purpose (Home-Work, Home-Shop, Home-Other, Commercial-Customer, Commercial-Work and Commercial-Nonwork). For each land use, CalEEMod specifies the proportion of trips that are of each trip purpose, thus enabling the calculation of average trip lengths by land use. Trip lengths were calculated for the Home-Work, Home-Shop, Home-Other trip purposes for the residential units, and for the for the Commercial-Customer, Commercial-Work and Commercial-Nonwork trip purposes for the commercial uses. Table 2 shows the average trip length for each land use. As shown in Table 2, the average trip length from CalEEMod for the South Coast Air Basin is estimated at 10.6 miles for residential apartments, 8.8 miles for high-turnover restaurant and 9.1 miles for quality restaurant. These trip lengths were applied to the Project trips to develop the total vehicle miles traveled (VMT) of the Project.

As shown in Table 2, the Proposed Project prior to accounting for applicable reductions is estimated to generate 68,078 daily VMT, 4,937 VMT in the AM Peak Hour and 6,189 VMT in the PM Peak Hour.

6. Comparable Project

The Proposed Project's performance has been assessed in comparison to a Comparable Project, which represents a baseline case. The Comparable Project has the same land uses and quantities as the Proposed Project, but does not have the location-specific nor the Proposed Project design-specific benefits nor the infill nature of the Proposed Project that would lead to trip reductions.

For the purposes of analysis it is considered that pass-by trip reductions would be equally applicable to the Comparable Project and the Proposed Project, as these reductions are generally applied to all projects in the City of Los Angeles regardless of location, in accordance with LADOT's Transportation Impact Study Guidelines (December 2016). Trip reductions made for the removal of existing buildings are associated with the infill nature of the site of the Proposed Project and would therefore be applicable to the Proposed Project and not to the Comparable Project. Trip reductions made for the Project being located in a highly walkable and transit-friendly area are location-specific benefits and as such, would only be applicable to the Proposed Project. Trip reductions made for the internal capture of trips and trip reductions due to the Transportation Demand Management package are considered to be design-specific benefits of the Proposed Project and therefore would be applicable to the Proposed Project and not to the Comparable Project.

As noted above, reductions for pass-by trips should apply to both the Comparable Project and the Proposed Project. As shown in Table 3, there would be a pass-by reduction of 148 daily trips, 9 trips in the AM peak hour and 12 trips in the PM peak hour. These trip reductions result in reductions of 1,314 daily VMT, 79 VMT in the AM peak hour and 106 VMT in the PM peak hour.

7. Project Related Reductions to Trip Generation and VMT

The Project's infill nature, location, design and TDM program will reduce vehicle trips and VMT compared with the Comparable Project. The quantitative analysis of these reductions to vehicle trips and VMT follows.

Removal of Existing Uses from Project Site

The project site currently has four existing buildings with a total of 19,824 sq. ft. existing active uses, of which 14,653 sq. ft. is manufacturing space and 5,171 sq. ft. is retail space. These land uses would be removed from the site prior to construction of the Proposed Project.

As shown in Table 4, removal of the existing active land uses would eliminate the trips currently generated by those uses, and would result in a reduction of 231 daily trips, 9 trips in the AM peak hour and 20 trips in the PM peak hour. These trip reductions result in reductions of 2,356 daily VMT, 117 VMT in the AM peak hour and 222 VMT in the PM peak hour.

Internal Capture Reduction

The Proposed Project restaurant space would provide a convenient local destination for the residential element of the Proposed Project without having to drive to other locations. It was estimated that 15% of the trips to and from the restaurant space would come from the onsite residential element of the Proposed Project.

As shown in Table 5, there would be an internal capture reduction of 203 daily trips, 11 trips in the AM peak hour and 16 trips in the PM peak hour. These trip reductions result in reductions of 1,811 daily VMT, 97 VMT in the AM peak hour and 143 VMT in the PM peak hour.

Transit & Walk/Bike Reduction

The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Proposed Project. Therefore, it was estimated that vehicle trips would be reduced by 20% due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

As shown in Table 6, the use of transit and walk/bike would reduce vehicle trips by 1,238 daily trips, 90 trips in the AM peak hour and 113 trips in the PM peak hour. These trip reductions result in reductions of 12,751 daily VMT, 933 VMT in the AM peak hour and 1,168 VMT in the PM peak hour.

Transportation Demand Management (TDM) Reduction

The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:

- Promotion and support of carpools and rideshares, including parking and transit incentives.
- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.

- Unbundling of residential parking.

- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.

- Discounts for employees who utilize public transit to travel to the site.

- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
- Participate in the City's Bike Share Program by providing an area for bike share facilities.

The implementation of the TDM package would result in an estimated reduction of 10% of the vehicle trips to and from the residential element of the Proposed Project.

As shown in Table 7, the TDM program would result in a reduction of 426 daily residential trips, 33 trips in the AM peak hour and 40 trips in the PM peak hour. These trip reductions result in reductions of 4,516 daily VMT, 350 VMT in the AM peak hour and 424 VMT in the PM peak hour.

8. Total Proposed Project Trips and VMT

A summary of the total trips and VMT for the Proposed Project and comparison with the Comparable Project is shown in Table 8. It was estimated that the Proposed Project would generate 4,391 daily trips, resulting in 45,330 daily VMT. It was estimated that the Comparable Project would generate 6,489 daily trips, resulting in 66,764 daily VMT.

Table 9 shows a summary of absolute and proportional differences between the generated trips and VMT of the Proposed Project and the Comparable Project. It was estimated that the Proposed Project would generate 32% less daily trips than the Comparable Project, resulting in a reduction of 32% daily VMT compared with the Comparable Project. In the AM peak hour, it was estimated that the Proposed Project would generate 30% less trips than the Comparable Project, resulting in a reduction of 31% AM peak hour VMT compared with the Comparable Project. In the PM peak hour, it was estimated that the Proposed Project would generate 32%

less trips than the Comparable Project, resulting in a reduction of 32% PM peak hour VMT compared with the Comparable Project.

The substantial reductions in generated trips and VMT from the Comparable Project to the Proposed Project noted above are due to the location-specific benefits, the design-specific benefits and the infill nature of the Proposed Project with respect to the Comparable Project.

The analysis shows that the Proposed Project exceeds the threshold of 10% transportation efficiency that is required for the Environmental Leadership Development Project application.

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

Daily Trips

Land Use Assumptions		Source [1] & Code	Quantity	Units	Daily			
						Trip Rate		Total Trips
Existing Uses								
Manufacturing [2,3]		ITE 140	14,653	SF		3.82		-56
(Reduction for transit trips) -	15%							8
(Reduction for walk/bike trips) -	5%							2
Net Manufacturing								-46
Specialty Retail [2,3]		ITE 826	5,171	SF		44.32		-229
(Reduction for transit trips) -	15%							34
(Reduction for walk/bike trips) -	5%							10
Net Specialty Retail								-185
Total Existing								-231
Proposed Uses								
Apartment [2]		ITE 220	794	DU		6.65		5,280
(Reduction for transit trips) -	15%							-792
(Reduction for walk/bike trips) -	5%							-224
Net Apartments								4,264
High-Turnover Restaurant [2]		ITE 932	6,252	SF		127.15		795
(Reduction for internal trips) -	15%							-119
(Reduction for transit trips) -	15%							-101
(Reduction for walk/bike trips) -	5%							-29
(Reduction for pass-by trips) -	20%							-109
Net High-Turnover Restaurant								437
Quality Restaurant [2]		ITE 931	6,252	SF		89.95		562
(Reduction for internal trips) -	15%							-84
(Reduction for transit trips) -	15%							-72
(Reduction for walk/bike trips) -	5%							-20
(Reduction for pass-by trips) -	10%							-39
Net Quality Restaurant								347
Total Proposed								5,048
Total Net								4,817

AM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	AM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.57	0.16	0.73	-8	-3	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-7	-2	-9
Specialty Retail [2,3,4]		ITE 826	5,171	SF	0.00	0.00	0.00	0	0	0
(Reduction for transit trips) -	15%							0	0	0
(Reduction for walk/bike trips) -	5%							0	0	0
Net Specialty Retail								0	0	0
Total Existing								-7	-2	-9
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.10	0.41	0.51	79	326	405
(Reduction for transit trips) -	15%							-12	-49	-61
(Reduction for walk/bike trips) -	5%							-3	-14	-17
Net Apartments								64	263	327
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.95	4.86	10.81	37	31	68
(Reduction for internal trips) -	15%							-6	-4	-10
(Reduction for transit trips) -	15%							-5	-4	-9
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	18	38
Quality Restaurant [2,5]		ITE 932	6,252	SF	0.45	0.36	0.81	3	2	5
(Reduction for internal trips) -	15%							-1	0	-1
(Reduction for transit trips) -	15%							0	-1	-1
(Reduction for walk/bike trips) -	5%							0	0	0
(Reduction for pass-by trips) -	10%							0	0	0
Net Quality Restaurant								2	1	3
Total Proposed								86	282	368
Total Net								79	280	359

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

PM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	PM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.26	0.47	0.73	-4	-7	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-3	-6	-9
Specialty Retail [2,3]		ITE 826	5,171	SF	1.19	1.52	2.71	-6	-8	-14
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	1	1
Net Specialty Retail								-5	-6	-11
Total Existing								-8	-12	-20
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.40	0.22	0.62	318	174	492
(Reduction for transit trips) -	15%							-48	-26	-74
(Reduction for walk/bike trips) -	5%							-14	-7	-21
Net Apartments								256	141	397
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.91	3.94	9.86	37	25	62
(Reduction for internal trips) -	15%							-6	-3	-9
(Reduction for transit trips) -	15%							-5	-3	-8
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	14	34
Quality Restaurant [2]		ITE 932	6,252	SF	5.02	2.47	7.49	31	16	47
(Reduction for internal trips) -	15%							-5	-2	-7
(Reduction for transit trips) -	15%							-4	-2	-6
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	10%							-2	-1	-3
Net Quality Restaurant								19	10	29
Total Proposed								295	165	460
Total Net								287	153	440

Notes:

1. ITE Rates from Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington, DC, 2012, except otherwise noted
2. Trip rate reductions were applied per LADOT's Transportation Impact Study Guidelines, December 2016
3. Existing land use data from Crescent Heights and site observations on 9/5/2017.
4. Existing Specialty Retail is closed on weekday mornings, therefore no existing trip credit is claimed for the AM peak hour.
5. Directional Distribution for AM peak from High-Turnover Restaurant, as non published for Quality Restaurant.

Table 2. Proposed Project - Total Unadjusted Project Trips and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation Estimates (Without Trip Reductions)								
Apartments	794 DU	5,280	79	326	405	318	174	492
High-Turnover Restaurant	6,252 SF	795	37	31	68	37	25	62
Quality Restaurant	6,252 SF	562	3	2	5	31	16	47
Total Project Trips Before Reductions		6,637	119	359	478	386	215	601
Vehicle Miles Travelled (Without Trip Reductions)								
Apartments	10.6 Miles	55,968	837	3,456	4,293	3,371	1,844	5,215
High-Turnover Restaurant	8.8 Miles	6,996	326	273	598	326	220	546
Quality Restaurant	9.1 Miles	5,114	27	18	46	282	146	428
Gross Project VMT Before Reductions		68,078	1,190	3,747	4,937	3,979	2,210	6,189

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- DU = Dwelling Unit, SF = Square Feet.

Table 3. Comparable Project - Trips Generated with Pass-by Trip Reduction and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Pass-by Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	20%	109	5	4	9	5	4	9
Quality Restaurant	10%	39	0	0	0	2	1	3
Subtotal - Pass-by Trip Reduction		148	5	4	9	7	5	12
Total Project Trips with Pass-by Reduction		6,489	114	355	469	379	210	589
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	959	44	35	79	44	35	79
Quality Restaurant	9.1 Miles	355	0	0	0	18	9	27
Subtotal - Pass-by VMT Reduction		1,314	44	35	79	62	44	106
Comparable Project VMT		66,764	1,146	3,712	4,858	3,917	2,166	6,083

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Pass-by Trip Reductions based on estimates shown in Table 1.
- Comparable Project VMT calculated as the difference between the Gross Project VMT Before Reductions from Table 2 and the Pass-by VMT Reduction.

Table 4. Proposed Project - Existing Land Uses to be Removed - Trip Reduction and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trips								
Manufacturing	14,653 SF	46	7	2	9	3	6	9
Retail	5,171 SF	185	0	0	0	5	6	11
Existing Project Site Trips		231	7	2	9	8	12	20
Vehicle Miles Travelled								
Manufacturing	13.0 Miles	598	91	26	117	39	78	117
Retail	9.5 Miles	1,758	0	0	0	48	57	105
Existing Project Site VMT		2,356	91	26	117	87	135	222

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Existing Land Use Trip Reductions based on estimates shown in Table 1.

Table 5. Proposed Project - Internal Capture - Trip Reduction and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Internal Capture Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	15%	119	6	4	10	6	3	9
Quality Restaurant	15%	84	0	1	1	5	2	7
Trips Reduced by Internal Capture		203	6	5	11	11	5	16
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	1,047	53	35	88	53	26	79
Quality Restaurant	9.1 Miles	764	0	9	9	46	18	64
VMT Reduced by Internal Capture		1,811	53	44	97	99	44	143

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Internal Capture Trip Reductions based on estimates shown in Table 1.

Table 6. Proposed Project - Transit & Walk/Bike - Trip Reduction and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Transit & Walk Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	20%	1,016	15	63	78	62	33	95
High-Turnover Restaurant	20%	130	6	5	11	6	4	10
Quality Restaurant	20%	92	0	1	1	5	3	8
Trips Reduced by Transit & Walk		1,238	21	69	90	73	40	113
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	10,770	159	668	827	657	350	1,007
High-Turnover Restaurant	8.8 Miles	1,144	53	44	97	53	35	88
Quality Restaurant	9.1 Miles	837	0	9	9	46	27	73
VMT Reduced by Transit & Walk		12,751	212	721	933	756	412	1,168

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transit & Walk Trip reductions based on estimates shown in Table 1.

Table 7. Proposed Project - Transportation Demand Management - Trip Reduction an Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Transportation Demand Management Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	10%	426	6	27	33	26	14	40
High-Turnover Restaurant	0%	0	0	0	0	0	0	0
Quality Restaurant	0%	0	0	0	0	0	0	0
Trips Reduced by Transportation Demand Management		426	6	27	33	26	14	40
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	4,516	64	286	350	276	148	424
High-Turnover Restaurant	8.8 Miles	0	0	0	0	0	0	0
Quality Restaurant	9.1 Miles	0	0	0	0	0	0	0
VMT Reduced by Transportation Demand Management		4,516	64	286	350	276	148	424

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transportation Demand Management Trip Reductions based on net trip generation estimates for proposed land uses shown in Table 1, multiplied by the Transportation Demand Management Reduction %.

Table 8. Comparison of Proposed Project to Comparable Project
Trip Reductions and Conversion to Vehicle Miles Travelled

9/22/2017

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Existing Land Use Trip Reduction (From Table 4)	231	7	2	9	8	12	20
Internal Capture Trip Reduction (From Table 5)	203	7	4	11	11	5	16
Transit & Walk Trip Reduction (From Table 6)	1,238	21	69	90	73	40	113
TDM Program Trip Reduction (From Table 7)	426	6	27	33	26	14	40
Net Proposed Project Trips	4,391	73	253	326	261	139	400
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Existing Land Use VMT Reduction (From Table 4)	2,356	91	26	117	87	135	222
Internal Capture VMT Reduction (From Table 5)	1,811	53	44	97	99	44	143
Transit & Walk VMT Reduction (From Table 6)	12,751	212	721	933	756	412	1,168
TDM Program VMT Reduction (From Table 7)	4,516	64	286	350	276	148	424
Net Proposed Project VMT	45,330	726	2,635	3,361	2,699	1,427	4,126

Table 9. Comparison of Proposed Project to Comparable Project
Percentage Trip Reductions and Percentage Vehicle Miles Travelled Reductions

9/22/2017

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Proposed Project (From Table 8)	4,391	73	253	326	261	139	400
Trip Reduction from Comparable Project to Proposed Project	2,098	41	102	143	118	71	189
Percentage Trip Reduction from Comparable Project to Proposed Project	32%	36%	29%	30%	31%	34%	32%
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Proposed Project (From Table 8)	45,330	726	2,635	3,361	2,699	1,427	4,126
VMT Reduction from Comparable Project to Proposed Project	21,434	420	1,077	1,497	1,218	739	1,957
Percentage VMT Reduction from Comparable Project to Proposed Project	32%	37%	29%	31%	31%	34%	32%

Exhibit 5 1045 Olive Street, Fiscal Impact and Economic Benefit Analysis

1045 OLIVE



AN ECONOMIC AND FISCAL IMPACT ANALYSIS



Los Angeles County Economic Development Corporation
444 S. Flower Street, 37th Floor ◆ Los Angeles, CA 90071
(888) 4-LAEDC-1 ◆ www.LAEDC.org

This report was commissioned by 1045 Olive, LLC

The LAEDC Institute for Applied Economics provides objective economic and policy research for public agencies and private firms. The group focuses on economic impact studies, regional industry analyses, economic forecasts and issue studies, particularly in workforce development, transportation, infrastructure and environmental policy.

Every reasonable effort has been made to ensure that the data contained herein reflect the most accurate and timely information possible and they are believed to be reliable.

This report is provided solely for informational purposes and is not to be construed as providing advice, recommendations, endorsements, representations or warranties of any kind whatsoever.

EXECUTIVE SUMMARY

1045 Olive is a proposed mixed-use development located at the northwest corner of Olive Street and 11th Street in downtown Los Angeles. The existing single story commercial buildings will be replaced with a mixed-use high-rise building with over 750 thousand square feet of space.

The LAEDC Institute for Applied Economics (LAEDC) has quantified the total economic impact in Los Angeles County of the development of the Project and of its ongoing annual operations once completed and occupied. The findings are as follows:

One-Time Project Development Impacts

It is estimated that the Project development is anticipated to cost $454 million, net of land acquisition. The total economic impact of this development cost in Los Angeles County, including direct, indirect and induced impacts, is shown in Exhibit ES-1

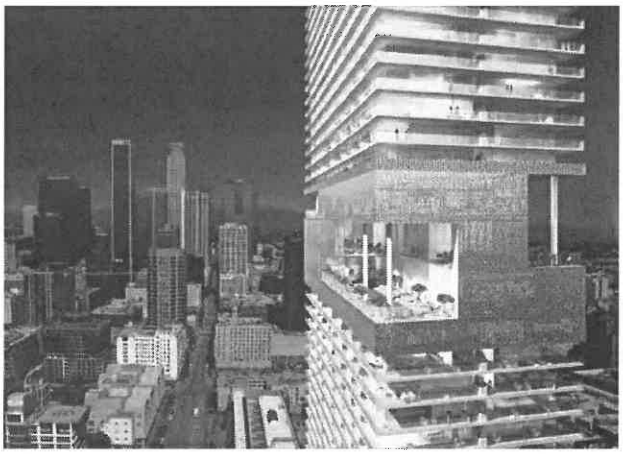
- 4,720 total jobs in Los Angeles County
- $327.4 million in labor income in Los Angeles County;
- $808.2 million in total output (business revenues) in Los Angeles County;
- $98.9 million in local, state and federal tax revenues

Exhibit ES-1

Economic and Fiscal Impact
Project Development

Total Economic Impact:		
Output ($ millions)		$808.2
Employment (jobs)		4,720
Direct	*2,460*	
Indirect and induced	*2,260*	
Labor earnings ($ millions)		$327.4
Total Fiscal Impact ($ millions)		
State and local tax revenues		$33.2
Federal tax revenues		65.7

Source: Estimates by LAEDC



Annual Impacts of Ongoing Operations

Once completed, 1045 Olive is expected to host a variety of activity, including residential living and commercial activity. The ongoing impact for Los Angeles County will be significant.

The total annual economic impact in Los Angeles County of all ongoing activity occurring in 1045 Olive, including direct, indirect and induced impacts, is shown in Exhibit ES-2.

- 550 permanent jobs in Los Angeles County;
- $20.5 million in annual labor income in Los Angeles County;
- $67.1 million in annual total output (business revenues) in Los Angeles;
- $14.2 million in local, state and federal tax revenues

Exhibit ES-2

Economic and Fiscal Impact
Ongoing Operations

Total Economic Impact:		
Output ($ millions)		$67.1
Employment (jobs)		550
Direct	*400*	
Indirect and induced	*150*	
Labor earnings ($ millions)		$20.5
Total Fiscal Impact ($ millions)		
State and local tax revenues		$8.6
Federal tax revenues		5.6

Source: Estimates by LAEDC

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1045 Olive

1045 Olive is envisioned to be a mixed-use high-rise building located at the northwest corner of Olive Street and 11th Street in downtown Los Angeles.

Once completed, the Project is planned to consist of 794 residential units and just over 12,500 square feet of commercial space. There will be over 103 thousand square feet of open space including a ground level public plaza with streetscaping, landscaping and public art display. Residents will have access to various open space and recreational facilities including atop the Podium on the 10th Floor Terrace and the rooftop with the Tower Roof Terrace.

The McKinsey Global Institute reports in *A Tool Kit to Close California's Housing Gap: 3.5 Million Homes by 2025* that there is a critical shortage of housing in California. The rental units that are planned to be built in 1045 Olive are anticipated to be instrumental in addressing the shortage and alleviating some of the pressures on the housing market in Los Angeles County. Moreover, employment opportunities provided in commercial space of 1045 Olive are expected to fulfill some of the anticipated employment needs of the growing populace in Los Angeles County. The unit mix provided by 1045 Olive include studios, one-bedrooms and two-bedrooms to address the housing needs of singles, small families, empty-nesters and larger families.

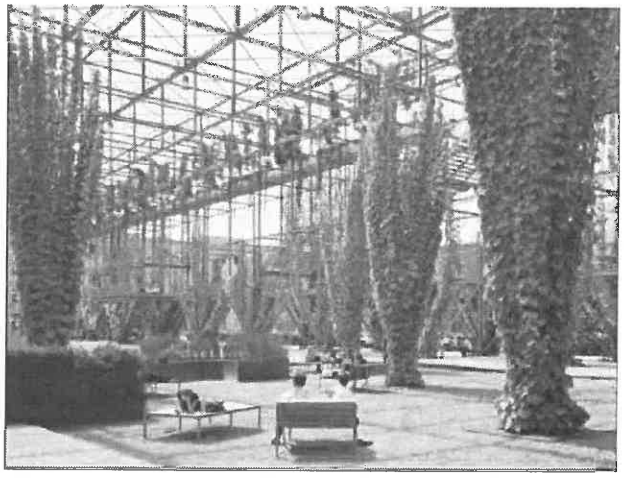
The project will also provide up to 891 parking spaces and 886 bicycle spaces on the premises.

Project Development

The development and construction of 1045 Olive will support substantial economic activity that will reverberate throughout Los Angeles County.

Methodology

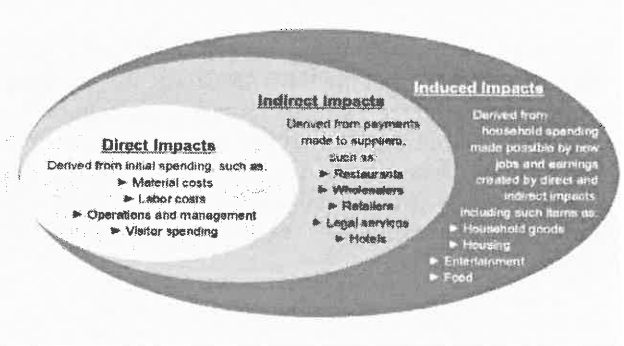
Economic impact analysis is used to estimate the overall economic activity, including spill-over and multiplier impacts, that occurs as a result of a particular development, business, event or geography. The economic activity related to the new construction and expected ongoing operations of 1045 Olive totals millions



of dollars of goods and services purchased from local vendors and the wages and benefits paid to local workers.

During the development and construction phase, millions of dollars will be spent on wages and benefits for construction employees. These workers, as well as employees of all suppliers, will spend a portion of their wages on household consumer goods such as groceries, rent, vehicle expenses, healthcare, and so on. Once the development is completed and occupied, commercial development activity and new residential households will spend millions of dollars annually in the course of their day-to-day activities. This recirculation of the original expenditures multiplies their impact through these indirect and induced effects.

A visual depiction of the different impacts is shown below.



The extent to which the initial expenditures multiply is estimated using economic models that depict the relationships between industries (such as the construction industry and its suppliers) and among economic agents (such as firms and their employees).

These models are built upon expenditure patterns that are reported to the U.S. Bureau of Labor Statistics, the U.S. Census Bureau and the Bureau of Economic Analysis of the U.S. Department of Commerce. Data is regionalized so that it reflects and incorporates local conditions such as prevailing wage rates, expenditure patterns, and resource availability costs.

The magnitude of the multiplying effect differs from one region to another depending on the extent to which the local region can fill the demand for all rounds of supplying materials, goods and services. For example, the automobile manufacturing industry has high multipliers in Detroit and Indiana since these regions have deep and wide supplier networks, while the same industry multiplier in Phoenix is quite small. In another example, the jobs multiplier for the construction industry is higher in Arkansas than in California because the same amount of spending will support fewer workers in Los Angeles than in Little Rock.

Multipliers can also differ from year to year as relative material and labor costs change, and as the production "formula" of industries changes. For example, the IT revolution significantly reduced the job multiplier of many industries (such as manufacturing, accounting, architecture and publishing) as computers replaced administrative and production workers.

Approach

The analysis here uses the development budget for 1045 Olive combined with the estimated revenues of operations once the development is occupied. Data was provided by the client and supplemented with regional and local data and analysis to provide revenue estimates.

Impacts are estimated using models developed with software and data from the IMPLAN Group, Inc. a robust input-output model which traces inter-industry transactions resulting from an increase in demand in a given region. This model estimates the indirect and induced impacts from construction as well as ongoing operations. The economic region of interest is Los Angeles County.

The total estimated economic impact includes *direct, indirect* and *induced* effects. *Direct activity* includes the materials purchased and the employees hired by the developer and its construction contractors. Included are operations staff such as management, human resources and maintenance, and construction workers such as laborers, electricians and other trades. *Indirect effects* include those expenditures which stem from purchases made by the contractors and their suppliers. *Induced effects* are those generated by the household spending of employees whose wages are sustained by both direct and indirect spending, such as groceries, rent, vehicles, expenses, healthcare, and so on.

As an example, for every $10 million spent on construction in Los Angeles County in 2017, a total of 100 jobs are supported. The table below shows the breakdown between direct, indirect and induced jobs:

Exhibit 1
Every $10M in Construction Spending

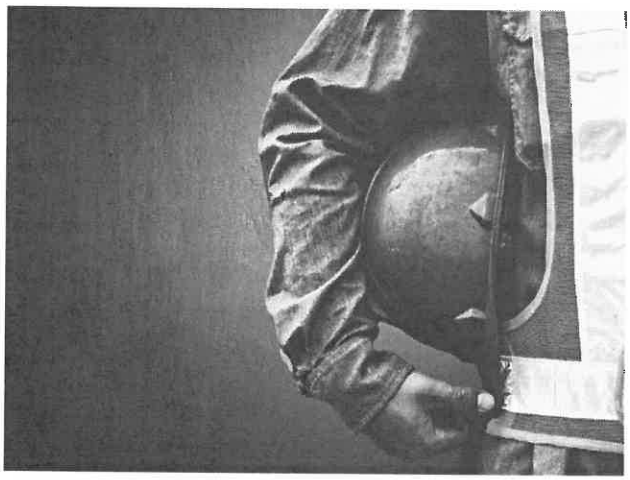
	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	-	-	-	-
21 Mining	-	-	-	-
22 Utilities	-	-	-	-
23 Construction	55	-	-	56
31-33 Manufacturing	-	1	-	1
42 Wholesale Trade	-	2	1	3
44-45 Retail trade	-	8	3	11
48-49 Transportation & Warehousing	-	2	1	2
51 Information	-	-	-	1
52 Finance & insurance	-	1	2	2
53 Real estate & rental	-	2	1	3
54 Professional- scientific & tech svcs	-	3	1	4
55 Management of companies	-	-	-	-
56 Administrative & waste services	-	2	1	3
61 Educational svcs	-	-	1	1
62 Health & social services	-	-	5	5
71 Arts- entertainment & recreation	-	-	1	1
72 Accomodation & food services	-	1	3	4
81 Other services	-	1	2	3
92 Government & non NAICs	-	-	-	-
Total	**55**	**21**	**24**	**100**

Source: Estimates by LAEDC

Of the 100 jobs supported by $10 million in construction, 55 are direct jobs. These are jobs at the construction companies, architecture and engineering firms, etc. associated with development of the project. An additional 21 jobs are indirect jobs. These are the jobs supported by the purchases made by the companies

associated with the construction, such as, building materials, wood, nails, etc. The direct and indirect jobs, together, support the induced jobs. These are the jobs supported by the spending of both the construction worker as well as the building material supplier.

The metrics used to define the value of the economic impact are employment, labor income, and the value of output.



Employment includes full-time, part-time, permanent and seasonal employees and the self-employed, and is measured on a job-count basis regardless of the number of hours worked. *Labor income* includes all income received by both payroll employees and the self-employed, including wages and benefits, such as health insurance and pension plan contributions. *Output* is the value of the goods and services produced. Unless noted otherwise, estimates for labor income and output are expressed in 2017 dollars.

The project's residential component will be occupied by new residents, and the commercial portion of the property will house retail and restaurant businesses. Given expected population growth over the development period, the undersupply of new housing in the area, and the lack of existing residential uses on-site, it is reasonable to assume that the addition of households represents new activity. The economic and fiscal impact results should therefore be interpreted as those that are *attributable* to the new development rather than assuming the new development will *generate* such net new activities.

Construction Budget

As is standard for estimating the economic impact attributable to new developments, transfers to other economic agents are excluded, including land purchases, water acquisition rights, environmental rights, and subsidies given by the developer as they do not generate *new* economic activity.

Thus, development costs, less transfers, is estimated at $454 million and was provided by the developer.

Exhibit 2
Direct Development Costs

	$ millions	% of Total
Design	$9.0	2.0%
TFAR/Public Benefits	$10.0	2.2%
Permit Fees	$20.0	4.4%
Other soft costs	$65.0	14.3%
Hard costs	$350.0	77.1%
Total Direct Development Costs	**$454.0**	**100.0%**

Source: Developer; Estimates by LAEDC

Ongoing Activity

The project will have significant recurring impact on the Los Angeles County economy once construction is completed and the residential and commercial space becomes occupied. Revenues related to 1045 Olive will likely be derived from both new households and new businesses, including the revenues earned by onsite retail stores and restaurants. New resident households are anticipated to make purchases at both on-site and off-site businesses, adding even more economic activity to the county.

Operational revenues in 1045 Olive is a combination of residential rent revenues, property management revenues and revenues generated by commercial activities

Residential Rent Revenue

Residential rent revenue is the total amount of rent paid annually by resident tenants who will occupy the new units. Occupancy rates are based upon the most recently available vacancy rates from the *American Community*



Survey from the U.S. Census Bureau. The number of units, unit types and projected rental rates were provided by the developer. Occupancy rates are based upon vacancy rates for Los Angeles, CA from the *American Community Survey*. The vacancy rate in this report for rental homes is 2.9 percent.

The aggregate net revenues from rental residences is shown in Exhibit 3.

Exhibit 3
Estimated Rent Revenues

	Number of Units	Total Rent ($ millions)
Studio	152	$2.4
One bedroom	362	$8.7
Two bedrooms	240	$9.1
Three bedrooms	40	$2.3
Total Estimated Rent	**794**	**$22.5**

Estimates by LAEDC; Adjusted for occupancy

Revenues Generated by Commercial Activities

Revenue attributable to proposed commercial activity from retail and restaurant space was derived using employment density estimates. It is assumed that the commercial will be a combination of retail and food service places. A portion of the spending at retail stores and restaurants at 1045 Olive are expected to be from new households and their expenditures, we discount a portion of these revenues to avoid double counting the impact of commercial activities. 90 percent of retail and restaurant revenue in 1045 Olive are considered. This means that an estimated 10 percent of the revenues generated by commercial activities on-site are assumed to be from the new resident spending which is accounted for elsewhere. The percentage of spending by new residents on-site may vary.

Along with the retail and restaurant revenues generated on the premises, it is estimated by the developer that there will be approximately 60 property management staff on the premises who will also generate economic activity.

Exhibit 3
Estimated Commercial Revenues

	$1000s
Retail	$2.6
Restaurant	8.7
Property management	41.1
Total Commercial Revenues	**$52.3**

Sources: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics; Estimates by LAEDC

These estimates do not include any revenues generated by the parking spaces at 1045 Olive. As such, the revenues generated by commercial activities are likely to be *underestimated.*

New Resident Spending

Along with the new ongoing commercial activity, an additional impact on the local economy will derive from the addition of the new resident households (and their spending) to the neighborhood. To quantify this impact, the annual income and local spending patterns for each new household is estimated.

Using expected rents, income levels of future tenants are derived by applying the percentage of income typically dedicated to housing costs. According to the U.S. Census Bureau's *American Community Survey* report on housing characteristics, the median household in Los Angeles that rents its primary residence pays at least 36.1 percent of its before-tax income on housing costs. The overall estimated annual income of households will reach $62.3 million.

To quantify the impact from new households, local spending patterns for each new household is estimated. The *Consumer Expenditure Survey* produced by the Bureau of Labor Statistics of the U.S. Department of Commerce provides the estimates for the Los Angeles metropolitan area for 2016. This survey disaggregates spending for various categories, including housing, transportation, food, and health care. Not all categories of

spending are likely to occur in the local area. Expenditures on, for example, insurance payments and utility costs are not always purchased in the local area. Estimated rents are tallied in a previous section of this analysis.

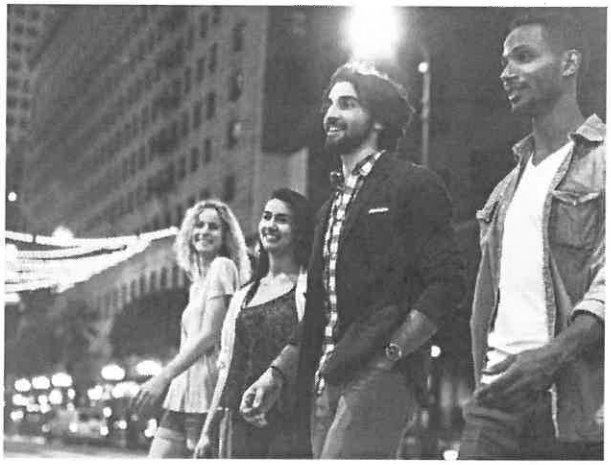


Exhibit 4

Total Local Spending by New Resident Households

	Overall % of Annual Income	Total Estimated Local Expenditures ($ millions)
Food	15.7%	$ 9.3
Utilities	1.7	1.1
Household operations, furnishings, supplies	6.7	4.1
Apparel	3.0	1.9
Vehicle purchases (net outlay)	7.8	4.8
Gasoline and other vehicle expenses	9.1	5.9
Public and other transportation	1.0	0.6
Medical services and supplies	2.6	1.6
Entertainment	5.1	3.2
Personal care products and services	1.2	0.7
Education and reading	1.9	1.1
Miscellaneous	2.3	1.4
Total New Household Expenditures	**58.1%**	**$35.7**

Estimates by LAEDC

Economic Impact of Construction

- The total economic impact attributable to construction spending:
  - $802.2 million in total output in L.A. County
  - 4,720 total jobs in L.A. County $547.2 million in labor income in L.A. County
  - $98.9 million in federal, state, and local taxes

Exhibit 5

Economic and Fiscal Impact
Project Development

Total Economic Impact:		
Output ($ millions)		$808.2
Employment (jobs)		4,720
Direct	*2,460*	
Indirect and induced	*2,260*	
Labor earnings ($ millions)		$327.4
Total Fiscal Impact ($ millions)		
State and local tax revenues		$33.2
Federal tax revenues		65.7

Source: Estimates by LAEDC

Exhibit 6
Detailed Fiscal Impact of Project Development
One-Time

By Type of Tax ($ millions):	**LA County**
Personal income taxes	$34.5
Social insurance	34.5
Sales and excise taxes	11.4
Property taxes	8.2
Corporate income taxes	5.4
Other taxes and fees	4.9
Total	**$98.9**
By Type of Government ($ millions):	
Federal	$65.7
State	20.8
County	
Property taxes	*6.8*
Sales taxes	*1.9*
Total County taxes	8.6
Cities	
Property taxes	*1.5*
Sales taxes	*0.8*
Other fees and fines	*1.5*
Total Cities taxes	3.8
Total	**$98.9**

Source: Estimates by LAEDC; May not sum due to rounding



Exhibit 7
One-time Economic Impacts by Industry Sector

	Jobs	**Labor Income ($ millions)**	**Output ($ millions)**
Agriculture	0	$0.0	$0.0
Mining	5	0.9	2.4
Utilities	2	0.3	1.7
Construction	1,969	138.6	357.2
Manufacturing	39	3.3	34.2
Wholesale trade	101	7.9	24.0
Retail trade	446	17.0	41.6
Transportation/Warehousing	95	6.2	15.4
Information	35	4.6	19.6
Finance and insurance	134	10.4	26.8
Real estate and rental	141	5.0	53.9
Prof/Sci/Technical	670	72.1	111.7
Management of companies	20	2.4	5.0
Administrative/Waste	218	8.3	14.7
Educational services	54	2.8	4.6
Health and social services	272	16.1	27.5
Arts/Entertainment/Recreation	50	1.8	4.1
Accommodation/Food services	213	6.7	15.3
Other services	157	7.5	13.1
Government	102	15.5	35.5
Total	**4,720**	**$327.4**	**$808.2**

Source: Estimates by LAEDC; May not sum due to rounding

Economic Impact of Ongoing Activity

- The total economic impact attributed to the ongoing economic activity:
  - $67.1 million in annual total output in L.A. County
  - 550 permanent jobs in L.A. County
  - $20.5 million in annual labor income in L.A. County
  - $14.2 million in annual federal, state, and local taxes

Exhibit 8

Economic and Fiscal Impact
Project Development

Total Economic Impact:		
Output ($ millions)		$67.1
Employment (jobs)		550
Direct	*400*	
Indirect and induced	*150*	
Labor earnings ($ millions)		$20.5
Total Fiscal Impact ($ millions)		
State and local tax revenues		$8.6
Federal tax revenues		5.6

Source: Estimates by LAEDC

Exhibit 9
Detailed Fiscal Impact of Project Development
One-Time

By Type of Tax ($ millions):	**LA County**
Personal income taxes	$2.2
Social insurance	2.1
Sales and excise taxes	1.9
Property taxes	1.3
Corporate income taxes	1.9
Other taxes and fees	0.6
Incremental Property Tax	4.2
Total	**$14.2**
By Type of Government ($ millions):	
Federal	$5.6
State	2.4
County	
Property taxes	*1.1*
Incremental Property Taxes	*3.4*
Sales taxes	*0.3*
Total County taxes	4.8
Cities	
Property taxes	*0.2*
Incremental Property Taxes	*0.8*
Sales taxes	*0.1*
Other fees and fines	*0.2*
Total Cities taxes	1.4
Total	**$14.2**

Source: Estimates by LAEDC; May not sum due to rounding



Exhibit 10
Annual Economic Impacts by Industry Sector

	Jobs	**Labor Income** ($ millions)	**Output** ($ millions)
Agriculture	0	$0.0	$0.0
Mining	0	0.0	0.1
Utilities	1	0.2	1.2
Construction	4	0.3	0.8
Information	3	0.4	1.8
Manufacturing	2	0.1	1.1
Wholesale trade	3	0.2	0.7
Retail trade	74	3.1	6.6
Transportation/Warehousing	5	0.3	0.8
Finance and insurance	10	0.4	1.8
Real estate and rental	126	2.4	27.2
Prof/Sci/Technical	9	0.8	1.6
Management of companies	2	0.2	0.5
Administrative/Waste	89	2.9	5.95
Educational services	11	0.5	0.9
Health and social services	24	1.3	2.6
Arts/entertainment/Recreation	30	1.0	2.1
Accommodation/Food services	59	1.7	3.9
Other services	100	3.8	6.5
Government	2	0.3	0.8
Total	**550**	**$20.5**	**$67.1**

Source: Estimates by LAEDC; May not sum due to rounding

Property Tax Revenues

1045 Olive is estimated to trigger an annual increase in property tax revenues. The increase in property tax revenues attributable to 1045 Olive development is based on the construction of each property and excludes exemptions (except for the institutional exemption), exclusions, and tax relief recipients.



The cost of construction was used to calculate the expected property tax revenues derived from apartments and commercial properties.

As property tax rates are also expected to grow once new development is put in place, we assumed a tax rate of 1.193 percent, which is in line with the current tax rate area.

Based on these assumptions, 1045 Olive is projected to generate $4,175,595 in property taxes annually.

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Los Angeles County Economic Development Corporation
444 S. Flower Street, 37th Floor
Los Angeles, CA 90071

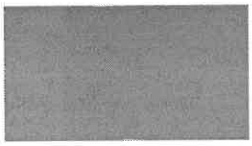
Exhibit 6 Greenhouse Gas Emissions Methodology and Documentation

GREENHOUSE GAS EMISSIONS METHODOLOGY AND DOCUMENTATION FOR THE 1045 OLIVE STREET PROJECT

Application for CEQA Streamlining Under the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.)

Prepared for
1045 Olive LLC

December 2017



ESA

GREENHOUSE GAS EMISSIONS METHODOLOGY AND DOCUMENTATION FOR THE 1045 OLIVE STREET PROJECT

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SECTION 1
Executive Summary

ESA has been retained to conduct a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project ("the Project") and to demonstrate that the Project meets the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.), also referred to as Assembly Bill (AB) 900. In September 2011, the Governor signed the Act, which required the Governor to establish procedures for applying for streamlined environmental review under the California Environmental Quality Act (CEQA) for projects that meet certain requirements. In 2016, Senate Bill (SB) 734 was signed, which extends the authority of the Governor to certify a project to January 1, 2018 and provides that the certification expires and is no longer valid if the lead agency fails to approve a certified project before January 1, 2019. In October 2017, AB 246 was signed, which further extends the authority of the Governor to certify a project to January 1, 2020 and provides that the certification expires and is no longer valid if the lead agency fails to approve a certified project before January 1, 2021. The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c).

The Project is located at 1045 S. Olive Street in Downtown Los Angeles, California. The approximately 0.96-acre site occupies a parcel on the southeast corner of the block bounded by 11th Street to the southwest and S. Olive Street to the southeast ("the Project Site"). The property currently contains four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. The Project would demolish and remove the existing uses from the site.

The proposed mix of uses would be developed within one building with a podium structure. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[1] The mixed-use high-rise building will contain a mix of residential and commercial uses. The Project would include 739,273 square feet of residential uses (zoning area) with 794 residential units, and 12,504 square feet of commercial uses accessible at the ground level. Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements and is proposed to be located within a parking structure with 6 subterranean levels and 8 partial levels above grade (as certain above grade levels will contain

[1] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

residential units and other active uses along the 11th and Olive Street frontages) with a total of 891 spaces (878 residential and 13 commercial). Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 886 bicycle spaces provided within the parking garage on ground level, mezzanine and one level below grade.

Under the Baseline Condition, which is defined as the year 2017 existing site operating conditions, the site generates approximately 603 metric tons of carbon dioxide equivalents ($MTCO_2e$) per year. This excludes any one-time construction GHG emissions that were generated when the existing uses and related infrastructure were originally built. Construction of the Project would generate one-time GHG emissions of approximately 1,121 $MTCO_2e$, during the first year, 1,748 $MTCO_2e$ during the second year, 2,795 $MTCO_2e$ during the third year and 1,573 $MTCO_2e$ during the 4th year. At Project buildout, emissions of approximately 9,968 $MTCO_2e$ would be generated during the first full year of operation. Compared to the Baseline Condition, the Project's operational GHG emissions represent a net increase in GHG emissions from the site of approximately 5,563 $MTCO_2e$ during the first full year of operation. The net Project operational GHG emissions would decline in future years primarily as a result of vehicle fleet turnover and as utilities provide a greater percentage of electricity from renewable sources. Future year emissions would decline as a greater percentage of motor vehicles meet more stringent emissions standards, including the Pavley Phase I and Phase II emissions standards,[2] and the a greater percentage of electricity is provided by renewable sources in accordance with the Renewables Portfolio Standard, which requires 50 percent renewable electricity by 2030.[3] The Project would obtain GHG offsets that would result in the Project to having no net increase in GHG emissions. As a result, the Project would generate decreased GHG emissions in future years and would require decreased offsets to achieve no net increase in GHG emissions.

Based on this assessment, the Project would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). Therefore, the Project would meet the GHG emissions requirements for streamlined environmental review under CEQA.

2 Assembly Bill 1493 (Pavley Regulations) reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.

3 On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 was signed into law on October 7, 2015.

SECTION 2
Introduction

2.1 Purpose

ESA has been retained to conduct a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project ("the Project") and to demonstrate that the Project meets the requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.). This assessment describes the methodology used to estimate the GHG emissions from baseline and Project conditions, provides an estimate of the net change in GHG emissions for the Project as compared to baseline conditions, and describes the methodology used to quantify GHG emission reductions from Project design features and mitigation measures. The following baseline and Project-related emission sources have been evaluated:

- Construction Activities – Fossil fueled on- and off-road vehicles and equipment needed for demolition, mass and fine grading, building construction, paving, and architectural coating;
- Direct Emission Sources – Consumption of natural gas on-site for cooking, space heating and water heating, combustion of fossil fuels for lawn care and maintenance activities, and motor vehicles including employee transportation; and
- Indirect Emission Sources – Off-site electricity generation, wastewater treatment and water conveyance, and solid waste disposal.

2.2 Project Description, Site Location, Existing Uses

1045 Olive, LLC (Applicant) proposes a new mixed-use development on an approximately 0.96-acre site located at 1045 S. Olive Street on the northwest corner of Olive Street and 11th Street ("the Project Site"). Four existing single story commercial buildings would be removed and replaced with a new 751,777 square foot (net) mixed-use high-rise building. The maximum floor-area ratio (FAR) for the Transit Area Mixed Use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors, up to 810 feet in height.[4] The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. The residential units would be mostly located within the residential tower; however, approximately 40 units, would be located along the top five levels of the Podium facing

[4] The height to the top of the residential development, i.e. to the Tower Roof Terrace, is 770 feet. The 810 feet is the height to the top of the rooftop screening.

Olive Street and 11th Street. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art display (Plaza). Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies. At the pedestrian level, the Project would provide a 17-foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing GHG emissions, this assessment conservatively assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.[5]

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover at the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

The Project Site is located in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project Site is currently developed with four commercial buildings totaling 35,651 square feet and an approximately 5,952 square foot paved parking and hardscape area for a total of 41,603 square feet. The size of the Project Site will be reduced during Project implementation to increase the width of the alley and adjacent sidewalks to meet current standards. The post dedication Site would be 37,172 square feet. Uses within the block that lie adjacent to the Project

[5] Calculations included in the analysis of environmental impacts for this Project conservatively assume that all of the commercial space would be used for restaurant uses. This provides for conservative analyses as restaurant uses generate greater impacts than retail uses. For example, restaurant uses generate greater levels of traffic, consumption of resources such as energy and water consumption, and associated GHG emissions.

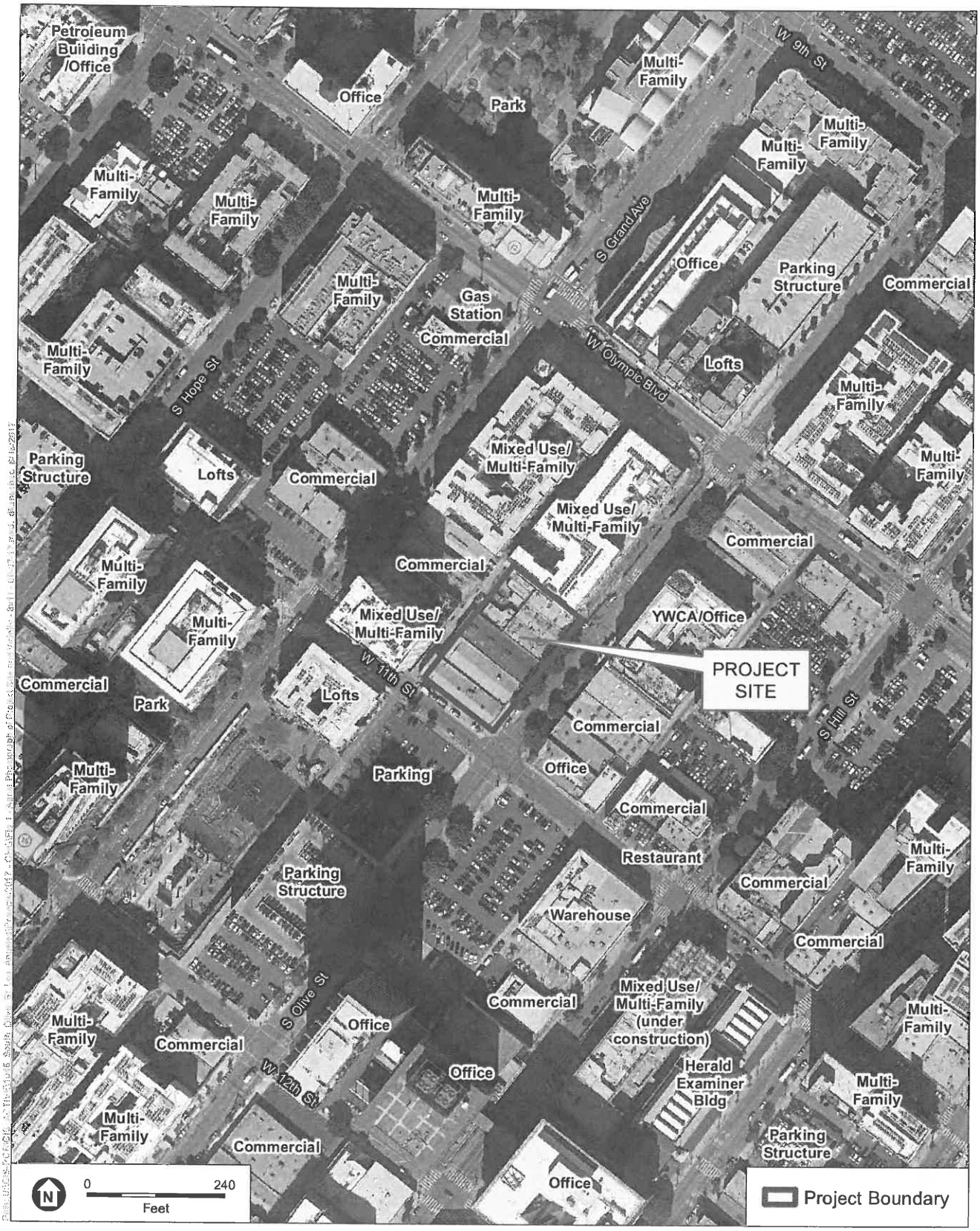
include a 7-story mixed-use development to the north, 7-story mixed-use development to the northwest, and a two story commercial building and 25-story mixed-use high-rise building to the west. Adjacent development across Olive Street to the east includes single story commercial uses; and across 11th Street to the south includes a surface parking. Surrounding development includes a large array of newer mixed use development, and older commercial, office, residential and warehouse uses.

The Project vicinity is highly urbanized and generally built-out. The South Park community of Downtown Los Angeles is one of nine-districts in the Central City Community Plan area, and is representative of the Downtown Center with its concentration of government-related uses, high- and mid-rise office buildings, residential buildings, hotels, retail uses, museums, and cultural districts. The South Park area includes a mix of residential, medical, commercial, and retail uses; with a substantial concentration of housing located next to and over support services, such as retail and commercial developments that provide employment opportunities for area residents.

The Project Site is served by a network of regional transportation facilities that provide access to the greater metropolitan area. It is located less than 0.5 miles from the Metro Blue Line and Expo Line station at Pico Boulevard. The Project is located adjacent to multiple bus and shuttle lines within a ¼-mile walking distance, including multiple existing Metro bus service lines along Olive Street and Grand Avenue (14, 37, 70, 71, 76, 78, 79, 96, 378, and 770), the Los Angeles Department of Transportation (LADOT) Downtown Area Short Hop (DASH) Route D (Union Station, South Park) on Hill Street, and LADOT Commuter Express lines on (431 and 437) on Olive Street and Grand Avenue. The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

Construction of the Project would be completed over an approximately 3.5-year period. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

The Project Site and surrounding uses are shown in **Figure 1**. The site plan for the Project is provide in **Figure 2**.



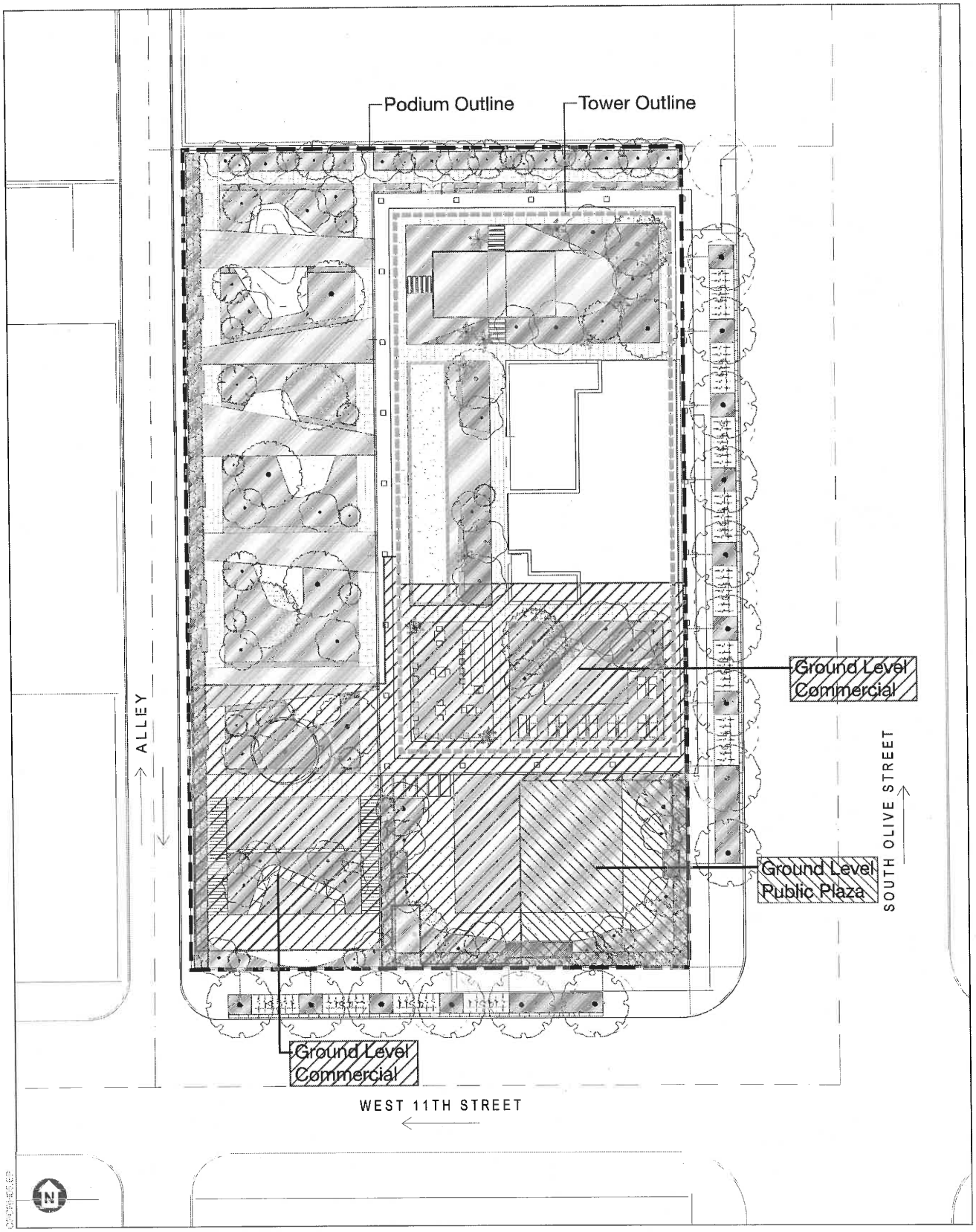
SOURCE: Google Earth, 2016

1045 Olive Street

Figure 1

Aerial Photograph with Surrounding Land Uses

ESA



SOURCE: ODA New York, 2017; ESA, 2017

1045 Olive Street

Figure 2

Proposed Site Plan

ESA

2.3 Jobs and Economic Improvement Through Environmental Leadership Act

In September 2011, the Governor signed the Act, which required the Governor to establish procedures for applying for streamlined environmental review under the California Environmental Quality Act (CEQA) for projects that meet certain requirements. The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). For purposes of California Public Resources Code Section 21183(c) the following process applies:

a. The applicant shall submit electronically to AB900ARBsubmittals@arb.ca.gov a proposed methodology for quantifying the project's net additional greenhouse gas emissions. The Air Resources Board will review and comment on the methodology, at its discretion, within 30 days of submission.

b. At the same time, the applicant shall submit to AB900ARBsubmittals@arb.ca.gov documentation that the project does not result in any net additional greenhouse gas emissions. The documentation must at least quantify:

   (1) Both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and

   (2) The net emissions of the project after accounting for any mitigation measures that will be monitored and enforced consistent with Public Resources Code section 21183(d).

c. Within 60 days of receiving the documentation in 6.b. above, the Board will determine whether the condition specified in Public Resources section 21183(c) has been met or, if more time is needed, notify the applicant of the expected completion date.

d. The Board will determine and report to the Governor in writing that a project does not result in any net additional emissions of greenhouse gases if the project demonstrates through a combination of project design features, compliance with (or exceeding minimum requirements of) existing regulations, and mitigation that it would result in zero additional greenhouse gas emissions.

SECTION 3
Greenhouse Gas Emissions

3.1 Global Climate Change and Greenhouse Gases

The natural process through which heat is retained in the troposphere[6] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a three-fold process as follows: (1) short wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation re-emitted by the Earth; and (3) GHGs in the atmosphere absorbing or trapping the long-wave radiation and re-emitting it back towards the Earth and into space. This third process is the focus of global climate change actions.

The most commonly emitted GHG from anthropogenic (i.e., human) activities is carbon dioxide (CO_2). Not all GHGs possess the same ability to induce climate change; as a result, GHG contributions are commonly quantified in the units of equivalent mass of carbon dioxide (CO_2e). Mass emissions are calculated by converting pollutant-specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value.[7] These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 are currently in use by the State of California for official GHG emission inventory purposes. By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons of CO_2e ($MTCO_2e$) per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The CO_2e values are calculated for construction years as well as existing and Project build-out conditions in order to generate a net change in GHG emissions for construction and operation. Compounds that are regulated as GHGs are discussed below.

- Carbon Dioxide (CO2): CO2 is the most abundant GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO2 is the reference gas (GWP of 1) for determining the GWPs of other GHGs.
- Methane (CH4): CH4 is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and

6 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

7 GWPs and associated CO2e values were developed by the Intergovernmental Panel on Climate Change (IPCC). Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). The IPCC updated the GWP values based on the latest science in its Fourth Assessment Report (AR4). The California Air Resources Board (CARB) has begun reporting GHG emission inventories for California, starting with the 2012 inventory, using the GWP values from the IPCC AR4.

leaks in natural gas pipelines. The GWP of CH4 is 21 in the IPCC SAR and 25 in the IPCC AR4.

- Nitrous Oxide (N2O): N2O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N2O is 310 in the IPCC SAR and 298 in the IPCC AR4.
- Hydrofluorocarbons (HFCs): HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs ranges from 140 for HFC-152a to 11,700 for HFC-23 in the IPCC SAR and 124 to 14,800 in the IPCC AR4.
- Perfluorocarbons (PFCs): PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. The GWPs of PFCs range from 6,500 to 9,200 in the IPCC SAR and 7,390 to 17,700 in the IPCC AR4.
- Sulfur Hexafluoride (SF6): SF6 is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF6 has a GWP of 23,900 in the IPCC SAR and 22,800 in the IPCC AR4.

The Climate Registry (TCR) has prepared the General Reporting Protocol for calculating and reporting GHG emissions from a number of general and industry-specific activities.[8] No specific protocols are available for land use development projects; however, the General Reporting Protocol has been adapted to address the land use development GHG emissions in this assessment. The information provided in this assessment is generally consistent with the General Reporting Protocol minimum reporting requirements. The General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include:

- Scope 1: Direct GHG emissions from human activity (e.g., stationary combustion of fuels, mobile combustion of fuels in transportation).
- Scope 2: Indirect GHG emissions associated with activities of the reporting entity but occur at sources controlled by another entity (e.g., purchased electricity or purchased steam).
- Scope 3: Indirect emissions associated with other emissions sources, such as employee commute and business travel and waste disposal.

According to the California Air Resources Board (CARB), the consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility: "As facilities consider changes that would affect their emissions – addition of a cogeneration unit to boost overall efficiency even as it increases direct emissions, for example – the relative impact on total (direct plus indirect) emissions by the facility should be monitored. Annually reported indirect energy usage also aids the conservation awareness of the facility and provides information" to

8 The Climate Registry, General Reporting Protocol, Version 2.1, (2016).

CARB to be considered for future strategies by the industrial sector.[9] Additionally, the Office of Planning and Research directs lead agencies to "make a good-faith effort, based on available information, to calculate, model, or estimate…GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[10] Therefore, direct and indirect emissions are considered in this assessment.

3.2 Baseline Operational Emissions

3.2.1 Description of Baseline Condition

The Project Site encompasses four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. Existing active land uses include 14,653 square feet of manufacturing space and 5,171 square feet of retail space. The remaining 15,827 square feet is currently vacant and not included in the analysis. For the purposes of estimating emissions within CalEEMod, the existing active uses were modeled as retail (strip mall) and manufacturing uses. The buildings were originally constructed between about the 1910s to the 1950s. The Project would demolish and remove the existing structures and associated infrastructure from the Project Site and the existing uses would be vacated prior to construction and would cease to operate. Therefore, the GHG emissions from the existing site uses would not occur contemporaneously with either Project construction emissions or Project operational emissions. The square footage for these existing land uses are provided in **Table 1**.

TABLE 1
BASELINE CONDITION FLOOR AREA

Land Use	Modeled CalEEMod Land Use	Square Feet (sqft)
Retail	Strip Mall	5,171
Manufacturing	Unrefrigerated Waterhouse-No Rail	14,653
Parking Lot/Hardscape Areas	Parking Lot	5,952

SOURCE: 1045 Olive, LLC 2017.

3.2.2 GHG Emission Sources and Calculation Methodology

Construction

The Project Site is currently built-out. Construction of the buildings and associated parking areas and infrastructure resulted in one-time GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from heavy-duty construction equipment, haul trucks, and worker vehicles. However, sufficient detail is not available with respect to the construction schedule, equipment usage, and number of haul trips to provide a quantitative construction GHG emissions assessment for the

9 California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (AB 32), (2007).

10 Office of Planning and Research, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review, page 5, (2008).

Baseline Condition. Therefore, construction-related GHG emissions are not included for the Baseline Condition. This is a conservative approach since, by excluding the Baseline Condition construction-related GHG emissions, the Project would need to provide slightly greater GHG reductions in order to meet the requirements of AB 900 of no net additional GHG emissions.

Operational Energy – Electricity

The generation of electricity in California is achieved through the combustion of fossil fuels, primarily natural gas, using steam boilers, internal combustion engines, and combustion turbines. A portion of the electricity in California is imported from outside the state and is derived from the combustion of coal and other non-gaseous fossil fuels. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. These emissions occur due to the electrical demand of the existing land uses that currently operate on the Project Site. The electricity generation occurs off-site; therefore, electricity use results in GHG emissions that are considered to be indirect.

Emissions of GHGs associated with the Baseline Condition energy demand are based on the size of the retail, manufacturing, and parking/hardscape land uses, the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions in units of $MTCO_2e$ are generally calculated as follows:

Electricity:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_E \times EF_E \times GWP)_i \right) \div 2204.62 \quad \textbf{[Equation 1]}$$

Where:
- Units = Number of land use units (same land use type) [dwelling unit (DU) or 1000 sqft]
- D_E = Electrical demand factor [megawatt-hour (MWh)/DU or 1000 sqft/year]
- EF_E = GHG emission factor [pounds per megawatt-hour (MWh)]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 2204.62 = Conversion factor [pounds/MT]
- i = Summation index

Electrical demand is based on data from the California Energy Commission (CEC) *California Commercial End Use Survey* (CEUS), which lists energy demand by building type,[11] as incorporated into the California Emissions Estimator Model (CalEEMod).[12] The data from the CEUS is from 2002. Since 1978, the CEC has established building energy efficiency standards, which are updated periodically. CalEEMod (version 2016.3.2) incorporates correction factors to account for the 2016 Title 24 Building Energy Efficiency Standards. The existing buildings on the Project Site were built in the 1910s to the 1950s. Thus, the building electricity usage rates are

11 California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017

12 See: http://www.caleemod.com.

adjusted within CalEEMod using the "historical data" option to use the prior 2005 Title 24 Building Energy Efficiency Standards.[13] This is considered a conservative adjustment because the existing buildings were built prior to implementation of the 2005 Standards and thus would have been built to a less stringent energy standard and data is not available within CalEEMod to adjust usage factors prior to the 2005 Standards. Parking lot and hardscape areas result in electricity usage due to lighting needs and were included as sources.

The Los Angeles Department of Water and Power (LADWP) provides electric service to the Project Site. Emission factors for GHGs due to electrical generation to serve the electrical demands of the Baseline Condition were obtained from the LADWP 2016 Draft Power Integrated Resource Plan, which provides a CO_2 intensity of 1,132 pounds of CO_2 per MWh in 2015 (the most recent year for which data is provided).[14] LADWP has achieved average renewable energy sales of approximately 20 percent for the 2010 through 2013 period.[15] Emission factors for CH_4 and N_2O were obtained from CalEEMod.[16]

The estimated annual emissions from electrical demand from the Baseline Condition are provided in **Table 2**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 2
BASELINE CONDITION ELECTRICAL DEMAND GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
Existing Site						
Retail	5.17	82.5	1,132	0.029	0.0062	42.5
Manufacturing	14.65	67.0	1,132	0.029	0.0062	34.5
Parking/Hardscape	5.95	5.2	1,132	0.029	0.0062	2.7
Subtotal						**80**

[a] California Air Resources Board, CalEEMod User's Guide, Appendix D, Section 5, November 2017, http://caleemod.com/. Accessed December 2017. Factors are based on the historical data option.

[b] Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) C-13.

[c] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[d] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

13 California Air Resources Board, CalEEMod User's Guide, Section 4.6, November 2017, http://caleemod.com/. Accessed December 2017.

14 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) C-13.

15 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-1.

16 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

Operational Energy – Natural Gas

The existing land uses under the Baseline Condition utilize natural gas primarily for heating needs. The combustion of natural gas results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The combustion of natural gas occurs on-site; therefore, the associated GHG emissions are considered to be direct.

The emissions of GHGs associated with natural gas combustion under the Baseline Condition are based on the size of the existing land uses, the natural gas combustion factors for the land uses in units of million British thermal units (MMBtu), the GHG emission factors for natural gas combustion, and the GWP values for the GHGs emitted. Annual natural gas GHG emissions in units of $MTCO_2e$ are generally calculated as follows:

Natural Gas:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_{NG} \times EF_{NG} \times GWP)_i \right) \div 2204.62 \quad \textbf{[Equation 2]}$$

Where:
- Units = Number of land use units (same land use type) [DU or 1000 sqft]
- D_{NG} = Natural gas combustion factor [MMBtu/DU or 1000 sqft/year]
- EF_{NG} = GHG emission factor [pounds/MMBtu]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 2204.62 = Conversion factor [pounds/MT]
- i = Summation index

Similar to the electricity calculations, natural gas demand is based on data from the CEUS, which lists energy demand by building type, as incorporated into CalEEMod. As discussed previously, the existing buildings on the Project Site were built in the 1910s to the 1950s. Thus, the building natural gas usage rates are adjusted within CalEEMod using the "historical data" option to use the prior 2005 Title 24 Building Energy Efficiency Standards. This is considered a conservative adjustment because the existing buildings were built prior to implementation of the 2005 Standards and thus would have been built to a less stringent energy standard and data is not available within CalEEMod to adjust usage factors prior to the 2005 Standards. Parking lot and hardscape areas do not result in natural gas combustion and were excluded as sources.

The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the Baseline Condition were obtained from CalEEMod, which provides statewide emission factors.

The estimated annual emissions from natural gas combustion from the Baseline Condition are provided in **Table 3**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 3
BASELINE CONDITION NATURAL GAS GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Natural Gas Demand Factor, D_{NG} (MMBtu/year) [a]	Emission Factor, EF_{NG} (pounds/MMBtu)			Annual GHG Emissions ($MTCO_2e$/year) [c]
			CO_2 [b]	CH_4 [b]	N_2O [b]	
Existing Site						
Retail	5.17	9.4	117.65	0.0023	0.0022	0.5
Manufacturing	14.65	15.2	117.65	0.0023	0.0022	0.8
Subtotal						**1**

[a] California Air Resources Board, CalEEMod User's Guide, Appendix D, Section 5, November 2017, http://caleemod.com/. Accessed December 2017. Factors are based on the historical data option.

[b] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

Operational Mobile

Mobile source emission calculations associated with the Baseline Condition are calculated using vehicle miles traveled (VMT) from the traffic analysis prepared for the Project.[17] The estimated VMT in the traffic analysis is based on average trip lengths for each land use were determined using CalEEMod. The trip type describes the purpose of the trip generated at each land use, such as for commercial trips. Commercial trips include commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW). The trip lengths are based on the location and urbanization of the Project area. The average trip length of each land use is the sum of the trip length of each trip type multiplied by the percentage of trip type and accounting for applicable reductions from proximity to transit and other VMT-reducing land use characteristics.

The annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic analysis prepared for the Project.[18] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses. The VMT calculations for the existing site uses are provided in **Appendix A.**

The analysis is also based on the CARB on-road vehicle emissions factor model (EMFAC). EMFAC2014 "represents ARB's current understanding of motor vehicle travel activities and their associated emission levels."[19] Emissions of GHGs associated with mobile sources under the Baseline Condition are based on the average daily trip rate, trip distance, the GHG emission factors for the mobile sources, and the GWP values for the GHGs emitted. The types of vehicles

17 The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

18 The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

19 California Air Resources Board, Mobile Source Emissions Inventory, http://www.arb.ca.gov/msei/categories.htm#emfac2014. Accessed September 2017.

that visit the Project Site include all vehicle types including automobiles, light-duty trucks, delivery trucks, and waste haul trucks. Modeling for the Baseline Condition was conducted using the vehicle fleet mix for the South Coast Air Basin for all vehicle types as provided in EMFAC2014.

Emission factors were obtained from EMFAC2014, which was run in the emissions mode (also referred to as the "Burden" mode) and used to generate South Coast Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile, which is the same methodology used by CalEEMod. Emissions of GHGs from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the existing Project Site. The emissions were calculated using the South Coast Air Basin motor vehicle fleet mix for year 2017 as provided in EMFAC2014. Mobile source emissions are the product of the CalEEMod estimated VMT and the EMFAC2014 emission factors. The estimated annual emissions from mobile sources from the Baseline Condition are provided in **Table 4**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 4
BASELINE CONDITION MOBILE SOURCE GREENHOUSE GAS EMISSIONS

Land Use	Estimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
Existing Site			
Retail/Manufacturing (2017)	760,945	462.4	352
Subtotal			**352**

[a] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017. Based on the estimated weekday VMT multiplied by 261 days per year and the estimated weekend VMT, using the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses multiplied by 104 days per year.

[b] EMFAC2014 Emission Factors for the South Coast Air Basin motor vehicle fleet mix.

SOURCE: ESA 2017.

Operational Solid Waste

The existing land uses under the Baseline Condition generate municipal solid waste (MSW) from day-to-day operational activities, which generally consists of product packaging, bottles, food scraps, paper, plastic, and other items routinely disposed of in municipal trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the Baseline Condition are calculated using CalEEMod. The emissions are based on the size of the existing land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Solid Waste:

Annual Emissions [$MTCO_2e$] = ($\sum_i$ (Units × D_{MSW} × EF_{MSW} × GWP)$_i$) ÷ 1.1023
[Equation 3]

Where: Units = Number of land use units (same land use type) [DU or 1000 sqft]
D_{MSW} = Waste disposal rate [tons/DU or 1000 sqft/year]
EF_{MSW} = GHG emission factor [tons/ton waste]
GWP = Global warming potential [CO_2 = 1, CH_4 = 25, N_2O = 298]
1.1023 = Conversion factor [tons/MT]
i = Summation index

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. Annual waste disposal rates used in CalEEMod are based on data from the California Department of Resources Recycling and Recovery (CalRecycle).[20] The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of approximately 76 percent, according to the most recent data available.[21] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, are used in this assessment.

The estimated annual emissions from solid waste disposal from the Baseline Condition are provided in **Table 5**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 5
BASELINE CONDITION SOLID WASTE DISPOSAL GREENHOUSE GAS EMISSIONS

Land Use	Waste Diversion Rate [a]	Waste Disposal after Diversion, D_{MSW} (tons/year) [b]	Landfill gas (no capture)	Landfill Gas (capture with flaring)	Annual GHG Emissions ($MTCO_2e$/year) [c]
Existing Site					
Retail/Manufacturing	76%	9.6	6%	94%	5
Subtotal					**5**

[a] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

[b] CalRecycle, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 Manufacturing – All Other (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017.

[c] Emissions are based on CalEEMod default values for landfill gas capture and flaring for the South Coast Air Basin region. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

20 CalRecycle, 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 Manufacturing – All Other (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017.

21 City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

Operational Water and Wastewater

Water and wastewater generated from the existing land uses under the Baseline Condition requires energy to supply, distribute and treat. The combustion of fossil fuels to produce electricity results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. The electricity generation occurs off-site; therefore, the electricity use from water and wastewater results in GHG emissions that are considered to be indirect. Wastewater also results in emissions of GHGs from wastewater treatment systems (e.g., septic, aerobic, or lagoons) as well as from solids that are digested either through an anaerobic digester or with co-generation from combustion of digester gas.

The emissions of GHGs associated with water demand and wastewater generation under the Baseline Condition are calculated using CalEEMod. The emissions are based on the size of the existing land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod as follows for indoor and outdoor water demand:

Water Supply, Treatment, and Distribution; Wastewater Treatment (electricity):

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times D_W \times (EI_W \div 1000) \times EF_W \times GWP)_i \right) \div 2204.62$$

[Equation 4]

Where:

Units	=	Number of land use units (same land use type) [DU or 1000 sqft]
D_W	=	Water demand factor [million gallons (Mgal)/DU or 1000 sqft/year]
EI_W	=	Electricity intensity factor [kilowatt-hours (kWh)/Mgal]
1000	=	Conversion factor [kWh/MWh]
EF_W	=	GHG emission factor [pounds/MWh]
GWP	=	Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
2204.62	=	Conversion factor [pounds/MT]
i	=	Summation index

The estimated water demand is based on CalEEMod factors, which are based on annual water demand rates in the Pacific Institute *Waste Not Want Not* report.[22] There is no landscaping at the existing land uses at the Project Site. There are currently no trees or other substantial landscaping located on the Project Site with the exception of five street trees located along the street-side edge of Olive Street that are maintained by the City. Therefore, under the Baseline Condition, this analysis assumes no outdoor water demand associated with the existing land uses.

22 Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm.

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report Refining Estimates of Water-Related Energy Use in California, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[23] The same electricity GHG emissions factors discussed under the **Operational Energy – Electricity** subheading are used for water and wastewater energy usage.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in CalEEMod for the type of wastewater treatment. Calculation formulas are described in detail in the California Emissions Estimator Model User's Guide, Appendix A.[24] As stated in the User's Guide, the GHGs emitted from each type of wastewater treatment are based on the CARB's Local Government Operations Protocol (LGOP),[25] which are in turn based on United States Environmental Protection Agency (USEPA) methodologies.[26] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas.

The estimated annual emissions from water and wastewater from the Baseline Condition are provided in **Table 6**. Detailed emissions calculations are provided in **Appendix A**.

TABLE 6
BASELINE CONDITION WATER AND WASTEWATER GAS GREENHOUSE GAS EMISSIONS

Land Use	Water Demand, D_W (gal/year) [a]	Electricity Intensity Factor, EI_W (kWh/Mgal) [b]				Annual GHG Emissions ($MTCO_2e$/year) [c]
		Supply	Treat	Distribute	Treatment	
Existing Site						
Retail	382,955 (indoor) / 0 (outdoor)	9,727	111	1,272	1,911	3.1
Manufacturing	3,387,810 (indoor) / 0 (outdoor)	9,727	111	1,272	1,911	27.3
Subtotal						**30**

[a] City of Los Angeles, Department of Public Works, Bureau of Sanitation, Sewerage Facilities Charge, Sewage Generation Factors for Residential and Commercial Categories. Provided in the L.A. CEQA Thresholds Guide, pages M.2-22-M.2-26 (2006). Water demand rates are derived based on the wastewater generation rates.

[b] California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix A.**

SOURCE: ESA 2017.

23 California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

24 California Air Resources Board, CalEEMod User's Guide, Appendix A, November 2017, http://caleemod.com/. Accessed December 2017.

25 California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, (2008).

26 United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, (2008).

Operational Area and Stationary

Area sources of GHG emissions typically result from the operation of equipment used to maintain landscaping, such as lawnmowers and trimmers. The combustion of fossil fuels to operate these equipment results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. There is no landscaping at the existing land uses at the Project Site. There are currently no trees or other substantial landscaping located on the Project Site with the exception of five street trees located along the street-side edge of Olive Street that are maintained by the City. There are no other substantial stationary sources on-site, such as generators or industrial sized boilers. Therefore, under the Baseline Condition, this analysis does not include operational area or stationary sources of emissions associated with the existing land uses.

Summary of Baseline Condition GHG Emissions

A summary of the GHG emissions under the Baseline Condition is provided in **Table 7**.

TABLE 7
BASELINE CONDITION SUMMARY OF ANNUAL GREENHOUSE GAS EMISSIONS

Source	Annual GHG Emissions ($MTCO_2e$/year) [a]
Existing Site	
Electricity	80
Natural Gas	1
Mobile	352
Solid Waste	5
Water and Wastewater	30
Area and Stationary	0
Total	**468**

[a] Totals may not add up exactly due to rounding in the modeling calculations.

SOURCE: ESA 2017.

3.3 Project Construction and Operational Emissions

3.3.1 Description of Project Condition

The Project would demolish all existing buildings and surface parking/hardscape on the Project Site. The Project would construct an approximately 751,777 square foot (net) mixed-use high-rise building with 794 multi-family residential units and 12,504 square feet of neighborhood serving commercial uses. Approximately 103,380 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and a public art Plaza. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. The square footage for the Project land uses and modeled in CalEEMod are provided in **Table 8**.

TABLE 8
PROJECT FLOOR AREA

Land Use	Modeled CalEEMod Land Use	Units
Residential Apartments	Apartments High Rise	794 dwelling units (739,273 sqft)
Commercial [a]	High Turnover (Sit Down Restaurant)	12,504 sqft
Common Amenity Area for Residents (exterior/lounge/activity)	General Office	37,927 sqft
Common Amenity Area for Residents (interior/lounge/activity)	General Office	23,025 sqft
Private Balcony Space for Residents	Other Non-Asphalt Surfaces	39,700 sqft
Public Plaza Area	City Park	2,728 sqft
Parking	Enclosed Parking with Elevator	891 spaces (426,458 sqft)

[a] The commercial use is modeled as high turnover (sit down restaurant) in order to provide a conservative analysis. The high turnover (sit down restaurant) use generates more vehicle trips and has greater energy demand compared to other commercial (i.e., retail, office) uses.

SOURCE: 1045 Olive, LLC 2017.

For the purposes of this assessment, in order to provide a comparison of the Project's GHG emissions with the Baseline Condition, and to assess future GHG emissions trends of the Project, emissions of GHGs are estimated for the Project's construction and operational lifetime. Within the Project's operational lifetime, there are several key milestone years. The milestone years correspond to the following circumstances:[27, 28]

- 2023: Expected full initial operational year of the Project (electric utilities, including LADWP, are required to supply a minimum of 33 percent of electricity via renewable sources during this year);
- 2024: The year in which electric utilities, including LADWP, are expected to supply a minimum of 40 percent of electricity via renewable sources;
- 2025: The year in which the model year 2017-2025 light-duty vehicle GHG emissions and Corporate Average Fuel Economy standards are to be fully implemented for new vehicles;
- 2027: The year in which electric utilities, including LADWP, are expected to supply a minimum of 45 percent of electricity via renewable sources;
- 2030: The year in which electric utilities, including LADWP, are expected to supply a minimum of 50 percent of electricity via renewable sources.

27 Assembly Bill 1493 (Pavley Regulations) reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.

28 On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. SB 350 was signed into law on October 7, 2015.

3.3.2 GHG Emission Sources and Calculation Methodology

Construction

Construction of the Project would result in one-time GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O from heavy-duty construction equipment, haul trucks, and worker vehicles. Construction emissions are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the off-road and on-road emissions factors. The emissions are estimated using the CalEEMod tool, which incorporates the CARB off-road equipment emissions factor model (OFFROAD) and on-road vehicle emissions factor model (EMFAC). The output values used in this analysis are adjusted to be Project-specific based on equipment types and the construction schedule. These values are applied to the construction phasing assumptions to generate GHG emissions values for each construction year. The CalEEMod tool provides options for specifying equipment, horsepower ratings, load factors, and operational hours per day. Since a construction contractor(s) has not yet been retained for the Project, specific equipment specifications are not yet known. Therefore, recommended equipment and vehicle horsepower ratings and load factors provided in CalEEMod are used in this assessment. According to the CalEEMod User's Guide, the model "utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available."[29] Therefore, the use of the recommended CalEEMod data is an appropriate methodology. In addition, certain equipment, such as tower cranes and compressors, would be electric powered and were modeled in CalEEMod using the electric fuel input, rather than diesel fuel. Haul trucks would be used to export soil from the Project Site. Concrete trucks would be used to import concrete to the Project Site. Emissions from haul trucks and continuous pour concrete trucks were estimated outside of CalEEMod using EMFAC2014 emission factors for heavy-duty trucks because soil would be exported for only a portion of the days during the site preparation and grading/excavation construction phases, and the continuous concrete pour would occur for approximately 1 day (CalEEMod would incorrectly assume soil export and concrete import would occur every day during these phases).

Construction of the Project would occur over a number of phases and include activities such as demolition, debris and soil hauling, building construction, architectural coating, and paving. Information regarding the activities that would occur during these phases is provided below:

- **Demolition:** This phase is anticipated to begin as early as 2019 and last for approximately one month. If construction commences at a later date, this assessment would be considered conservative as future year emission factors tend to decline in future years. Construction equipment would include a concrete saw, loader, haul trucks, jackhammer, sweeper/scrubber and other construction equipment.
- **Site Preparation:** This phase is anticipated to occur during demolition and last for approximately one month. Construction equipment would include a concrete saw, excavator, and sweeper/scrubber.

[29] California Air Resources Board, CalEEMod User's Guide, p.1, November 2017, http://caleemod.com/. Accessed December 2017.

- **Grading and Excavation:** This phase is anticipated to have some overlap with the demolition and site preparation phase and last for approximately four months. Construction equipment would include a backhoe, drill rig, excavators, haul trucks, loaders, and sweeper/scrubber. Up to approximately 80,000 cubic yards of soil would be excavated and exported.
- **Utilities/Trenching:** This activity is anticipated to have some overlap with grading and excavation and last for approximately 3 months. During this phase, trenching for site utilizes would occur. Construction equipment would include a backhoe and sweeper/scrubber.
- **Foundation/Concrete Pouring:** This activity is anticipated to have some overlap with grading and excavation and utilities/trenching and would be on-going through building construction activities for approximately 2.5 years. During this activity, the building foundations would be prepared and concrete pouring would occur. Construction equipment would include a concrete trucks, backhoe, crane, forklift, and sweeper/scrubber.
- **Building Construction:** This phase is anticipated to begin after grading and excavation and after the building foundations have been prepared and last for just over 2 years. During this phase, the building would be constructed. Construction equipment would include cranes, forklifts, sweeper/scrubber, and material/vendor supply trucks.
- **Paving:** This activity is anticipated to last for approximately 2 months and occur during the building construction phase. During this activity, paving materials would be poured during construction of the buildings and related features and the surfaces would be paved. Construction equipment would include a backhoe, sweeper/scrubber, and other equipment.
- **Architectural Coating:** This activity is anticipated to last for approximately 2 years and occur during the building construction phase. During this activity, the interior and exterior coating would be applied to the residential and commercial uses as the floors are built out. Specific coating equipment would include an air compressor and forklift.

The emissions of GHGs associated with construction of the Project were calculated for each year of construction activity. Detailed emissions calculations are provided in **Appendix B**. Results of the GHG emissions calculations are presented in **Table 9**. Although GHGs are generated during construction and are accordingly considered one-time emissions, it is important to them when assessing all of the long-term GHG emissions associated with the Project.

TABLE 9
ESTIMATED UNMITIGATED PROJECT CONSTRUCTION GREENHOUSE GAS EMISSIONS

Emission Source	Annual GHG Emissions [a] (MTCO2e)
Construction Year 1	1,262
Construction Year 2	1,678
Construction Year 3	2,666
Construction Year 4	1,507

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

Operational Energy – Electricity

Electricity-related emissions of GHGs associated with operation of the Project are based on the size of the commercial and residential land uses (including residential amenities), the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual electricity GHG emissions are calculated using the general formula shown previously as **Equation 1**. For residential land uses, emission factors are specified in units of dwelling units (DU). For nonresidential land uses, emission factors are specified in units of 1,000 square feet. This assessment also includes electricity-related GHG emissions from the proposed enclosed parking structure, which would include elevators, lighting, and a ventilation system.

Electricity demand is based on data from the CEUS, which lists energy demand by building type.[30] However, since the data from the CEUS is from 2002, CalEEMod incorporates correction factors to account for compliance with the 2016 Title 24 Building Standards Code, which went into effect on January 1, 2017. The Project would be required to meet the Title 24 standards in effect at the time of building permit application. For example, new Title 24 standards are anticipated to be adopted in the 2019 timeframe. Although the energy efficiency requirements of these future standards are not yet known, if these standards are in effect at the time of building permit application, the project would be expected achieve greater levels of energy efficiency compared to the 2016 Title 24 standards and energy-related GHG emissions would be reduced further below the levels shown in the analysis.

The Project would be designed to incorporate Project Design Features (PDFs) that would reduce its energy demand with the goal of achieving or exceeding the requirem-ents of the State of California Green Building Standards (CALGreen) Code, the City of Los Angeles Green Building Code, and the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification.[31] According to the USGBC, LEED is the most widely used green building rating system in the world. Thus, the Project would reduce its electricity demand as compared to the default electricity factors in CalEEMod. The PDFs were accounted for in CalEEMod by selecting the appropriate options in the "mitigation measures" section of the model. Green building features that would result in quantifiable reductions in GHG emissions would include the following:

> **Green Building Features**: The Project will achieve the USGBC LEED Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below:

30 California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017

31 The LEED Gold Certification requirement for the Jobs and Economic Improvement Through Environmental Leadership Act for ELDP projects is established pursuant to AB 246 (Santiago, Ch. 522, Statutes of 2017), which was signed by the Governor on October 6, 2017.

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.
- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

The LEED building energy efficiency credits are earned relative to the increase in energy efficiency as compared to the LEED building energy baseline, which is established based on prior building energy efficiency standards. While the Project would optimize building energy performance and achieve LEED credits for building energy performance, additional energy reductions from LEED energy efficiency measures are not applied to avoid double counting reductions in the modeling from compliance with California's current 2016 Title 24 building energy requirements.[32]

The LADWP provides electric service to the Project Site. Currently, LADWP provides 20 percent of electricity via renewable sources.[33] LADWP is required to provide an increasing percentage from renewable sources in compliance with the Renewables Portfolio Standard with 33 percent by 2020, 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. During calendar year 2015, 37 percent of the energy delivered to LADWP customers was generated from two coal-fired generating stations: the Intermountain Power Project (IPP), located in Utah, and the Navajo Generating Station (NGS), located in Arizona. These stations provide base load generation to Los Angeles; however, they emit about twice as much CO_2 as energy generated from natural gas.[34] On July 1, 2016, LADWP sold its 477 MW share in NGS to Salt River Project, three and a half years before the operating agreement and land lease expires in December 2019.[35] LADWP continues to focus on early coal replacement options as a means to lower LADWP's CO_2 emission levels and increase renewable sources in accordance with the Renewables Portfolio Standard.

32 The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards. The LEED baseline uses prior energy standards; therefore, in order to avoid double counting reductions, additional energy reductions for LEED compliance are not included in the current calculations. As a result, this assessment provides a conservative assessment of energy-related GHG emissions.

33 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-1.

34 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-8.

35 Los Angeles Department of Water and Power, 2016 Draft Power Integrated Resource Plan, (2016) ES-8.

Based on data obtained from CARB staff, "[i]f an applicant would like to use an EF [emission factor] that represents the state's Renewable Portfolio Standard (RPS) law and growth in electricity demand, the EF of 595 [pounds] CO_2/MWh may be used."[36] According to CARB staff, the "EF represents a 'marginal' supply profile for new generation that will be added to the grid in the years 2020 and beyond, and is consistent with the methodology used in state emission rule impact assessments."[37] Therefore, consistent with the CARB staff recommendation, a CO_2 intensity factor of 595 pounds of CO_2 per MWh was used for electricity emissions for Project operational year 2023. Future year CO_2 intensity factors were scaled proportionately based on the future year renewable energy targets of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Emission factors for CH_4 and N_2O were obtained from CalEEMod.[38] The estimated annual emissions from electrical demand from the project's land uses during the opening year are provided in **Table 10**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 10
PROJECT ELECTRICAL DEMAND GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
2023						
Apartment	794 DU	3,060.0	595	0.029	0.0062	829.3
High Turnover (Sit Down Rest.)	12.5	551.9	595	0.029	0.0062	149.6
Publicly Accessible Plaza Area	2.7	0.95	595	0.029	0.0062	0.3
Common Open Space (Exterior)	37.9	492.7	595	0.029	0.0062	133.5
Common Open Space (Interior)	23.0	299.1	595	0.029	0.0062	81.1
Private Balconies for Residents	39.7	13.9	595	0.029	0.0062	3.8
Enclosed Parking with Elevator	426.5	2,499.0	595	0.029	0.0062	677.3
Subtotal						**1,875**
2024-2026						
Apartment	794 DU	3,060.0	533	0.029	0.0062	743.3
High Turnover (Sit Down Rest.)	12.5	551.9	533	0.029	0.0062	134.1
Publicly Accessible Plaza Area	2.7	0.95	533	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	533	0.029	0.0062	119.7
Common Open Space (Interior)	23.0	299.1	533	0.029	0.0062	72.6
Private Balconies for Residents	39.7	13.9	533	0.029	0.0062	3.4
Enclosed Parking with Elevator	426.5	2,499.0	533	0.029	0.0062	607.0
Subtotal						**1,680**

36 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017. The emission factor of 595 pounds CO_2/MWh is from the California LEV III Initial Statement Of Reasons (ISOR, Dec. 7, 2011), http://www.arb.ca.gov/regact/2012/leviiighg2012/leviiighg2012.htm, based on analysis with CA-GREET model. This document is provided in **Appendix C**.

37 California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017.

38 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

Land Use	Units (1000 sqft)	Annual Electrical Demand Factor, D_E (MWh/year) [a]	Emission Factor, EF_E (pounds/MWh)			Annual GHG Emissions ($MTCO_2e$/year) [d]
			CO_2 [b]	CH_4 [c]	N_2O [c]	
2027-2029						
Apartment	794 DU	3,060.0	488	0.029	0.0062	680.8
High Turnover (Sit Down Rest.)	12.5	551.9	488	0.029	0.0062	122.8
Publicly Accessible Plaza Area	2.7	0.95	488	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	488	0.029	0.0062	109.6
Common Open Space (Interior)	23.0	299.1	488	0.029	0.0062	66.5
Private Balconies for Residents	39.7	13.9	488	0.029	0.0062	3.1
Enclosed Parking with Elevator	426.5	2,499.0	488	0.029	0.0062	556.0
Subtotal						**1,539**
2030-2052						
Apartment	794 DU	3,060.0	444	0.029	0.0062	619.8
High Turnover (Sit Down Rest.)	12.5	551.9	444	0.029	0.0062	111.8
Publicly Accessible Plaza Area	2.7	0.95	444	0.029	0.0062	0.2
Common Open Space (Exterior)	37.9	492.7	444	0.029	0.0062	99.8
Common Open Space (Interior)	23.0	299.1	444	0.029	0.0062	60.6
Private Balconies for Residents	39.7	13.9	444	0.029	0.0062	2.8
Enclosed Parking with Elevator	426.5	2,499.0	444	0.029	0.0062	506.1
Subtotal						**1,401**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, Climate Zone 11, http://www.caleemod.com/. Accessed December 2017. The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards.

[b] California Air Resources Board, Statewide Emission Factors (EF) for Use with AB 900 Projects, January 2017.

[c] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[d] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

Operational Energy – Natural Gas

Natural gas-related emissions of GHGs associated with operation of the project are based on the size of the commercial, restaurant, and residential land uses (including residential amenities), the natural gas demand factors for the land uses, the GHG emission factors for the natural gas combustion, and the GWP values for the GHGs emitted. Annual natural gas GHG emissions are calculated using the general formula shown previously as **Equation 2**. For residential land uses, emission factors are specified in units of DU. For nonresidential land uses, emission factors are specified in units of 1,000 square feet.

Natural gas demand is based on data from the CEUS, which lists energy demand by building type.[39] However, since the data from the CEUS is from 2002, CalEEMod incorporates correction

[39] California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/ChartsSF/Default2.aspx. Accessed September 2017.

factors to account for compliance with the 2016 Title 24 Building Standards Code, which went into effect on January 1, 2017 (since the LEED baseline is established based on prior building energy efficiency standards, additional energy reductions from LEED energy efficiency measures are not applied to avoid double counting reductions).[40] The project would be designed to incorporate PDFs that would reduce its energy demand with the goal of achieving or exceeding the requirements of the CALGreen Code, the City of Los Angeles Green Building Code, and the USGBC LEED Gold Certification. Thus, the project would reduce its natural gas demand as compared to the default electricity factors in CalEEMod. The PDFs were accounted for in CalEEMod by selecting the appropriate options in the "mitigation measures" section of the model. A summary of the energy-efficiency PDFs is provided above in PDF-GHG-1.

The combustion of natural gas results in relatively equal amounts of GHG emissions per unit of gas combusted in the state. Emission factors for GHGs due to natural gas combustion to serve the heating and cooking demands of the project were obtained from CalEEMod, which provides statewide emission factors.[41] The emissions of GHGs due to natural gas demand would be relatively steady for the years assessed. The estimated annual emissions from natural gas combustion from the project are provided in **Table 11**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 11
PROJECT NATURAL GAS COMBUSTION GREENHOUSE GAS EMISSIONS

Land Use	Units (1000 sqft)	Annual Natural Gas Demand Factor (MBtu/year) [a]	Emission Factor (pounds/MMBtu)			Annual GHG Emissions ($MTCO_2e$/year) [c]
			CO_2 [b]	CH_4 [b]	N_2O [b]	
2023-2052						
Apartment [e]	739.3	7,318.3	117.65	0.0023	0.0022	392.9
High Turnover (Sit Down Rest.)	12.5	2,885.4	117.65	0.0023	0.0022	154.9
Publicly Accessible Plaza Area	2.7	0	117.65	0.0023	0.0022	0
Common Open Space (Exterior)	37.9	394.8	117.65	0.0023	0.0022	21.2
Common Open Space (Interior)	23.0	239.7	117.65	0.0023	0.0022	12.9
Private Balconies for Residents	39.7	0	117.65	0.0023	0.0022	0
Enclosed Parking with Elevator	426.5	0	117.65	0.0023	0.0022	0
Subtotal						**582**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, Climate Zone 11, http://www.caleemod.com/. Accessed December 2017. The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards.

[b] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[c] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

40 The current version of CalEEMod (version 2016.3.2) includes electricity and natural gas correction factors for the 2016 version of the Title 24 building standards. The LEED baseline uses prior energy standards; therefore, in order to avoid double counting reductions, additional energy reductions for LEED compliance are not included in the current calculations. As a result, this assessment provides a conservative assessment of energy-related GHG emissions.

41 California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

SOURCE: ESA 2017.

Operational Mobile

Mobile source emission calculations associated with the project are calculated using the VMT from the traffic analysis prepared for the project.[42] The estimated VMT in the traffic analysis is based on average trip lengths for each land use were determined using CalEEMod. The trip type describes the purpose of the trip generated at each land use, such as residential trips and commercial trips. Residential trips include home-work (H-W), home-shop (H-S), and home-other (H-O). Commercial trips include commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW). The trip lengths are based on the location and urbanization of the project area. The average trip length of each land use is the sum of the trip length of each trip type multiplied by the percentage of trip type.

The project is considered an "infill" project, as it is replacing existing commercial uses with a high-density, mixed-use development. The project proposes higher density, consistent with compact growth, on a parcel of infill urban land accessible to and well served by public transit including frequent and comprehensive transit services provided by the nearby Metro Blue Line and Expo Line, where the Blue line provides convenient access to locations within Downtown Los Angeles, Long Beach and Compton, and where the Expo line provides convenient access to locations in Los Angeles, Culver City and Santa Monica. Both provide direct connections to the Metro Gold, Purple, and Expo lines that provide transit service to a multitude of locations through the Los Angeles region. The project would be located within a half-mile of public transportation, including 10 existing Metro bus routes (14, 28, 37, 70, 71, 76, 78, 79, 96 and 378), two Rapid Lines (770 and 728), one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB10), and two LADOT Commuter Express Lines CE 431 and CE 437. New housing and job growth, as a result of the completed project, is focused in a high-quality transit area (HQTA), which the Southern California Association of Governments (SCAG) defines as an area within a half mile of a well-serviced transit stop. These land use characteristics are analyzed below to demonstrate that the project would result in reduced vehicle trips, VMT, and associated transportation-related GHG emissions, as well as air pollutant emissions, compared to the statewide and South Coast Air Basin average.

Based on the AB 900 Traffic Assessment prepared by The Mobility Group, Project related reductions in trip generation and VMT due to the Project's infill nature, location, design, and TDM program were quantified.[43] The characteristics of the Project listed below would result in a reduction in VMT and associated GHG and air pollutant emissions.

- **Internal Capture Reduction:** The Project's restaurant space would provide a convenient local destination for the residential element of the Project without having to drive to other locations. It was estimated that a reduction of 15 percent of the trips to and from the restaurant space would come from the on-site residential element of the Project.

[42] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.
[43] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

- **Transit and Walk/Bike Reduction:** The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. Therefore, it was estimated that vehicle trips would be reduced by 20 percent due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

- **Transportation Demand Management (TDM) Reduction:** The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with information on alternate modes and walk destination opportunities.
  - Unbundling of residential parking
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers/showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

  The implementation of the TDM package would result in an estimated reduction of 10 percent of the vehicle trips to and from the residential element of the Proposed Project.

- **Pass-by Trip Reduction:** The Project's commercial restaurant space would provide a convenient local destination for residents in the local neighborhood without having to drive to other locations. It was estimated that a reduction of 20 percent of trips to and from the restaurant space would result from pass-by customers.

The annual VMT is based on the sum of the estimated weekday VMT (261 days out of a year) and the weekend VMT (104 days out of a year). Weekday VMT are provided in the traffic

analysis prepared for the Project.[44] Weekend VMT are derived from the weekday VMT estimates by scaling the weekday VMT by the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses. The VMT calculations for the project site uses are provided in **Appendix B**.

Emissions of GHGs from motor vehicles are dependent on model years and the specific types of vehicles that are used to travel to and from the existing project site. The national policy for fuel efficiency and emissions standards for the United States auto industry requires that new passenger cars and light-duty trucks achieve an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016 (Phase I standards), based on USEPA calculation methods. In August 2012, more stringent phased-in standards were adopted for new model year 2017 through 2025 passenger cars and light-duty trucks. By 2020, new vehicles are projected to achieve 41.7 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 213 grams of CO_2 per mile (Phase II standards). By 2025, new vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile (Phase II standards). All vehicle types would visit the project site. Therefore, this assessment uses the South Coast Air Basin motor vehicle fleet mix and the fleet average calendar year emissions factors from EMFAC2014 to estimate mobile source GHG emissions. Mobile source emissions are estimates for calendar years 2023 through 2052.

The estimated annual emissions from mobile sources from the project are provided in **Table 12**, *Project Mobile Source Greenhouse Gas Emissions*. Detailed emissions calculations are provided in **Appendix B**.

TABLE 12
PROJECT MOBILE SOURCE GREENHOUSE GAS EMISSIONS

Fleet Mix Year (All Vehicle Classes)	Extimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
2023-2052			
2023	17,103,425	392.7	6,716
2024	17,103,425	382.7	6,546
2025	17,103,425	371.0	6,346
2026	17,103,425	361.2	6,178
2027	17,103,425	352.5	6,029
2028	17,103,425	344.9	5,899
2029	17,103,425	338.2	5,785
2030	17,103,425	332.4	5,686
2031	17,103,425	327.7	5,604
2032	17,103,425	323.3	5,529
2033	17,103,425	319.4	5,463
2034	17,103,425	316.2	5,408

44 The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017.

Fleet Mix Year (All Vehicle Classes)	Extimated Annual VMT [a]	CO_2e Emission Factor (grams/mile) [b]	Annual GHG Emissions ($MTCO_2e$/year)
2023-2052			
2035	17,103,425	313.6	5,363
2036	17,103,425	311.6	5,330
2037	17,103,425	310.0	5,302
2038	17,103,425	308.8	5,281
2039	17,103,425	307.9	5,266
2040	17,103,425	307.2	5,255
2041	17,103,425	306.8	5,247
2042	17,103,425	306.5	5,243
2043	17,103,425	306.5	5,242
2044	17,103,425	306.5	5,242
2045	17,103,425	306.6	5,244
2046	17,103,425	306.9	5,249
2047	17,103,425	307.2	5,254
2048	17,103,425	307.6	5,261
2049	17,103,425	308.0	5,269
2050	17,103,425	308.6	5,279
2051 [c]	17,103,425	308.6	5,279
2052 [c]	17,103,425	308.6	5,279

[a] The Mobility Group, 1045 Olive Street Project – AB 900 Traffic Assessment, September 2017. Based on the estimated weekday VMT multiplied by 261 days per year and the estimated weekend VMT, using the weighted factor of the weekend trip rates provided in CalEEMod for the existing site uses multiplied by 104 days per year.

[b] EMFAC2014 Emission Factors for the South Coast Air Basin motor vehicle fleet mix.

[c] EMFAC2014 does not generate emission factors for calendar years after 2050. Therefore, 2050 emission factors were used to represent emissions in calendar years 2051 and 2052.

SOURCE: ESA 2017.

Operational Solid Waste

The project would generate MSW from day-to-day operational activities, which generally consists of product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, plastic, and other items routinely disposed of in trash bins. A portion of the MSW is diverted to waste recycling and reclamation facilities. Waste that is not diverted is usually sent to local landfills for disposal. MSW that is disposed in landfills results in GHG emissions of CO_2 and CH_4 from the decomposition of the waste that occurs over the span of many years.

Emissions of GHGs associated with solid waste disposal under the project are calculated using CalEEMod. The emissions are based on the size of the commercial and residential land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHGs emitted. Annual waste disposal GHG emissions in units of $MTCO_2e$ are generally calculated in CalEEMod using the general formula shown previously as **Equation 3**.

CalEEMod allows the input of several variables to quantify solid waste emissions. The model requires the amount of waste disposed, which is the product of the waste disposal rate times the land use units. Annual waste disposal rates used in CalEEMod are based on waste generation data for applicable residential and nonresidential land uses from the City of Los Angeles and CalRecycle. The total amount of waste disposed was reduced by the diversion rate for the City of Los Angeles of 76 percent, according to data available from the City.[45] The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery), which are statewide averages, are used in this assessment.

The estimated annual emissions from solid waste disposal from the project are provided in **Table 13**. The emissions of GHGs due to waste generation would be relatively steady for the years assessed. Detailed emissions calculations are provided in **Appendix B**.

TABLE 13
PROJECT SOLID WASTE DISPOSAL GREENHOUSE GAS EMISSIONS

Land Use [a]	Waste Diversion [b]	Waste Disposal Rate After Diversion (tons/year)	Landfill gas (no capture)	Landfill Gas (capture with flaring)	Annual GHG Emissions ($MTCO_2e$/year) [c]
2023-2052					
Apartment	76%	425.3	6%	94%	213.9
High Turnover (Sit Down Rest.)	76%	23.8	6%	94%	11.9
Subtotal					**226**

[a] Waste generation factors provided by
Apartment: City of Los Angeles (LA) California Environmental Quality Act (CEQA) Thresholds Guide, Chapter M.3 Solid Waste, (2006). Available at: http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf. Accessed September 2017.
Commercial (Restaurant): CalRecycle 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California, September 10, 2015, Table 1 (converted to lbs/employee/year). Available at: http://www.calrecycle.ca.gov/publications/Documents/1543/20151543.pdf. Accessed September 2017. The calculation assumes all of the commercial space would be used for restaurant uses. If other types of retail use are located on the Project Site their solid waste generation would be less than this calculation.

[b] City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

[c] Emissions are based on CalEEMod default values for landfill gas capture and flaring for the South Coast Air Basin region. Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

SOURCE: ESA 2017.

With respect to municipal solid waste, the State has enacted regulations to address solid waste services and recycling. California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649 et seq. requires businesses that produce four cubic yards or more of solid waste per week or multifamily residential dwellings of five units or more to arrange for recycling services that are consistent with state or local laws or requirements, including a local ordinance or agreement, applicable to the collection, handling, or recycling of solid waste, to the extent that

45 City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013).

these services are offered and reasonably available from a local service provider.[46] In addition, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.8 et seq. requires after January 1, 2020, if the department determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during 2014, a business that generates two cubic yards or more per week of commercial solid waste is required to arrange for organic waste recycling services that include at least one of the following actions: (1) source separate of organic waste from other waste and subscribe to a basic level of organic waste recycling service that includes collection and recycling of organic waste, (2) recycle its organic waste on-site or self-haul its own organic waste for recycling, (3) subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste, (4) make other arrangements to meet the organic waste requirements of a local governmental agency that are more stringent or comprehensive than the requirements of Chapter 12.9, unless the department determines that this requirement will not result in significant additional reductions of organics disposal.[47] The City has developed and is in the process of implementing the Solid Waste Integrated Resources Plan (SWIRP), also referred to as the City's Zero Waste Plan, whose goal is to lead Los Angeles towards being a "zero waste" City by 2030.[48] These waste reduction plans, policies, and regulations, along with Mayoral and City Council directives, have increased the level of waste diversion (e.g., recycling) for the City to 76 percent as of 2013.[49] The City has also approved Ordinance No. 181519 (Los Angeles Municipal Code (LAMC) Chapter VI, Article 6, Section 66.32-66.32.5), which requires the diversion of mixed construction and demolition debris to City certified construction and demolition waste processors. The project would be consistent with the City and State waste requirements by utilizing waste collection services that are approved by the City and that meet the applicable requirements for waste diversion and recycling mandates. The City generally relies on single-stream waste recycling where mixed waste is collected and sorted for recycling at a waste reclamation facility. The project would subscribe to a municipal solid waste collection service that is approved by the City and that meets applicable City and State waste collection, management, recycling and diversion requirements.

Operational Water and Wastewater

Water and wastewater generated from the existing land uses under the project would require energy to supply, distribute and treat. Emissions of GHGs would result from the combustion of

46 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.8, Section 42649. 2011, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.8.&article=. Access October 2017

47 California Legislature, California Public Resources Code, Division 30, Part 3 Chapter 12.9, Section 42649.9. January 2015, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=30.&title=&part=3.&chapter=12.9.&article=. Accessed October 2017.

48 City of Los Angeles Department of Public Works, LA Sanitation, Solid Waste Integrated Resources Plan (SWIRP) – A Zero Waste Management Plan, October 2013, https://www.lacitysan.org/san/sandocview?docname=cnt012522. Accessed October 2017.

49 City of Los Angeles Department of Public Works, LA Sanitation, Recycling, 2017, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-r?_adf.ctrl-state=kq9mn3h5a_188. Accessed October 2017.

fossil fuels to produce electricity as well as the wastewater treatment process itself, which results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O.

The emissions of GHGs associated with water demand and wastewater generation under the project are calculated using CalEEMod. The emissions are based on the size of the commercial and residential land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution and for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHGs emitted. Annual water demand and wastewater GHG emissions due to electricity are generally calculated in CalEEMod using the general formula shown previously as **Equation 4**.

CalEEMod calculates water demand based on annual rates in the Pacific Institute *Waste Not Want Not* report.[50] CalEEMod provides options to account for the use of water saving features such as the use of low-flow water fixtures (e.g., low-flow faucets, low-flow toilets). The project would incorporate PDFs to reduce indoor and outdoor water usage, as summarized previous in PDF-GHG-1. Implementation of these PDFs would reduce indoor water usage by approximately 35 percent compared to typical usage values for developments meeting the minimum requirements. These water reduction factors have been accounted for in CalEEMod.

The CEC's estimate for energy intensity of the water use cycle in Southern California, as provided in the 2006 CEC report *Refining Estimates of Water-Related Energy Use in California*, is used to calculate the energy usage related to water supply, treatment, and distribution and wastewater treatment.[51] The same electricity GHG emissions factors discussed under the **Operational Energy – Electricity** subheading are used for water and wastewater energy usage.

The emissions of GHGs associated with wastewater treatment process emissions are also calculated using CalEEMod. The emissions are based on the type of treatment (e.g., aerobic, facultative lagoons, septic systems). The emissions are calculating using the default settings in CalEEMod for the type of wastewater treatment. Calculation formulas are described in detail in the *California Emissions Estimator Model User's Guide, Appendix A*.[52] As stated in the *User's Guide*, the GHGs emitted from each type of wastewater treatment are based on the CARB's *Local Government Operations Protocol* (LGOP),[53] which are in turn based on United States Environmental Protection Agency (USEPA) methodologies.[54] The default CalEEMod settings for wastewater treatment are: 10.33 percent septic tank, 87.46 percent aerobic, 2.21 percent facultative lagoons and 100 percent anaerobic combustion of gas. The estimated annual emissions

50 Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm.

51 California Energy Commission, Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report, CEC-500-2006-118, (2006).

52 California Air Resources Board, CalEEMod User's Guide, Appendix A, November 2017, http://caleemod.com/. Accessed December 2017.

53 California Air Resources Board, Local Government Operations Protocol, Chapter 10: Wastewater Treatment Facilities, (2008).

54 United States Environmental Protection Agency, Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006, Chapter 8: Waste, (2008).

from water and wastewater from the project are provided in **Table 14**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 14
PROJECT WATER AND WASTEWATER GREENHOUSE GAS EMISSIONS

Land Use	Indoor Water Demand (gal/year) [a]	Outdoor Water Demand (gal/year) [a]	Suppy Water (kwh/Mgal)	Treat Water (kWh/Mgal)	Distribute Water (kWh/Mgal)	Wastewater Treatment (kWh/Mgal)	Annual GHG Emissions ($MTCO_2e$/year) [b]
2023							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	200.9
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	11.5
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	41.8
Subtotal							**254**
2024-2026							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	184.4
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	10.6
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	38.4
Subtotal							**234**
2027-2029							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	172.5
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	10.0
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	35.9
Subtotal							**218**
2030-2052							
Apartment	31,039,400	16,306,900	9,727	111	1,272	1,911	160.8
High Turnover (Sit Down Rest.)	2,276,500	121,091	9,727	111	1,272	1,911	9.4
Publicly Accessible Plaza Area	0	35,744	9,727	111	1,272	1,911	0.1
Common Open Space (Interior/Exterior) [c]	6,499,720	3,319,750	9,727	111	1,272	1,911	33.5
Subtotal							**204**

[a] California Air Pollution Control Officers Association, California Emissions Estimator Model, http://www.caleemod.com/. Accessed December 2017.

[b] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B.**

[c] For emissions calculation purposes, Common Open Space (Interior/Exterior) was categorized in CalEEMod as the land use type General Office Building which is defined as land uses that house multiple tenants where affairs of businesses commercial or industrial organizations or professional persons or firms are conducted. This was determined to provide a reasonably conservative estimate of emissions for these project uses.

SOURCE: ESA 2017.

Operational Area and Stationary

Area sources of GHG emissions resulting from operation of the Project include equipment used to maintain landscaping, such as lawnmowers and trimmers. The combustion of fossil fuels to operate these equipment results in GHG emissions of CO_2 and smaller amounts of CH_4 and N_2O. There are no other substantial stationary sources on-site, such as generators or industrial sized boilers. Residential hearths would not be installed in the project's residential uses.

The emissions of GHGs associated with operational area sources under the Project are calculated using CalEEMod. The emissions for landscaping equipment are based on the size of the commercial and residential land uses, the GHG emission factors for fuel combustion, and the GWP values for the GHGs emitted. Annual GHG emissions from landscaping equipment in units of $MTCO_2e$ are generally calculated in CalEEMod as follows:

Landscaping Equipment:

$$\text{Annual Emissions } [MTCO_2e] = \left(\sum_i (\text{Units} \times EF_{LE} \times A_{LE} \times GWP)_i \right) \div 10^6 \qquad \textbf{[Equation 5]}$$

Where:
- Units = Number of land use units (same land use type) [DU or 1000 sqft]
- EF_{LE} = GHG emission factor [grams (g)/DU or 1000 sqft/day]
- A_{LE} = Landscaping equipment operating days per year [day/year]
- GWP = Global warming potential [$CO_2 = 1$, $CH_4 = 25$, $N_2O = 298$]
- 10^6 = Conversion factor [g/MT]
- i = Summation index

CalEEMod uses landscaping equipment GHG emission factors from the CARB OFFROAD model and the CARB *Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*.[55] CalEEMod estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin.

Stationary sources would include on-site emergency generator with an estimated capacity rated at approximately 708 kilowatts (950 horsepower), which would provide emergency power primarily for lighting and other emergency building systems. Emissions of GHGs would be generated during maintenance and testing operations and emissions were estimated separately outside of the CalEEMod software. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines). Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470. In general, stationary-source emergency generator emissions are calculated as follows:

55 California Air Resources Board, OFFROAD Modeling Change Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment, (6/13/2003), http://www.arb.ca.gov/msei/2001_residential_lawn_and_garden_changes_in_eqpt_pop_and_ act.pdf. Accessed September 2017.

Stationary Source Emergency Generator:

$$\text{Emissions}_{\text{Diesel}}\,[g] = \sum_i (EF \times Pop \times HP \times Load \times Activity)_i \qquad \textbf{[Equation 6]}$$

Where:

EF	=	Emission factor [g/bhp-hr]
Pop	=	Population [quantity of same equipment type]
HP	=	Maximum rated horsepower [hp]
Load	=	Load Factor [dimensionless]
Activity	=	Hours of operation [hours per day, hours per year]
i	=	Summation index

The estimated annual emissions from area and stationary sources under the project are provided in **Table 15**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 15
PROJECT AREA AND STATIONARY SOURCE GREENHOUSE GAS EMISSIONS

Emission Source	Annual GHG Emissions [a]
Landscaping Equipment	14
Emergency Generator	19
Total GHG Emissions	**33**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

SOURCE: ESA 2017.

Carbon Sequestration from Vegetation

The Project site includes a number of green spaces that will include a mix of canopy trees and native shrubs, perennials, and ground cover. Canopy trees will provide a source of carbon sequestration that would offer a reduction in GHG emissions produced by the project. Native shrubs, perennials, and ground cover would also contribute to carbon sequestration.

Carbon sequestration was estimated using CalEEMod, which calculates carbon sequestration from vegetation based on the Project's net addition of vegetated land uses, the number of new trees, and the types of trees being planted. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site. According the methodology in the CalEEMod User's Guide, carbon sequestration from vegetation are calculated as follows:

Carbon Sequestration from Vegetation (Land Use Change):

$$\text{Total Sequestered } CO_2 = \sum_i (SeqCO_2 \times Area)_i - \sum_j (SeqCO_2 \times Area)_j \qquad \textbf{[Equation 7]}$$

Where:

$SeqCO_2$	=	Mass of sequestered CO_2 per unit area [$MTCO_2$/acre]
Area	=	Area of land for specific land use type [acre]
i	=	Summation index for final land use type
j	=	Summation index for initial land use type

Carbon Sequestration from Vegetation (Trees):

Total Sequestered $CO_2 = GP \times \sum_i (SeqCO_2 \times Trees)_i$ **[Equation 8]**

Where:
- GP = Growing period for all trees, expressed in years (20)
- $SeqCO_2$ = Annual CO_2 accumulation per tree for species class [$MTCO_2$/tree]
- Trees = Number of net new trees of broad species class
- i = Summation index for broad species class

The Project's planting area of native plants, shrubs, perennials, and ground-cover was modeled using the "grassland" category which is the most applicable vegetation category for the Project. The "grassland" category represents the lowest non-zero carbon sequestration value of the available categories in CalEEMod,[56] thus providing for a conservative estimate of the Project's carbon sequestration from the net addition of native plants, shrubs, perennials, and ground-cover to the Project Site. The Project will provide 137 canopy trees; however, the exact type and species are not known at this Project planning stage. According to the CalEEMod User's Guide, if specific tree types are not known, the "miscellaneous" tree type should be used.[57] Therefore, therefore, the "miscellaneous" tree type option was used per the CalEEMod User's Guide.

The effects of carbon sequestration from canopy trees assumes the IPCC active growing period of 20 years. Accumulation of carbon in biomass decreases as the trees age and would eventually be offset by clipping, pruning, and tree death. Therefore, GHG reductions from carbon sequestration are only applied to the first 20 years of the project's operation. The estimated annual carbon sequestration rate is provided in **Table 16**. Detailed emissions calculations are provided in **Appendix B**.

TABLE 16
CARBON SEQUESTRATION FROM VEGETATION

Reduction Source	Carbon Sequestered ($MTCO_2e$) [a]
Total GHG Reduction	98
Yearly GHG Reduction (20-year growing period) [b]	**5**

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

[b] Annual CO_2 sequestration applied over a 20-year period beginning in the Project's first full operational year.

SOURCE: ESA 2017.

Summary of Project GHG Emissions

A summary of the GHG emissions under the project is provided in **Table 17**.

56 Grassland applies to all grassland as well as woody vegetation and other non-grass vegetation such as herbs and brushes, which are consistent with the types of vegetation (native plants, shrubs, perennials, and ground-cover) proposed for this Project. Cropland and forest have higher carbon sequestration values, but are also less applicable to this Project.

57 California Air Resources Board, CalEEMod User's Guide, Appendix A, Section 11.2, November 2017, http://caleemod.com/. Accessed December 2017.

TABLE 17
SUMMARY OF ANNUAL GHG EMISSIONS

	Annual GHG Emissions ($MTCO_2e$/year)								
Year	Construc-tion	Electricity	Natural Gas	Mobile	Waste	Water and Waste Water	Area and Stationary	CO_2 Seq. from Net New Vegetation [a]	Total [b]
Const Yr 1	1,262	–	–	–	–	–	–	–	1,262
Const Yr 2	1,678	–	–	–	–	–	–	–	1,678
Const Yr 3	2,666	–	–	–	–	–	–	–	2,666
Const Yr 4 [c]	1,507	781	243	2,895	94	106	14	–	5,640
2023	–	1,875	582	6,716	226	254	33	(5)	9,681
2024	–	1,680	582	6,546	226	234	33	(5)	9,296
2025	–	1,680	582	6,346	226	234	33	(5)	9,096
2026	–	1,680	582	6,178	226	234	33	(5)	8,928
2027	–	1,539	582	6,029	226	218	33	(5)	8,622
2028	–	1,539	582	5,899	226	218	33	(5)	8,492
2029	–	1,539	582	5,785	226	218	33	(5)	8,378
2030	–	1,401	582	5,686	226	204	33	(5)	8,127
2031	–	1,401	582	5,604	226	204	33	(5)	8,045
2032	–	1,401	582	5,529	226	204	33	(5)	7,970
2033	–	1,401	582	5,463	226	204	33	(5)	7,904
2034	–	1,401	582	5,408	226	204	33	(5)	7,849
2035	–	1,401	582	5,363	226	204	33	(5)	7,804
2036	–	1,401	582	5,330	226	204	33	(5)	7,771
2037	–	1,401	582	5,302	226	204	33	(5)	7,743
2038	–	1,401	582	5,281	226	204	33	(5)	7,722
2039	–	1,401	582	5,266	226	204	33	(5)	7,707
2040	–	1,401	582	5,255	226	204	33	(5)	7,696
2041	–	1,401	582	5,247	226	204	33	(5)	7,688
2042	–	1,401	582	5,243	226	204	33	(5)	7,684
2043	–	1,401	582	5,242	226	204	33	–	7,688
2044	–	1,401	582	5,242	226	204	33	–	7,688
2045	–	1,401	582	5,244	226	204	33	–	7,690
2046	–	1,401	582	5,249	226	204	33	–	7,695
2047	–	1,401	582	5,254	226	204	33	–	7,700
2048	–	1,401	582	5,261	226	204	33	–	7,707
2049	–	1,401	582	5,269	226	204	33	–	7,715
2050	–	1,401	582	5,279	226	204	33	–	7,725
2051	–	1,401	582	5,279	226	204	33	–	7,725
2052	–	1,401	582	5,279	226	204	33	–	7,725

[a] Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in **Appendix B**.

[b] The Project GHG emissions may be re-evaluated periodically to account for future reductions from the promulgation of state regulations, such as post-2025 model year vehicle emissions standards and post-2030 Renewables Portfolio Standard and other regulations that would reduce Project-related operational GHG emissions but cannot be quantified at this time.

[c] Based on the anticipated Project construction schedule, the Project could be operational during the last 5 months of year 2022. Therefore, estimated operational emissions associated with approximately 5 months of operational activity are included for year 2022.

SOURCE: ESA 2017.

3.3.3 Project GHG Emissions Offsets

Annual emissions of GHGs from the Project will incorporate GHG emission offsets as necessary to achieve a net zero increase in site GHG emissions, relative to the baseline annual GHG emissions, for the estimated Project lifetime. The Project proposes to meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through Project-based or community-based program measures that will reduce GHG emissions in the region. Examples of the types of Project-based or community-based program measures that could be implemented are as follows:

- Install solar photovoltaic panels on Project building rooftops based on available physical roof space taking into account space dedicated for rooftop amenities, open space/landscaping, decks/pool areas, and space required for rooftop equipment, such as heating, ventilation, and air conditioning units.
- Purchase certified green-power from the local utility provider to offset Project-related GHG emissions from electricity demand.
- Coordinating with property owners in the City of Los Angeles or in other cities or communities in California for the installation of rooftop solar photovoltaic panels in accordance with state and local permitting standards on existing buildings, parking structures, carports, or other facilities.
- Seek opportunities for offsetting GHG emissions from existing sources in the City of Los Angeles or in other cities or communities in California. Examples include coordinating with local transportation agencies and property owners and establishing electric vehicle supply equipment (EVSE) at park-and-ride lots or other appropriate locations, coordinating with local transportation agencies and school districts and replacing diesel- or gasoline-fueled buses with less-polluting technologies such as compressed natural gas, electric, hybrid-electric, fuel cell, or other commercially available technologies, implementing methane capture and destruction programs at dairy farms, or other GHG emissions offset programs.
- Plant new drought-tolerant, high-carbon sequestering, and/or native trees of appropriate size and type at off-site locations such as parks in the City of Los Angeles or in other cities or communities in California, that would result in a net sequestration of CO_2 emissions.
- Purchase carbon credits from a reputable carbon market. Priority should be given to those credits generated within the City of Los Angeles, and in decreasing preference, credits generated within the region, in-state, and out-of-state.

Through implementation of the Project-based or community-based GHG reduction program, the Project will meet the requirement set forth in California Public Resources Code Section 21183 (c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG emissions. The acquisition of carbon credits as part of the Project-based or community-based GHG reduction program will serve to ensure that all projected additional GHG emissions are offset. If acquiring carbon credits, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits from a qualified GHG emissions broker (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to achieve a net zero increase in site GHG emissions. Consistent with SCAQMD's definition of the "life of

the project" for CEQA GHG purposes, provided in SCAQMD's Governing Board Agenda Item 31, December 5, 2008, the project would be required to offset emissions over a 30-year lifetime. The SCAQMD recommends that offsets should have a 30-year project life, should be real, quantifiable, verifiable, and surplus and will be considered in the following prioritized manner: (1) project design feature/on-site reduction measures; (2) off-site within the neighborhood; (3) off-site within the SCAQMD jurisdiction; (4) off-site within the State; (5) off-site out-of-State. The project would obtain offsets following this prioritization. The necessary offsets are summarized below in **Section 4.0**. Offsets are estimated for a project useful lifetime of 30 years, which is recommended as a presumed project lifetime per SCAQMD guidance.[58]

58 South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2. Accessed September 2017.

SECTION 4
Comparison of Project to Baseline Condition

Table 18 provides a summary of the determination of net additional GHG emissions comparing the existing site GHG emissions and the Project GHG emissions including the Project's total construction-related GHG emissions. Based on these GHG emissions estimates, the Project would not result in net additional contemporaneous GHG emissions compared to the baseline annual operational emissions at any time.

TABLE 18
EVALUATION OF NET GHG EMISSIONS FOR THE PROJECT

Year	Baseline Annual Operations	Project Total	Project GHG Reductions from Offsets [a]	Net Change from Baseline
Const Yr 1	0	1,262	(1,262)	0
Const Yr 2	0	1,678	(1,678)	0
Const Yr 3	0	2,666	(2,666)	0
Const Yr 4 [b]	195	5,640	(5,172)	0
2023	468	9,681	(9,213)	0
2024	468	9,296	(8,828)	0
2025	468	9,096	(8,628)	0
2026	468	8,928	(8,460)	0
2027	468	8,622	(8,154)	0
2028	468	8,492	(8,024)	0
2029	468	8,378	(7,910)	0
2030	468	8,127	(7,659)	0
2031	468	8,045	(7,577)	0
2032	468	7,970	(7,502)	0
2033	468	7,904	(7,436)	0
2034	468	7,849	(7,381)	0
2035	468	7,804	(7,336)	0
2036	468	7,771	(7,303)	0
2037	468	7,743	(7,275)	0
2038	468	7,722	(7,254)	0
2039	468	7,707	(7,239)	0
2040	468	7,696	(7,228)	0
2041	468	7,688	(7,220)	0
2042	468	7,684	(7,216)	0
2043	468	7,688	(7,220)	0
2044	468	7,688	(7,220)	0
2045	468	7,690	(7,222)	0

Year	Baseline Annual Operations	Project Total	Project GHG Reductions from Offsets [a]	Net Change from Baseline
2046	468	7,695	(7,227)	0
2047	468	7,700	(7,232)	0
2048	468	7,707	(7,239)	0
2049	468	7,715	(7,247)	0
2050	468	7,725	(7,257)	0
2051	468	7,725	(7,257)	0
2052	468	7,725	(7,257)	0

[a] The quantity of GHG emissions offsets may be re-evaluated periodically to account for future reductions from the promulgation of state regulations, such as post-2025 model year vehicle emissions standards and post-2030 Renewables Portfolio Standard and other regulations that would reduce Project-related operational GHG emissions but cannot be quantified at this time.

[b] Based on the anticipated Project construction schedule, the Project could be operational during the last 5 months of year 2022. Therefore, estimated operational emissions associated with approximately 5 months of operational activity are included for year 2022.

SOURCE: ESA 2017.

The Project will commit to implementing Project-based or community-based program measures, as discussed in the previous section, that will achieve no net increase in GHG emissions. As such, the Project would not result in net contemporaneous GHG emissions compared to the Baseline Condition, taking into account GHG Project-based or community-based program measures and offsets. Therefore, this analysis demonstrates that the Project meets the GHG emissions requirements of the "Jobs and Economic Improvement through Environmental Leadership Act" (Public Resources Code Section 21178 et seq.) and would result in no net GHG emissions.

Appendix A
Baseline Operational Emissions

ESA

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Year	CH4	N2O	CO2e
	25	*298*	
2017	2.60E-08	-	4.62E-04
2018	2.39E-08	-	4.52E-04
2021	1.90E-08	-	4.18E-04
2022	1.78E-08	-	4.06E-04
2023	1.66E-08	-	3.93E-04
2024	1.58E-08	-	3.83E-04
2025	1.50E-08	-	3.71E-04
2026	1.42E-08	-	3.61E-04
2027	1.36E-08	-	3.52E-04
2028	1.31E-08	-	3.45E-04
2029	1.26E-08	-	3.38E-04
2030	1.22E-08	-	3.32E-04
2031	1.18E-08	-	3.28E-04
2032	1.15E-08	-	3.23E-04
2033	1.12E-08	-	3.19E-04
2034	1.10E-08	-	3.16E-04
2035	1.08E-08	-	3.14E-04
2036	1.06E-08	-	3.12E-04
2037	1.04E-08	-	3.10E-04
2038	1.03E-08	-	3.09E-04
2039	1.02E-08	-	3.08E-04
2040	1.01E-08	-	3.07E-04
2041	1.00E-08	-	3.07E-04
2042	9.94E-09	-	3.07E-04
2043	9.89E-09	-	3.06E-04
2044	9.82E-09	-	3.07E-04
2045	9.76E-09	-	3.07E-04
2046	9.65E-09	-	3.07E-04
2047	9.61E-09	-	3.07E-04
2048	9.59E-09	-	3.08E-04
2049	9.56E-09	-	3.08E-04
2050	9.53E-09	-	3.09E-04
2051	9.53E-09	-	3.09E-04
2052	9.53E-09	-	3.09E-04

Source: EMFAC2014, South Coast Air Basin (Los Angeles County), "Emissions" (or "Burden") mode.

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Scenario	Year	VMT/year	GHG Emission Factors (metric tons/year) CO2	CH4	N2O	CO2e
			1	*25*	*298*	
Existing Uses	2017	859,940	397.04	0.02	-	397.6
5 Months Project	2022	7,252,246	2,942.82	0.13	-	2,946
	2023	17,405,390	6,827.35	0.29	-	6,835
	2024	17,405,390	6,654.31	0.27	-	6,661
	2025	17,405,390	6,451.28	0.26	-	6,458
	2026	17,405,390	6,280.88	0.25	-	6,287
	2027	17,405,390	6,129.47	0.24	-	6,135
	2028	17,405,390	5,997.54	0.23	-	6,003
	2029	17,405,390	5,881.53	0.22	-	5,887
	2030	17,405,390	5,780.77	0.21	-	5,786
	2031	17,405,390	5,698.14	0.21	-	5,703
	2032	17,405,390	5,621.31	0.20	-	5,626
	2033	17,405,390	5,555.06	0.20	-	5,560
	2034	17,405,390	5,499.02	0.19	-	5,504
	2035	17,405,390	5,452.89	0.19	-	5,458
	2036	17,405,390	5,419.47	0.18	-	5,424
	2037	17,405,390	5,391.21	0.18	-	5,396
	2038	17,405,390	5,369.98	0.18	-	5,374
	2039	17,405,390	5,354.33	0.18	-	5,359
	2040	17,405,390	5,343.39	0.18	-	5,348
	2041	17,405,390	5,334.90	0.17	-	5,339
	2042	17,405,390	5,330.99	0.17	-	5,335
	2043	17,405,390	5,329.98	0.17	-	5,334
	2044	17,405,390	5,330.72	0.17	-	5,335
	2045	17,405,390	5,332.83	0.17	-	5,337
	2046	17,405,390	5,337.19	0.17	-	5,341
	2047	17,405,390	5,342.95	0.17	-	5,347
	2048	17,405,390	5,349.74	0.17	-	5,354
	2049	17,405,390	5,357.37	0.17	-	5,362
	2050	17,405,390	5,367.89	0.17	-	5,372
	2051	17,405,390	5,367.89	0.17	-	5,372
	2052	17,405,390	5,367.89	0.17	-	5,372

Source: ESA 2017

1045 Olive - Existing

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	14.65	1000sqft	0.62	14,653.00	0
Parking Lot	5.95	1000sqft	0.14	5,952.00	0
Strip Mall	5.17	1000sqft	0.20	5,171.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2017
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1132	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity: LADWP, 2016 Final Power Integrated Resource Plan, Table C-1 Year 2015, (December 2016).

Land Use - Existing buildings (15,827 sf is currently vacant and not included).

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Energy Use - Using Historical Data: Y

Water And Wastewater - No landscaping at existing uses; therefore, outdoor water is set at 0 gal/yr.

Solid Waste - CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1. Based on 27 employees and 8.2 lbs/day/employee. Assigned to the retail use.

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.88	0.88
tblLandUse	LotAcreage	0.34	0.62
tblLandUse	LotAcreage	0.12	0.20
tblProjectCharacteristics	CO2IntensityFactor	1227.89	1132
tblSolidWaste	SolidWasteGenerationRate	5.43	40.00
tblSolidWaste	SolidWasteGenerationRate	13.77	0.00
tblWater	OutdoorWaterUseRate	234,714.32	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Energy	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	80.7525	80.7525	2.0600e-003	4.5000e-004	80.9366
Waste						0.0000	0.0000		0.0000	0.0000	8.1196	0.0000	8.1196	0.4799	0.0000	20.1161
Water						0.0000	0.0000		0.0000	0.0000	1.1963	25.2108	26.4071	0.1235	3.0300e-003	30.3994

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Energy	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	80.7525	80.7525	2.0600e-003	4.5000e-004	80.9366
Waste						0.0000	0.0000		0.0000	0.0000	1.9487	0.0000	1.9487	0.1152	0.0000	4.8279
Water						0.0000	0.0000		0.0000	0.0000	1.1963	25.2108	26.4071	0.1235	3.0300e-003	30.3994

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.4370	79.4370	2.0400e-003	4.2000e-004	79.6134
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.4370	79.4370	2.0400e-003	4.2000e-004	79.6134
NaturalGas Mitigated	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3154	1.3154	3.0000e-005	2.0000e-005	1.3233
NaturalGas Unmitigated	1.3000e-004	1.2100e-003	1.0200e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3154	1.3154	3.0000e-005	2.0000e-005	1.3233

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	9411.22	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5022	0.5022	1.0000e-005	1.0000e-005	0.5052
Unrefrigerated Warehouse-No Rail	15239.1	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8132	0.8132	2.0000e-005	1.0000e-005	0.8181
Total		**1.3000e-004**	**1.2100e-003**	**1.0200e-003**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3154**	**1.3154**	**3.0000e-005**	**2.0000e-005**	**1.3233**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	9411.22	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5022	0.5022	1.0000e-005	1.0000e-005	0.5052
Unrefrigerated Warehouse-No Rail	15239.1	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8132	0.8132	2.0000e-005	1.0000e-005	0.8181
Total		**1.3000e-004**	**1.2100e-003**	**1.0200e-003**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**1.3154**	**1.3154**	**3.0000e-005**	**2.0000e-005**	**1.3233**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	5213.95	2.6772	7.0000e-005	1.0000e-005	2.6831
Strip Mall	82529.2	42.3760	1.0900e-003	2.2000e-004	42.4700
Unrefrigerated Warehouse-No Rail	66964.2	34.3839	8.8000e-004	1.8000e-004	34.4602
Total		**79.4370**	**2.0400e-003**	**4.1000e-004**	**79.6134**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	5213.95	2.6772	7.0000e-005	1.0000e-005	2.6831
Strip Mall	82529.2	42.3760	1.0900e-003	2.2000e-004	42.4700
Unrefrigerated Warehouse-No Rail	66964.2	34.3839	8.8000e-004	1.8000e-004	34.4602
Total		**79.4370**	**2.0400e-003**	**4.1000e-004**	**79.6134**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Unmitigated	0.0813	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004

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	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0720					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Total	**0.0813**	**0.0000**	**3.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**6.4000e-004**	**0.0000**	**0.0000**	**6.8000e-004**

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	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0720					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.4000e-004	6.4000e-004	0.0000	0.0000	6.8000e-004
Total	**0.0813**	**0.0000**	**3.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**6.4000e-004**	**0.0000**	**0.0000**	**6.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4071	0.1235	3.0300e-003	30.3994
Unmitigated	26.4071	0.1235	3.0300e-003	30.3994

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.382955 / 0	2.6819	0.0125	3.1000e-004	3.0873
Unrefrigerated Warehouse-No	3.38781 / 0	23.7252	0.1110	2.7300e-003	27.3120
Total		**26.4071**	**0.1235**	**3.0400e-003**	**30.3994**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.382955 / 0	2.6819	0.0125	3.1000e-004	3.0873
Unrefrigerated Warehouse-No	3.38781 / 0	23.7252	0.1110	2.7300e-003	27.3120
Total		**26.4071**	**0.1235**	**3.0400e-003**	**30.3994**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.9487	0.1152	0.0000	4.8279
Unmitigated	8.1196	0.4799	0.0000	20.1161

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	40	8.1196	0.4799	0.0000	20.1161
Unrefrigerated Warehouse-No	0	0.0000	0.0000	0.0000	0.0000
Total		**8.1196**	**0.4799**	**0.0000**	**20.1161**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	9.6	1.9487	0.1152	0.0000	4.8279
Unrefrigerated Warehouse-No	0	0.0000	0.0000	0.0000	0.0000
Total		**1.9487**	**0.1152**	**0.0000**	**4.8279**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B
Project Construction and Operational Emissions

ESA

B-1 Project Construction Emissions

1045 Olive Street Project
Air Quality and Greenhouse Gas Assessment

last update: 11/28/2017

Table 1: CalEEMod Land Use Inputs

Land Use	CalEEMod Land Use Type	Units [a]			
Existing Uses to be Demolished/Removed					
Four Commercial Buildings	General Office	35.65	gross ksf	35,651	gross sf
Paved Parking Area	Parking Lot	5.95	gross ksf	5,952	gross sf
Total Existing Uses to be Demolished/Removed				***41,603***	***gross sf***
Project					
High Rise	High-Rise Apartment	794	DU	739,246	sf
Commerical Uses	General Office	12.50	ksf	12,504	sf
Total Floor Area		751.78	ksf	751,777	sf
Open Space					
Publically Accessible Plaza Area	City Park	2.73	ksf	2,728	sf
Common OS (Exterior) for Project Residents	General Office	37.93	ksf	37,927	sf
Common OS (Interior) for Project Residents	General Office	23.03	ksf	23,025	sf
Private Balcony Space for Project Residents	Other Non-asphalt surfaces	39.70	ksf	39,700	sf
Total Open Space		103.38	ksf	103,380	sf
Total Parking	Enclosed Parking with Elevator	891	spaces	426,458	sf
Bicycle Parking	N/A	891	bicyle spaces		
Trees	N/A	130	(with just over 0.2 acres of planting area)		
Lot Area		0.96	acres		

Notes:

a. Square footage values may be rounded up to provide a conservative analysis.

Table 2: Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs

CalEEMod Construction Phase	Start Date	End Date	No. Work Days	Site Prep/ Demo (CY)	Truck Capacity (CY)	Truck Total One-Way Trips	Max Daily One-Way Trips	Calculated in EMFAC2014 (outside of CalEEMod)					Concrete Mat Volume (CY)	Concrete Truck Capacity (CY)	Concrete Truck Total One-Way Trips	Concrete Truck Daily One-Way Trips	Vendor One-Way Trips/Max Day [a]	Worker One-Way Trips/Max Day [b]
								Soil/ Material Export (CY)	Soil/ Material Import (CY)	Soil/ Material Haul Truck Capacity (CY)	Soil/ Material Haul Truck Total One-Way Trips	Max Daily One-Way Trips						
Project																	6	12
Demolition	4/1/2019	4/30/2019	26	3,410	10	680	26											38
Site Preparation	4/1/2019	4/30/2019	26					520	-	20	52	30					6	132
Grading/Excavation	4/1/2019	7/31/2019	105					80,000	-	14	11,429	500					6	50
Drainage/Utilities/Trenching	7/1/2019	9/30/2019	79															350
Foundations	6/1/2019	12/31/2021	810															350
Continuous Concrete Pour (approx. 1 day during Foundations)	1 day		1										12,148	10	1,215	1,215		
(Calculated in EMFAC2014 - outside of CalEEMod)																	174	738
Building Construction	7/1/2020	9/30/2022	705															50
Paving	5/1/2022	6/30/2022	53															62
Architectural Coating	10/1/2020	9/30/2022	626															

Notes:

a. Vendor trucks trips for demolition, grading, and drainage/utilities/trenching represent water trucks. Vendor truck trips for building construction are based on CalEEMod defaults.

b. Worker trips provided by Project contractor representative.

Sources: O.K.O Engineering, Nov 2016; AC Martin Partners, June 2017; Carter Romanek, May 2017; Shlemmer Algaze Associates, December 2016.

last updated: 11/28/2017

Table 3: Off-Road Heavy-Duty Construction Equipment

ıction Phase	Heavy-Duty Equipment	No. of Heavy-Duty Equipment	Max Expected Hours of Operation/Day Per Equipment	Max Expected Hours of Operation/Week Per Equipment	Emissions Tier Rating	Notes/Comments
Demolition	Air Compressor	1	10	60		Electric
	Concrete/Industrial Saws	1	10	60	Tier 4 Final	
	Jackhammers	1	10	60		(powered by air compressor)
	Loaders	1	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Site Preparation	Concrete/Industrial Saws	1	10	60	Tier 4 Final	
	Excavator	1	10	60	Tier 4 Final	
Grading/Excavation	Backhoes	1	10	60	Tier 4 Final	
	Bore/Drill Rigs	1	10	60	Tier 4 Final	
	Excavators	2	10	60	Tier 4 Final	
	Loaders	1	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Drainage/Utilities/Trenching	Backhoes	1	10	60	Tier 4 Final	
	Sweeper/Srubbers	1	10	60	Tier 4 Final	
					Tier 4 Final	
Foundations	Backhoes	1	10	60	Tier 4 Final	
	Cranes (Electric)	1	6	36		Electric
	Forklifts	1	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Building Construction	Cranes (Electric)	2	6	36		Electric
	Forklifts	2	10	60	Tier 4 Final	
	Sweeper/Scrubbers	1	6	36	Tier 4 Final	
Paving	Backhoes	1	10	60	Tier 4 Final	
	Signal Boards	1	10	60		
	Paver	1	10	60	Tier 4 Final	
Architectural Coating	Air Compressor	1	10	60		Electric
	Forklifts	1	10	60	Tier 4 Final	

Sources: O.K.O Engineering, Nov 2016; AC Martin Partners, June 2017; Carter Romanek, May 2017; Shlemmer Algaze Associates, December 2016.

Construction Assumptions - Demolition

Description: Surface parking and two-story multi-family structure

Demolition Schedule			**Notes**
Start Date	4/1/2019		
End Date	4/30/2019		
Work Days	26		

Demolition Quantities			**Notes**
Land Use	**Amount**	***Units***	
Residential Building	35.7	*KSF*	Estimate from Google Earth, two story multi-family
Hardscape Demo	6.0	*KSF*	Information from Client

Hardscape Demolition Volume			**Notes**
Total Area(KSF)	6.0		
Thickness (ft)	0.5	*feet*	
Debris Volume (CY)	110	*(rounded, estimated)*	

Building Demolition Volume			**Notes**
Total Area (KSF)	35.7		
Floor Height (ft)	10		Assumed
Building Volume (ft3)	356,510		
Building Volume (CY)	13,200		
Debris Volume (CY)	3,300	*(rounded, estimated)*	Rounded, 1 CY building volume = 0.25 CY waste volume

Total Debris (CY)	3,410			
Effective Building Floor Area (KSF)	**37.0**		<-------	**ENTER VALUE INTO CALEEMOD**
Truck Size (CY)	10			
Total Trucks	340	*total trucks*		
Daily Trucks	10	*trucks/day*		
Total One-Way Trips	**680**	*total trips*	<-------	**ENTER VALUE INTO CALEEMOD**

1045 Olive Street Project
On-Road Soil/Material Haul Truck Regional Emissions

On-Road Truck Regional Running Emissions

Construction Phase	Source	Year	Daily One-Way Truck Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Running Emissions Factor (grams/mile) CO2e	Regional Emissions CO2e (metric tons/year)
Site Preparation	T7 Single Construction	2019	30	1.73	10	23.6	1,751.46	2
Grading/Excavation	T7 Single Construction	2019	500	22.86	10	21	1,751.46	420
Concrete Pour (1-day)	T7 Single Construction	2019	1215	1.00	23	25	1,751.46	53

On-Road Truck Idling Emissions

Construction Phase	Source	Year	Daily Number of Trucks	Haul Days per Year (days/year)	Work Hours per Day (hours/day)	Idling Time per Truck (minutes)	Idling Emissions Factor (grams/hour) CO2e	Regional Emissions CO2e (metric tons/year)
Site Preparation	T7 Single Construction	2019	30	1.73	10	15	6,555.76	0.1
Grading/Excavation	T7 Single Construction	2019	500	22.86	10	15	6,555.76	19
Concrete Pour (1-day)	T7 Single Construction	2019	1215	1.00	23	20	6,555.76	3
							Total	**497**

1045 Olive Street Project
On-Road Truck Emission Factors (Aggregate Model Year, Aggregate Speeds)

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Years: 2017, 2018, 2019, 2020, 2021, 2022, 2023
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/hour for IDLEX, RESTL and DIURN

	1	2	3	4	5	22	23	24	25	26	27
						GREENHOUSE GASES					
Region	**CalYr**	**VehClass**	**MdlYr**	**Speed**	**Fuel**	**CO2_RUNEX**	**CO2_IDLEX**	**CH4_RUNEX**	**CH4_IDLEX**	**CO2e_RUNEX**	**CO2e_IDLEX**
Los Angeles County (SC)	2019	T7 single construction	Aggregated	Aggregated	All	1,751.30	6,553.65	0.0065	0.0842	1,751.46	6,555.76

Source: California Air Resources Board, EMFAC2014, http://www.arb.ca.gov/emfac/2014/. Accessed September 2017.

1045 Olive Street Project - Construction - Los Angeles-South Coast County, Annual

1045 Olive Street Project - Construction

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,246.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).
Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Construction Phase - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

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Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Off-road Equipment - Refer to "Off-Road Heavy-Duty Construction Equipment" provided in this Appendix.

Trips and VMT - Refer to "Construction Schedule and California Emissions Estimator Model (CalEEMod) Inputs" provided in this Appendix. Soil/material haul trucks and concrete pour trucks (1-day) calculated outside CalEEMod using EMFAC.
Demolition - Demo Debris: 3,410 cy (estimated equivalent to 37,000 sf building floor area)

Grading - Site Prep: 520 cy export; Grading: 80,000 cy export.

Construction Off-road Equipment Mitigation - Electric cranes and air compressors; Tier 4 equipment (>50 hp); Water/Stablizers on exposed and unpaved areas (61% PM control); Limit vehicle speeds to 15 mph on unpaved roads.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	626.00
tblConstructionPhase	NumDays	100.00	810.00
tblConstructionPhase	NumDays	100.00	705.00
tblConstructionPhase	NumDays	10.00	26.00
tblConstructionPhase	NumDays	2.00	105.00
tblConstructionPhase	NumDays	5.00	52.00
tblConstructionPhase	NumDays	1.00	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	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	0.96
tblGrading	AcresOfGrading	0.00	0.96
tblGrading	MaterialExported	0.00	80,000.00
tblGrading	MaterialExported	0.00	520.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	356,400.00.	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,246.00
tblLandUse	LotAcreage	0.53	0.10

tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	8.02	0.10
tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00

tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblTripsAndVMT	HaulingTripNumber	168.00	680.00
tblTripsAndVMT	HaulingTripNumber	65.00	0.00
tblTripsAndVMT	HaulingTripNumber	10,000.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	174.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	38.00
tblTripsAndVMT	WorkerTripNumber	15.00	132.00
tblTripsAndVMT	WorkerTripNumber	793.00	350.00
tblTripsAndVMT	WorkerTripNumber	5.00	50.00
tblTripsAndVMT	WorkerTripNumber	793.00	738.00
tblTripsAndVMT	WorkerTripNumber	159.00	62.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4648	2.8671	4.0525	8.8900e-003	0.4892	0.1534	0.6426	0.1273	0.1419	0.2693	0.0000	803.0712	803.0712	0.1146	0.0000	805.9348
2020	1.2027	4.7049	7.1083	0.0199	1.3544	0.1796	1.5340	0.3617	0.1661	0.5278	0.0000	1,812.3536	1,812.3536	0.1483	0.0000	1,816.0617
2021	2.6120	7.1726	10.5208	0.0318	2.1437	0.2385	2.3822	0.5733	0.2216	0.7949	0.0000	2,907.0297	2,907.0297	0.2241	0.0000	2,912.6311
2022	1.6444	3.9603	5.3584	0.0179	1.1682	0.1062	1.2743	0.3132	0.0991	0.4123	0.0000	1,643.9388	1,643.9388	0.1194	0.0000	1,646.9243
Maximum	**2.6120**	**7.1726**	**10.5208**	**0.0318**	**2.1437**	**0.2385**	**2.3822**	**0.5733**	**0.2216**	**0.7949**	**0.0000**	**2,907.0297**	**2,907.0297**	**0.2241**	**0.0000**	**2,912.6311**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2576	0.7366	4.0985	8.8900e-003	0.4747	9.9600e-003	0.4847	0.1252	9.6100e-003	0.1348	0.0000	761.9778	761.9778	0.1028	0.0000	764.5484
2020	0.9538	2.2405	6.4802	0.0199	1.3544	0.0206	1.3750	0.3617	0.0194	0.3812	0.0000	1,675.7834	1,675.7834	0.1083	0.0000	1,678.4906
2021	2.2548	3.7203	9.3526	0.0318	2.1437	0.0257	2.1694	0.5733	0.0241	0.5975	0.0000	2,661.9472	2,661.9472	0.1618	0.0000	2,665.9912
2022	1.4770	2.3818	4.7019	0.0179	1.1682	0.0142	1.1824	0.3132	0.0134	0.3266	0.0000	1,505.1783	1,505.1783	0.0874	0.0000	1,507.3635
Maximum	**2.2548**	**3.7203**	**9.3526**	**0.0318**	**2.1437**	**0.0257**	**2.1694**	**0.5733**	**0.0241**	**0.5975**	**0.0000**	**2,661.9472**	**2,661.9472**	**0.1618**	**0.0000**	**2,665.9912**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**16.55**	**51.46**	**8.90**	**0.00**	**0.28**	**89.61**	**10.66**	**0.16**	**89.41**	**28.16**	**0.00**	**7.84**	**7.84**	**24.09**	**0.00**	**7.87**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2019	6-30-2019	1.4913	0.4122

2	7-1-2019	9-30-2019	1.2085	0.3750
3	10-1-2019	12-31-2019	0.6117	0.1914
4	1-1-2020	3-31-2020	0.5493	0.1774
5	4-1-2020	6-30-2020	0.5376	0.1657
6	7-1-2020	9-30-2020	2.0914	1.2047
7	10-1-2020	12-31-2020	2.6906	1.6112
8	1-1-2021	3-31-2021	2.4167	1.4779
9	4-1-2021	6-30-2021	2.4082	1.4589
10	7-1-2021	9-30-2021	2.4347	1.4749
11	10-1-2021	12-31-2021	2.4705	1.5107
12	1-1-2022	3-31-2022	1.7962	1.2596
13	4-1-2022	6-30-2022	1.9515	1.2901
14	7-1-2022	9-30-2022	1.8133	1.2648
		Highest	2.6906	1.6112

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	4/1/2019	4/30/2019	6	26	
2	Site Preparation	Site Preparation	4/1/2019	4/30/2019	6	26	
3	Grading	Grading	4/1/2019	7/31/2019	6	105	
4	Foundations/Concrete Pour	Building Construction	6/1/2019	12/31/2021	6	810	
5	Drainage/Utilities/Trenching	Trenching	7/1/2019	9/30/2019	6	79	
6	Building Construction	Building Construction	7/1/2020	9/30/2022	6	705	
7	Architectural Coating	Architectural Coating	10/1/2020	9/30/2022	6	626	
8	Paving	Paving	5/1/2022	6/30/2022	6	52	

Acres of Grading (Site Preparation Phase): 0.96

Acres of Grading (Grading Phase): 0.96

Acres of Paving: 0.2

Residential Indoor: 1,496,973; Residential Outdoor: 498,991; Non-Residential Indoor: 110,184; Non-Residential Outdoor: 36,728; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	10.00	78	0.48
Demolition	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Sweepers/Scrubbers	1	6.00	64	0.46
Demolition	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Site Preparation	Concrete/Industrial Saws	1	10.00	81	0.73
Site Preparation	Excavators	1	10.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Bore/Drill Rigs	1	10.00	221	0.50
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Excavators	2	10.00	158	0.38
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Sweepers/Scrubbers	1	6.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Forklifts	2	10.00	89	0.20
Building Construction	Sweepers/Scrubbers	1	6.00	64	0.46
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	1	10.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Signal Boards	1	10.00	6	0.82
Paving	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Architectural Coating	Air Compressors	1	10.00	78	0.48
Architectural Coating	Forklifts	1	10.00	89	0.20

Foundations/Concrete Pour	Cranes	1	6.00	231	0.29
Foundations/Concrete Pour	Forklifts	1	10.00	89	0.20
Foundations/Concrete Pour	Sweepers/Scrubbers	1	6.00	64	0.46
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	10.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	10.00	97	0.37

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	12.00	6.00	680.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	132.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	738.00	174.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	62.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	4	350.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	2	50.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0182	0.0000	0.0182	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1602	0.1570	2.4000e-004		0.0110	0.0110		0.0107	0.0107	0.0000	21.0285	21.0285	3.2200e-003	0.0000	21.1090
Total	**0.0199**	**0.1602**	**0.1570**	**2.4000e-004**	**0.0182**	**0.0110**	**0.0292**	**2.7600e-003**	**0.0107**	**0.0134**	**0.0000**	**21.0285**	**21.0285**	**3.2200e-003**	**0.0000**	**21.1090**

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	3.2300e-003	0.1076	0.0229	2.7000e-004	5.8400e-003	3.9000e-004	6.2300e-003	1.6000e-003	3.7000e-004	1.9700e-003	0.0000	26.4753	26.4753	1.8700e-003	0.0000	26.5220
Vendor	3.3000e-004	9.2100e-003	2.5200e-003	2.0000e-005	4.9000e-004	6.0000e-005	5.5000e-004	1.4000e-004	6.0000e-005	2.0000e-004	0.0000	1.9505	1.9505	1.3000e-004	0.0000	1.9538
Worker	7.8000e-004	6.5000e-004	7.0800e-003	2.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.7000e-004	0.0000	1.6432	1.6432	6.0000e-005	0.0000	1.6447
Total	**4.3400e-003**	**0.1175**	**0.0325**	**3.1000e-004**	**8.0400e-003**	**4.7000e-004**	**8.5000e-003**	**2.1900e-003**	**4.4000e-004**	**2.6400e-003**	**0.0000**	**30.0690**	**30.0690**	**2.0600e-003**	**0.0000**	**30.1204**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.1000e-003	0.0000	7.1000e-003	1.0800e-003	0.0000	1.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2400e-003	0.0210	0.1195	2.4000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	15.4965	15.4965	2.7500e-003	0.0000	15.5653
Total	**2.2400e-003**	**0.0210**	**0.1195**	**2.4000e-004**	**7.1000e-003**	**2.6000e-004**	**7.3600e-003**	**1.0800e-003**	**2.6000e-004**	**1.3400e-003**	**0.0000**	**15.4965**	**15.4965**	**2.7500e-003**	**0.0000**	**15.5653**

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	3.2300e-003	0.1076	0.0229	2.7000e-004	5.8400e-003	3.9000e-004	6.2300e-003	1.6000e-003	3.7000e-004	1.9700e-003	0.0000	26.4753	26.4753	1.8700e-003	0.0000	26.5220
Vendor	3.3000e-004	9.2100e-003	2.5200e-003	2.0000e-005	4.9000e-004	6.0000e-005	5.5000e-004	1.4000e-004	6.0000e-005	2.0000e-004	0.0000	1.9505	1.9505	1.3000e-004	0.0000	1.9538
Worker	7.8000e-004	6.5000e-004	7.0800e-003	2.0000e-005	1.7100e-003	2.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.7000e-004	0.0000	1.6432	1.6432	6.0000e-005	0.0000	1.6447
Total	**4.3400e-003**	**0.1175**	**0.0325**	**3.1000e-004**	**8.0400e-003**	**4.7000e-004**	**8.5000e-003**	**2.1900e-003**	**4.4000e-004**	**2.6400e-003**	**0.0000**	**30.0690**	**30.0690**	**2.0600e-003**	**0.0000**	**30.1204**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4000e-004	0.0000	5.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1019	0.1132	1.9000e-004		5.8300e-003	5.8300e-003		5.6600e-003	5.6600e-003	0.0000	16.2718	16.2718	3.0000e-003	0.0000	16.3468
Total	**0.0117**	**0.1019**	**0.1132**	**1.9000e-004**	**5.4000e-004**	**5.8300e-003**	**6.3700e-003**	**6.0000e-005**	**5.6600e-003**	**5.7200e-003**	**0.0000**	**16.2718**	**16.2718**	**3.0000e-003**	**0.0000**	**16.3468**

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	2.4700e-003	2.0600e-003	0.0224	6.0000e-005	5.4100e-003	5.0000e-005	5.4600e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2036	5.2036	1.8000e-004	0.0000	5.2081
Total	**2.4700e-003**	**2.0600e-003**	**0.0224**	**6.0000e-005**	**5.4100e-003**	**5.0000e-005**	**5.4600e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2036**	**5.2036**	**1.8000e-004**	**0.0000**	**5.2081**

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					2.1000e-004	0.0000	2.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	8.8800e-003	0.1264	1.9000e-004		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	16.2718	16.2718	3.0000e-003	0.0000	16.3468
Total	**2.0500e-003**	**8.8800e-003**	**0.1264**	**1.9000e-004**	**2.1000e-004**	**2.7000e-004**	**4.8000e-004**	**2.0000e-005**	**2.7000e-004**	**2.9000e-004**	**0.0000**	**16.2718**	**16.2718**	**3.0000e-003**	**0.0000**	**16.3468**

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	2.4700e-003	2.0600e-003	0.0224	6.0000e-005	5.4100e-003	5.0000e-005	5.4600e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2036	5.2036	1.8000e-004	0.0000	5.2081
Total	**2.4700e-003**	**2.0600e-003**	**0.0224**	**6.0000e-005**	**5.4100e-003**	**5.0000e-005**	**5.4600e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2036**	**5.2036**	**1.8000e-004**	**0.0000**	**5.2081**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0300e-003	0.0000	5.0300e-003	7.4000e-004	0.0000	7.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0944	0.9986	0.9448	1.8000e-003		0.0522	0.0522		0.0481	0.0481	0.0000	161.6695	161.6695	0.0512	0.0000	162.9483
Total	**0.0944**	**0.9986**	**0.9448**	**1.8000e-003**	**5.0300e-003**	**0.0522**	**0.0573**	**7.4000e-004**	**0.0481**	**0.0488**	**0.0000**	**161.6695**	**161.6695**	**0.0512**	**0.0000**	**162.9483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3300e-003	0.0372	0.0102	8.0000e-005	1.9800e-003	2.3000e-004	2.2200e-003	5.7000e-004	2.2000e-004	8.0000e-004	0.0000	7.8770	7.8770	5.3000e-004	0.0000	7.8902
Worker	0.0347	0.0289	0.3146	8.1000e-004	0.0759	6.7000e-004	0.0766	0.0202	6.2000e-004	0.0208	0.0000	72.9977	72.9977	2.5100e-003	0.0000	73.0604
Total	**0.0360**	**0.0661**	**0.3248**	**8.9000e-004**	**0.0779**	**9.0000e-004**	**0.0788**	**0.0207**	**8.4000e-004**	**0.0216**	**0.0000**	**80.8747**	**80.8747**	**3.0400e-003**	**0.0000**	**80.9506**

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					1.9600e-003	0.0000	1.9600e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0235	0.1470	1.1787	1.8000e-003		2.9600e-003	2.9600e-003		2.9600e-003	2.9600e-003	0.0000	161.6693	161.6693	0.0512	0.0000	162.9481
Total	**0.0235**	**0.1470**	**1.1787**	**1.8000e-003**	**1.9600e-003**	**2.9600e-003**	**4.9200e-003**	**2.9000e-004**	**2.9600e-003**	**3.2500e-003**	**0.0000**	**161.6693**	**161.6693**	**0.0512**	**0.0000**	**162.9481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3300e-003	0.0372	0.0102	8.0000e-005	1.9800e-003	2.3000e-004	2.2200e-003	5.7000e-004	2.2000e-004	8.0000e-004	0.0000	7.8770	7.8770	5.3000e-004	0.0000	7.8902
Worker	0.0347	0.0289	0.3146	8.1000e-004	0.0759	6.7000e-004	0.0766	0.0202	6.2000e-004	0.0208	0.0000	72.9977	72.9977	2.5100e-003	0.0000	73.0604
Total	**0.0360**	**0.0661**	**0.3248**	**8.9000e-004**	**0.0779**	**9.0000e-004**	**0.0788**	**0.0207**	**8.4000e-004**	**0.0216**	**0.0000**	**80.8747**	**80.8747**	**3.0400e-003**	**0.0000**	**80.9506**

3.5 Foundations/Concrete Pour - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0991	1.0130	0.6944	1.1000e-003		0.0618	0.0618		0.0568	0.0568	0.0000	98.8387	98.8387	0.0313	0.0000	99.6205
Total	**0.0991**	**1.0130**	**0.6944**	**1.1000e-003**		**0.0618**	**0.0618**		**0.0568**	**0.0568**	**0.0000**	**98.8387**	**98.8387**	**0.0313**	**0.0000**	**99.6205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1604	0.1337	1.4539	3.7400e-003	0.3509	3.0900e-003	0.3540	0.0932	2.8400e-003	0.0961	0.0000	337.3377	337.3377	0.0116	0.0000	337.6277
Total	**0.1604**	**0.1337**	**1.4539**	**3.7400e-003**	**0.3509**	**3.0900e-003**	**0.3540**	**0.0932**	**2.8400e-003**	**0.0961**	**0.0000**	**337.3377**	**337.3377**	**0.0116**	**0.0000**	**337.6277**

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	0.0108	0.1258	0.5326	1.1000e-003		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003	0.0000	63.2776	63.2776	0.0200	0.0000	63.7781
Total	**0.0108**	**0.1258**	**0.5326**	**1.1000e-003**		**1.1500e-003**	**1.1500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**63.2776**	**63.2776**	**0.0200**	**0.0000**	**63.7781**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1604	0.1337	1.4539	3.7400e-003	0.3509	3.0900e-003	0.3540	0.0932	2.8400e-003	0.0961	0.0000	337.3377	337.3377	0.0116	0.0000	337.6277
Total	**0.1604**	**0.1337**	**1.4539**	**3.7400e-003**	**0.3509**	**3.0900e-003**	**0.3540**	**0.0932**	**2.8400e-003**	**0.0961**	**0.0000**	**337.3377**	**337.3377**	**0.0116**	**0.0000**	**337.6277**

3.5 Foundations/Concrete Pour - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1546	1.5767	1.1621	1.8900e-003		0.0933	0.0933		0.0858	0.0858	0.0000	165.8893	165.8893	0.0537	0.0000	167.2306
Total	**0.1546**	**1.5767**	**1.1621**	**1.8900e-003**		**0.0933**	**0.0933**		**0.0858**	**0.0858**	**0.0000**	**165.8893**	**165.8893**	**0.0537**	**0.0000**	**167.2306**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2537	0.2045	2.2619	6.2100e-003	0.6021	5.1300e-003	0.6073	0.1599	4.7300e-003	0.1647	0.0000	561.2321	561.2321	0.0177	0.0000	561.6743
Total	**0.2537**	**0.2045**	**2.2619**	**6.2100e-003**	**0.6021**	**5.1300e-003**	**0.6073**	**0.1599**	**4.7300e-003**	**0.1647**	**0.0000**	**561.2321**	**561.2321**	**0.0177**	**0.0000**	**561.6743**

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	0.0185	0.2158	0.9138	1.8900e-003		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	106.1987	106.1987	0.0344	0.0000	107.0574
Total	**0.0185**	**0.2158**	**0.9138**	**1.8900e-003**		**1.9800e-003**	**1.9800e-003**		**1.9800e-003**	**1.9800e-003**	**0.0000**	**106.1987**	**106.1987**	**0.0344**	**0.0000**	**107.0574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2537	0.2045	2.2619	6.2100e-003	0.6021	5.1300e-003	0.6073	0.1599	4.7300e-003	0.1647	0.0000	561.2321	561.2321	0.0177	0.0000	561.6743
Total	**0.2537**	**0.2045**	**2.2619**	**6.2100e-003**	**0.6021**	**5.1300e-003**	**0.6073**	**0.1599**	**4.7300e-003**	**0.1647**	**0.0000**	**561.2321**	**561.2321**	**0.0177**	**0.0000**	**561.6743**

3.5 Foundations/Concrete Pour - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1372	1.4122	1.1324	1.8800e-003		0.0791	0.0791		0.0728	0.0728	0.0000	165.3789	165.3789	0.0535	0.0000	166.7161
Total	**0.1372**	**1.4122**	**1.1324**	**1.8800e-003**		**0.0791**	**0.0791**		**0.0728**	**0.0728**	**0.0000**	**165.3789**	**165.3789**	**0.0535**	**0.0000**	**166.7161**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2357	0.1835	2.0714	5.9900e-003	0.6002	4.9500e-003	0.6052	0.1594	4.5600e-003	0.1640	0.0000	541.6793	541.6793	0.0159	0.0000	542.0778
Total	**0.2357**	**0.1835**	**2.0714**	**5.9900e-003**	**0.6002**	**4.9500e-003**	**0.6052**	**0.1594**	**4.5600e-003**	**0.1640**	**0.0000**	**541.6793**	**541.6793**	**0.0159**	**0.0000**	**542.0778**

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	0.0184	0.2152	0.9109	1.8800e-003		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	105.8838	105.8838	0.0342	0.0000	106.7399
Total	**0.0184**	**0.2152**	**0.9109**	**1.8800e-003**		**1.9700e-003**	**1.9700e-003**		**1.9700e-003**	**1.9700e-003**	**0.0000**	**105.8838**	**105.8838**	**0.0342**	**0.0000**	**106.7399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2357	0.1835	2.0714	5.9900e-003	0.6002	4.9500e-003	0.6052	0.1594	4.5600e-003	0.1640	0.0000	541.6793	541.6793	0.0159	0.0000	542.0778
Total	**0.2357**	**0.1835**	**2.0714**	**5.9900e-003**	**0.6002**	**4.9500e-003**	**0.6052**	**0.1594**	**4.5600e-003**	**0.1640**	**0.0000**	**541.6793**	**541.6793**	**0.0159**	**0.0000**	**542.0778**

3.6 Drainage/Utilities/Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2378	0.2123	2.8000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	25.0473	25.0473	7.9200e-003	0.0000	25.2454
Total	**0.0256**	**0.2378**	**0.2123**	**2.8000e-004**		**0.0176**	**0.0176**		**0.0162**	**0.0162**	**0.0000**	**25.0473**	**25.0473**	**7.9200e-003**	**0.0000**	**25.2454**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0280	7.6600e-003	6.0000e-005	1.4900e-003	1.8000e-004	1.6700e-003	4.3000e-004	1.7000e-004	6.0000e-004	0.0000	5.9265	5.9265	4.0000e-004	0.0000	5.9364
Worker	9.8900e-003	8.2500e-003	0.0897	2.3000e-004	0.0216	1.9000e-004	0.0218	5.7500e-003	1.8000e-004	5.9200e-003	0.0000	20.8038	20.8038	7.2000e-004	0.0000	20.8217
Total	**0.0109**	**0.0362**	**0.0973**	**2.9000e-004**	**0.0231**	**3.7000e-004**	**0.0235**	**6.1800e-003**	**3.5000e-004**	**6.5200e-003**	**0.0000**	**26.7303**	**26.7303**	**1.1200e-003**	**0.0000**	**26.7581**

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	4.9500e-003	0.0784	0.2105	2.8000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.0473	25.0473	7.9200e-003	0.0000	25.2454
Total	**4.9500e-003**	**0.0784**	**0.2105**	**2.8000e-004**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**25.0473**	**25.0473**	**7.9200e-003**	**0.0000**	**25.2454**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0280	7.6600e-003	6.0000e-005	1.4900e-003	1.8000e-004	1.6700e-003	4.3000e-004	1.7000e-004	6.0000e-004	0.0000	5.9265	5.9265	4.0000e-004	0.0000	5.9364
Worker	9.8900e-003	8.2500e-003	0.0897	2.3000e-004	0.0216	1.9000e-004	0.0218	5.7500e-003	1.8000e-004	5.9200e-003	0.0000	20.8038	20.8038	7.2000e-004	0.0000	20.8217
Total	**0.0109**	**0.0362**	**0.0973**	**2.9000e-004**	**0.0231**	**3.7000e-004**	**0.0235**	**6.1800e-003**	**3.5000e-004**	**6.5200e-003**	**0.0000**	**26.7303**	**26.7303**	**1.1200e-003**	**0.0000**	**26.7581**

3.7 Building Construction - 2020

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0982	1.0330	0.6015	1.1400e-003		0.0565	0.0565		0.0520	0.0520	0.0000	99.8254	99.8254	0.0323	0.0000	100.6325
Total	**0.0982**	**1.0330**	**0.6015**	**1.1400e-003**		**0.0565**	**0.0565**		**0.0520**	**0.0520**	**0.0000**	**99.8254**	**99.8254**	**0.0323**	**0.0000**	**100.6325**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0499	1.4896	0.4032	3.5300e-003	0.0866	6.9300e-003	0.0935	0.0250	6.6300e-003	0.0316	0.0000	341.4867	341.4867	0.0217	0.0000	342.0291
Worker	0.2691	0.2170	2.3999	6.5900e-003	0.6389	5.4500e-003	0.6443	0.1697	5.0200e-003	0.1747	0.0000	595.4678	595.4678	0.0188	0.0000	595.9369
Total	**0.3190**	**1.7066**	**2.8031**	**0.0101**	**0.7255**	**0.0124**	**0.7378**	**0.1947**	**0.0117**	**0.2063**	**0.0000**	**936.9545**	**936.9545**	**0.0405**	**0.0000**	**937.9661**

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	7.4100e-003	0.1004	0.3432	1.1400e-003		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	39.7546	39.7546	0.0129	0.0000	40.0761
Total	**7.4100e-003**	**0.1004**	**0.3432**	**1.1400e-003**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**39.7546**	**39.7546**	**0.0129**	**0.0000**	**40.0761**

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	0.0499	1.4896	0.4032	3.5300e-003	0.0866	6.9300e-003	0.0935	0.0250	6.6300e-003	0.0316	0.0000	341.4867	341.4867	0.0217	0.0000	342.0291
Worker	0.2691	0.2170	2.3999	6.5900e-003	0.6389	5.4500e-003	0.6443	0.1697	5.0200e-003	0.1747	0.0000	595.4678	595.4678	0.0188	0.0000	595.9369
Total	**0.3190**	**1.7066**	**2.8031**	**0.0101**	**0.7255**	**0.0124**	**0.7378**	**0.1947**	**0.0117**	**0.2063**	**0.0000**	**936.9545**	**936.9545**	**0.0405**	**0.0000**	**937.9661**

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1744	1.8412	1.1514	2.2500e-003		0.0967	0.0967		0.0890	0.0890	0.0000	197.7445	197.7445	0.0640	0.0000	199.3433
Total	**0.1744**	**1.8412**	**1.1514**	**2.2500e-003**		**0.0967**	**0.0967**		**0.0890**	**0.0890**	**0.0000**	**197.7445**	**197.7445**	**0.0640**	**0.0000**	**199.3433**

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	0.0846	2.6874	0.7286	6.9200e-003	0.1715	5.4800e-003	0.1770	0.0495	5.2400e-003	0.0548	0.0000	671.2348	671.2348	0.0412	0.0000	672.2641
Worker	0.4970	0.3869	4.3676	0.0126	1.2656	0.0104	1.2761	0.3362	9.6100e-003	0.3458	0.0000	1,142.1695	1,142.1695	0.0336	0.0000	1,143.0098
Total	**0.5815**	**3.0743**	**5.0962**	**0.0196**	**1.4372**	**0.0159**	**1.4531**	**0.3857**	**0.0149**	**0.4005**	**0.0000**	**1,813.4043**	**1,813.4043**	**0.0748**	**0.0000**	**1,815.2739**

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	0.0147	0.1989	0.6800	2.2500e-003		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	78.7544	78.7544	0.0255	0.0000	79.3912
Total	**0.0147**	**0.1989**	**0.6800**	**2.2500e-003**		**1.4700e-003**	**1.4700e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**78.7544**	**78.7544**	**0.0255**	**0.0000**	**79.3912**

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	0.0846	2.6874	0.7286	6.9200e-003	0.1715	5.4800e-003	0.1770	0.0495	5.2400e-003	0.0548	0.0000	671.2348	671.2348	0.0412	0.0000	672.2641
Worker	0.4970	0.3869	4.3676	0.0126	1.2656	0.0104	1.2761	0.3362	9.6100e-003	0.3458	0.0000	1,142.1695	1,142.1695	0.0336	0.0000	1,143.0098
Total	**0.5815**	**3.0743**	**5.0962**	**0.0196**	**1.4372**	**0.0159**	**1.4531**	**0.3857**	**0.0149**	**0.4005**	**0.0000**	**1,813.4043**	**1,813.4043**	**0.0748**	**0.0000**	**1,815.2739**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1157	1.2011	0.8378	1.6800e-003		0.0615	0.0615		0.0566	0.0566	0.0000	147.8491	147.8491	0.0478	0.0000	149.0445
Total	**0.1157**	**1.2011**	**0.8378**	**1.6800e-003**		**0.0615**	**0.0615**		**0.0566**	**0.0566**	**0.0000**	**147.8491**	**147.8491**	**0.0478**	**0.0000**	**149.0445**

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	0.0593	1.9088	0.5154	5.1300e-003	0.1282	3.5800e-003	0.1318	0.0370	3.4300e-003	0.0404	0.0000	497.4101	497.4101	0.0297	0.0000	498.1529
Worker	0.3484	0.2613	3.0086	9.1100e-003	0.9462	7.5600e-003	0.9537	0.2513	6.9600e-003	0.2583	0.0000	823.8745	823.8745	0.0227	0.0000	824.4417
Total	**0.4077**	**2.1701**	**3.5240**	**0.0142**	**1.0744**	**0.0111**	**1.0856**	**0.2883**	**0.0104**	**0.2987**	**0.0000**	**1,321.2846**	**1,321.2846**	**0.0524**	**0.0000**	**1,322.5946**

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	0.0110	0.1487	0.5083	1.6800e-003		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	58.8771	58.8771	0.0190	0.0000	59.3532
Total	**0.0110**	**0.1487**	**0.5083**	**1.6800e-003**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**58.8771**	**58.8771**	**0.0190**	**0.0000**	**59.3532**

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	0.0593	1.9088	0.5154	5.1300e-003	0.1282	3.5800e-003	0.1318	0.0370	3.4300e-003	0.0404	0.0000	497.4101	497.4101	0.0297	0.0000	498.1529
Worker	0.3484	0.2613	3.0086	9.1100e-003	0.9462	7.5600e-003	0.9537	0.2513	6.9600e-003	0.2583	0.0000	823.8745	823.8745	0.0227	0.0000	824.4417
Total	**0.4077**	**2.1701**	**3.5240**	**0.0142**	**1.0744**	**0.0111**	**1.0856**	**0.2883**	**0.0104**	**0.2987**	**0.0000**	**1,321.2846**	**1,321.2846**	**0.0524**	**0.0000**	**1,322.5946**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0231	0.1749	0.1788	2.7000e-004		0.0121	0.0121		0.0117	0.0117	0.0000	23.4396	23.4396	3.4500e-003	0.0000	23.5257
Total	**0.3661**	**0.1749**	**0.1788**	**2.7000e-004**		**0.0121**	**0.0121**		**0.0117**	**0.0117**	**0.0000**	**23.4396**	**23.4396**	**3.4500e-003**	**0.0000**	**23.5257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	9.1200e-003	0.1008	2.8000e-004	0.0268	2.3000e-004	0.0271	7.1300e-003	2.1000e-004	7.3400e-003	0.0000	25.0129	25.0129	7.9000e-004	0.0000	25.0326
Total	**0.0113**	**9.1200e-003**	**0.1008**	**2.8000e-004**	**0.0268**	**2.3000e-004**	**0.0271**	**7.1300e-003**	**2.1000e-004**	**7.3400e-003**	**0.0000**	**25.0129**	**25.0129**	**7.9000e-004**	**0.0000**	**25.0326**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3430					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-004	4.0300e-003	0.0574	2.7000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	6.6306	6.6306	2.1400e-003	0.0000	6.6842
Total	**0.3440**	**4.0300e-003**	**0.0574**	**2.7000e-004**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**6.6306**	**6.6306**	**2.1400e-003**	**0.0000**	**6.6842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	9.1200e-003	0.1008	2.8000e-004	0.0268	2.3000e-004	0.0271	7.1300e-003	2.1000e-004	7.3400e-003	0.0000	25.0129	25.0129	7.9000e-004	0.0000	25.0326
Total	**0.0113**	**9.1200e-003**	**0.1008**	**2.8000e-004**	**0.0268**	**2.3000e-004**	**0.0271**	**7.1300e-003**	**2.1000e-004**	**7.3400e-003**	**0.0000**	**25.0129**	**25.0129**	**7.9000e-004**	**0.0000**	**25.0326**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0824	0.6289	0.7025	1.0700e-003		0.0409	0.0409		0.0396	0.0396	0.0000	92.8681	92.8681	0.0131	0.0000	93.1948
Total	**1.4415**	**0.6289**	**0.7025**	**1.0700e-003**		**0.0409**	**0.0409**		**0.0396**	**0.0396**	**0.0000**	**92.8681**	**92.8681**	**0.0131**	**0.0000**	**93.1948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0325	0.3669	1.0600e-003	0.1063	8.8000e-004	0.1072	0.0282	8.1000e-004	0.0291	0.0000	95.9546	95.9546	2.8200e-003	0.0000	96.0252
Total	**0.0418**	**0.0325**	**0.3669**	**1.0600e-003**	**0.1063**	**8.8000e-004**	**0.1072**	**0.0282**	**8.1000e-004**	**0.0291**	**0.0000**	**95.9546**	**95.9546**	**2.8200e-003**	**0.0000**	**96.0252**

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	1.3591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0160	0.2272	1.0700e-003		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	26.2707	26.2707	8.5000e-003	0.0000	26.4831
Total	**1.3627**	**0.0160**	**0.2272**	**1.0700e-003**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**26.2707**	**26.2707**	**8.5000e-003**	**0.0000**	**26.4831**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0325	0.3669	1.0600e-003	0.1063	8.8000e-004	0.1072	0.0282	8.1000e-004	0.0291	0.0000	95.9546	95.9546	2.8200e-003	0.0000	96.0252
Total	**0.0418**	**0.0325**	**0.3669**	**1.0600e-003**	**0.1063**	**8.8000e-004**	**0.1072**	**0.0282**	**8.1000e-004**	**0.0291**	**0.0000**	**95.9546**	**95.9546**	**2.8200e-003**	**0.0000**	**96.0252**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0565	0.4289	0.5224	8.0000e-004		0.0262	0.0262		0.0253	0.0253	0.0000	69.4286	69.4286	9.5900e-003	0.0000	69.6684
Total	**1.0725**	**0.4289**	**0.5224**	**8.0000e-004**		**0.0262**	**0.0262**		**0.0253**	**0.0253**	**0.0000**	**69.4286**	**69.4286**	**9.5900e-003**	**0.0000**	**69.6684**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0293	0.0220	0.2528	7.7000e-004	0.0795	6.3000e-004	0.0801	0.0211	5.8000e-004	0.0217	0.0000	69.2144	69.2144	1.9100e-003	0.0000	69.2620
Total	**0.0293**	**0.0220**	**0.2528**	**7.7000e-004**	**0.0795**	**6.3000e-004**	**0.0801**	**0.0211**	**5.8000e-004**	**0.0217**	**0.0000**	**69.2144**	**69.2144**	**1.9100e-003**	**0.0000**	**69.2620**

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	1.0160					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7500e-003	0.0119	0.1699	8.0000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	19.6401	19.6401	6.3500e-003	0.0000	19.7989
Total	**1.0188**	**0.0119**	**0.1699**	**8.0000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**19.6401**	**19.6401**	**6.3500e-003**	**0.0000**	**19.7989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0293	0.0220	0.2528	7.7000e-004	0.0795	6.3000e-004	0.0801	0.0211	5.8000e-004	0.0217	0.0000	69.2144	69.2144	1.9100e-003	0.0000	69.2620
Total	**0.0293**	**0.0220**	**0.2528**	**7.7000e-004**	**0.0795**	**6.3000e-004**	**0.0801**	**0.0211**	**5.8000e-004**	**0.0217**	**0.0000**	**69.2144**	**69.2144**	**1.9100e-003**	**0.0000**	**69.2620**

3.9 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0139	0.1344	0.1762	2.8000e-004		6.6200e-003	6.6200e-003		6.1300e-003	6.1300e-003	0.0000	23.7581	23.7581	7.3600e-003	0.0000	23.9422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0139**	**0.1344**	**0.1762**	**2.8000e-004**		**6.6200e-003**	**6.6200e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**23.7581**	**23.7581**	**7.3600e-003**	**0.0000**	**23.9422**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2500e-003	3.9300e-003	0.0453	1.4000e-004	0.0143	1.1000e-004	0.0144	3.7800e-003	1.0000e-004	3.8900e-003	0.0000	12.4040	12.4040	3.4000e-004	0.0000	12.4126
Total	**5.2500e-003**	**3.9300e-003**	**0.0453**	**1.4000e-004**	**0.0143**	**1.1000e-004**	**0.0144**	**3.7800e-003**	**1.0000e-004**	**3.8900e-003**	**0.0000**	**12.4040**	**12.4040**	**3.4000e-004**	**0.0000**	**12.4126**

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	4.9800e-003	0.0252	0.2017	2.8000e-004		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	23.7581	23.7581	7.3600e-003	0.0000	23.9422
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9800e-003**	**0.0252**	**0.2017**	**2.8000e-004**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**23.7581**	**23.7581**	**7.3600e-003**	**0.0000**	**23.9422**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2500e-003	3.9300e-003	0.0453	1.4000e-004	0.0143	1.1000e-004	0.0144	3.7800e-003	1.0000e-004	3.8900e-003	0.0000	12.4040	12.4040	3.4000e-004	0.0000	12.4126
Total	**5.2500e-003**	**3.9300e-003**	**0.0453**	**1.4000e-004**	**0.0143**	**1.1000e-004**	**0.0144**	**3.7800e-003**	**1.0000e-004**	**3.8900e-003**	**0.0000**	**12.4040**	**12.4040**	**3.4000e-004**	**0.0000**	**12.4126**

B-2 Project Operational Emissions

1045 Olive Project
Environmental Leadership Development Project
Greenhouse Gas Assessment

Baseline Estimated Annual GHG Emissions

Baseline Condition (MTCO2e/year)							
Electricity	Natural Gas	Mobile	Solid Waste	Water	Area	CO2 Seq.	Subtotal
80	1	352	5	30	-	-	**468**

Project Estimated Annual GHG Emissions

Year	Project Construction and Operation (MTCO2e/year)									GHG	Net Change	Exceeds
	Construction	Electricity	Natural Gas	Mobile	Solid Waste	Water	Area	CO2 Seq.	Subtotal	Offsets	from Baseline	Baseline?
Construction Yr 1	1,262	-	-	-	-	-	-	-	**1,262**	1,262	-	NO
Construction Yr 2	1,678	-	-	-	-	-	-	-	**1,678**	1,678	-	NO
Construction Yr 3	2,666	-	-	-	-	-	-	-	**2,666**	2,666	-	NO
Construction Yr 4	1,507	781	243	2,895	94	106	14	-	**5,640**	5,172	-	NO
2023	-	1,875	582	6,716	226	254	33	(5)	**9,681**	9,213	-	NO
2024	-	1,680	582	6,546	226	234	33	(5)	**9,296**	8,828	-	NO
2025	-	1,680	582	6,346	226	234	33	(5)	**9,096**	8,628	-	NO
2026	-	1,680	582	6,178	226	234	33	(5)	**8,928**	8,460	-	NO
2027	-	1,539	582	6,029	226	218	33	(5)	**8,622**	8,154	-	NO
2028	-	1,539	582	5,899	226	218	33	(5)	**8,492**	8,024	-	NO
2029	-	1,539	582	5,785	226	218	33	(5)	**8,378**	7,910	-	NO
2030	-	1,401	582	5,686	226	204	33	(5)	**8,127**	7,659	-	NO
2031	-	1,401	582	5,604	226	204	33	(5)	**8,045**	7,577	-	NO
2032	-	1,401	582	5,529	226	204	33	(5)	**7,970**	7,502	-	NO
2033	-	1,401	582	5,463	226	204	33	(5)	**7,904**	7,436	-	NO
2034	-	1,401	582	5,408	226	204	33	(5)	**7,849**	7,381	-	NO
2035	-	1,401	582	5,363	226	204	33	(5)	**7,804**	7,336	-	NO
2036	-	1,401	582	5,330	226	204	33	(5)	**7,771**	7,303	-	NO
2037	-	1,401	582	5,302	226	204	33	(5)	**7,743**	7,275	-	NO
2038	-	1,401	582	5,281	226	204	33	(5)	**7,722**	7,254	-	NO
2039	-	1,401	582	5,266	226	204	33	(5)	**7,707**	7,239	-	NO
2040	-	1,401	582	5,255	226	204	33	(5)	**7,696**	7,228	-	NO
2041	-	1,401	582	5,247	226	204	33	(5)	**7,688**	7,220	-	NO
2042	-	1,401	582	5,243	226	204	33	(5)	**7,684**	7,216	-	NO
2043	-	1,401	582	5,242	226	204	33	-	**7,688**	7,220	-	NO
2044	-	1,401	582	5,242	226	204	33	-	**7,688**	7,220	-	NO
2045	-	1,401	582	5,244	226	204	33	-	**7,690**	7,222	-	NO
2046	-	1,401	582	5,249	226	204	33	-	**7,695**	7,227	-	NO
2047	-	1,401	582	5,254	226	204	33	-	**7,700**	7,232	-	NO
2048	-	1,401	582	5,261	226	204	33	-	**7,707**	7,239	-	NO
2049	-	1,401	582	5,269	226	204	33	-	**7,715**	7,247	-	NO
2050	-	1,401	582	5,279	226	204	33	-	**7,725**	7,257	-	NO
2051	-	1,401	582	5,279	226	204	33	-	**7,725**	7,257	-	NO
2052	-	1,401	582	5,279	226	204	33	-	**7,725**	7,257	-	NO

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Year	CH4	N2O	CO2e
	25	*298*	
2017	2.60E-08	-	4.62E-04
2018	2.39E-08	-	4.52E-04
2021	1.90E-08	-	4.18E-04
2022	1.78E-08	-	4.06E-04
2023	1.66E-08	-	3.93E-04
2024	1.58E-08	-	3.83E-04
2025	1.50E-08	-	3.71E-04
2026	1.42E-08	-	3.61E-04
2027	1.36E-08	-	3.52E-04
2028	1.31E-08	-	3.45E-04
2029	1.26E-08	-	3.38E-04
2030	1.22E-08	-	3.32E-04
2031	1.18E-08	-	3.28E-04
2032	1.15E-08	-	3.23E-04
2033	1.12E-08	-	3.19E-04
2034	1.10E-08	-	3.16E-04
2035	1.08E-08	-	3.14E-04
2036	1.06E-08	-	3.12E-04
2037	1.04E-08	-	3.10E-04
2038	1.03E-08	-	3.09E-04
2039	1.02E-08	-	3.08E-04
2040	1.01E-08	-	3.07E-04
2041	1.00E-08	-	3.07E-04
2042	9.94E-09	-	3.07E-04
2043	9.89E-09	-	3.06E-04
2044	9.82E-09	-	3.07E-04
2045	9.76E-09	-	3.07E-04
2046	9.65E-09	-	3.07E-04
2047	9.61E-09	-	3.07E-04
2048	9.59E-09	-	3.08E-04
2049	9.56E-09	-	3.08E-04
2050	9.53E-09	-	3.09E-04
2051	9.53E-09	-	3.09E-04
2052	9.53E-09	-	3.09E-04

Source: EMFAC2014, South Coast Air Basin (Los Angeles County), "Emissions" (or "Burden") mode.

1045 Olive St Project
Draft Environmental Impact Report
Greenhouse Gas Assessment

Scenario	Year	VMT/year	GHG Emission Factors (metric tons/year) CO2	CH4	N2O	CO2e
			1	*25*	*298*	
Existing Uses	2017	859,940	397.04	0.02	-	397.6
5 Months Project	2022	7,252,246	2,942.82	0.13	-	2,946
	2023	17,405,390	6,827.35	0.29	-	6,835
	2024	17,405,390	6,654.31	0.27	-	6,661
	2025	17,405,390	6,451.28	0.26	-	6,458
	2026	17,405,390	6,280.88	0.25	-	6,287
	2027	17,405,390	6,129.47	0.24	-	6,135
	2028	17,405,390	5,997.54	0.23	-	6,003
	2029	17,405,390	5,881.53	0.22	-	5,887
	2030	17,405,390	5,780.77	0.21	-	5,786
	2031	17,405,390	5,698.14	0.21	-	5,703
	2032	17,405,390	5,621.31	0.20	-	5,626
	2033	17,405,390	5,555.06	0.20	-	5,560
	2034	17,405,390	5,499.02	0.19	-	5,504
	2035	17,405,390	5,452.89	0.19	-	5,458
	2036	17,405,390	5,419.47	0.18	-	5,424
	2037	17,405,390	5,391.21	0.18	-	5,396
	2038	17,405,390	5,369.98	0.18	-	5,374
	2039	17,405,390	5,354.33	0.18	-	5,359
	2040	17,405,390	5,343.39	0.18	-	5,348
	2041	17,405,390	5,334.90	0.17	-	5,339
	2042	17,405,390	5,330.99	0.17	-	5,335
	2043	17,405,390	5,329.98	0.17	-	5,334
	2044	17,405,390	5,330.72	0.17	-	5,335
	2045	17,405,390	5,332.83	0.17	-	5,337
	2046	17,405,390	5,337.19	0.17	-	5,341
	2047	17,405,390	5,342.95	0.17	-	5,347
	2048	17,405,390	5,349.74	0.17	-	5,354
	2049	17,405,390	5,357.37	0.17	-	5,362
	2050	17,405,390	5,367.89	0.17	-	5,372
	2051	17,405,390	5,367.89	0.17	-	5,372
	2052	17,405,390	5,367.89	0.17	-	5,372

Source: ESA 2017

Emergency Generator Emissions

updated: 9/15/2017

Conversion Factors

HP/kW	1.3410	
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Standby Emergency Generators

Ratings:	708	kW	*(based on engineering assumptions)*
	950	HP	*(based on engineering assumptions; conversion from kW to hp)*
Load Factor:	0.74		*(based on CalEEMod Generator Set Load Factor)*
Engine Emissions Tier:	Tier 4		*(compliance with CARB diesel regulations)*
Operating Hours per Unit:	2	hours/day	*(testing/maintenance)*
	50	hours/year	*(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)*

Emergency Generator Emissions

Units	Greenhouse Gases [1]	
	CO_2	CO_2e
g/kW-hr	—	—
g/HP-hr	526.17	530.91
lbs/hr	815.48	822.83
lbs/day	1,630.96	1,645.65
lbs/yr	40,774.00	41,141.33
tons/yr	20.39	20.57
metric tons/yr	**18.49**	**18.66**

Notes:

1. Emission factor for CO2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
   Emissions of GHGs assume 99.11% of the CO2e emissions occur as CO2, which is typical for off-road diesel engines.

Source: ESA 2017.

1045 Olive - Project - Los Angeles-South Coast County, Annual

1045 Olive - Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2022
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	595	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017).

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

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	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,468.0891	2,468.0891	0.1032	0.0297	2,479.5074
Waste						0.0000	0.0000		0.0000	0.0000	379.7961	0.0000	379.7961	22.4453	0.0000	940.9287
Water						0.0000	0.0000		0.0000	0.0000	21.0528	351.8400	372.8928	2.1795	0.0546	443.6518

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	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Energy	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	2,445.3405	2,445.3405	0.1021	0.0294	2,456.6626
Waste						0.0000	0.0000		0.0000	0.0000	91.1511	0.0000	91.1511	5.3869	0.0000	225.8229
Water						0.0000	0.0000		0.0000	0.0000	12.6317	199.2400	211.8717	1.3071	0.0326	254.2770

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	96.9960
Vegetation Land Change	0.9051
Total	**97.9011**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,866.9737	1,866.9737	0.0910	0.0188	1,874.8589
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,889.7224	1,889.7224	0.0921	0.0191	1,897.7037
NaturalGas Mitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037
NaturalGas Unmitigated	0.0584	0.5098	0.2884	3.1900e-003		0.0404	0.0404		0.0404	0.0404	0.0000	578.3668	578.3668	0.0111	0.0106	581.8037

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

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 High Rise	7.31825e+006	0.0395	0.3372	0.1435	2.1500e-003		0.0273	0.0273		0.0273	0.0273	0.0000	390.5297	390.5297	7.4900e-003	7.1600e-003	392.8504
City Park	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
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
General Office Building	239690	1.2900e-003	0.0118	9.8700e-003	7.0000e-005		8.9000e-004	8.9000e-004		8.9000e-004	8.9000e-004	0.0000	12.7908	12.7908	2.5000e-004	2.3000e-004	12.8668
General Office Building	394820	2.1300e-003	0.0194	0.0163	1.2000e-004		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	21.0691	21.0691	4.0000e-004	3.9000e-004	21.1943
High Turnover (Sit Down Restaurant)	2.88542e+006	0.0156	0.1414	0.1188	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	153.9772	153.9772	2.9500e-003	2.8200e-003	154.8922
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0584**	**0.5098**	**0.2884**	**3.1900e-003**		**0.0404**	**0.0404**		**0.0404**	**0.0404**	**0.0000**	**578.3668**	**578.3668**	**0.0111**	**0.0106**	**581.8037**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	848.6081	0.0414	8.5600e-003	852.1922
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,889.7224**	**0.0921**	**0.0191**	**1,897.7037**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	825.8594	0.0403	8.3300e-003	829.3475
City Park	954.8	0.2577	1.0000e-005	0.0000	0.2588
Enclosed Parking with Elevator	2.49904e+006	674.4606	0.0329	6.8000e-003	677.3092
General Office Building	299095	80.7219	3.9300e-003	8.1000e-004	81.0629
General Office Building	492672	132.9659	6.4800e-003	1.3400e-003	133.5275
High Turnover (Sit Down Restaurant)	551927	148.9581	7.2600e-003	1.5000e-003	149.5872
Other Non-Asphalt Surfaces	13895	3.7501	1.8000e-004	4.0000e-005	3.7659
Total		**1,866.9737**	**0.0910**	**0.0188**	**1,874.8589**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Unmitigated	3.4876	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					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	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.4876**	**0.0947**	**8.2099**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**	**0.0000**	**13.4003**	**13.4003**	**0.0130**	**0.0000**	**13.7245**

Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating	0.2718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9670					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	0.2488	0.0947	8.2099	4.3000e-004		0.0453	0.0453		0.0453	0.0453	0.0000	13.4003	13.4003	0.0130	0.0000	13.7245
Total	**3.4876**	**0.0947**	**8.2099**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**	**0.0000**	**13.4003**	**13.4003**	**0.0130**	**0.0000**	**13.7245**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	211.8717	1.3071	0.0326	254.2770
Unmitigated	372.8928	2.1795	0.0546	443.6518

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	296.0011	1.6993	0.0426	351.1857
City Park	0 / 0.0714889	0.2144	1.0000e-005	0.0000	0.2153
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	61.4139	0.3558	8.9200e-003	72.9673
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	15.2634	0.1243	3.0600e-003	19.2835
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**372.8928**	**2.1795**	**0.0546**	**443.6518**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	167.8216	1.0191	0.0255	200.8910
City Park	0 / 0.0357444	0.1072	1.0000e-005	0.0000	0.1076
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	34.8575	0.2134	5.3300e-003	41.7812
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	9.0854	0.0746	1.8400e-003	11.4972
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**211.8717**	**1.3071**	**0.0326**	**254.2770**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	91.1511	5.3869	0.0000	225.8229
Unmitigated	379.7961	22.4453	0.0000	940.9287

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	1772	359.7000	21.2577	0.0000	891.1415
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	99	20.0961	1.1877	0.0000	49.7873
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**379.7961**	**22.4453**	**0.0000**	**940.9287**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	425.28	86.3280	5.1018	0.0000	213.8740
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	23.76	4.8231	0.2850	0.0000	11.9489
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**91.1511**	**5.3869**	**0.0000**	**225.8229**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	97.9011	0.0000	0.0000	97.9011

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	0 / 0.21	0.9051	0.0000	0.0000	0.9051
Total		**0.9051**	**0.0000**	**0.0000**	**0.9051**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	137	96.9960	0.0000	0.0000	96.9960
Total		**96.9960**	**0.0000**	**0.0000**	**96.9960**

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	533	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017). Linearly adjusted to 40% RPS by 2024.

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblFleetMix	HHD	0.03	0.03
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00

tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10
tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	533
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,672.4319	1,672.4319	0.0910	0.0188	1,680.3171
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,692.8101	1,692.8101	0.0921	0.0191	1,700.7914

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	760.1817	0.0414	8.5600e-003	763.7658
City Park	954.8	0.2308	1.0000e-005	0.0000	0.2319
Enclosed Parking with Elevator	2.49904e+006	604.1807	0.0329	6.8000e-003	607.0293
General Office Building	299095	72.3106	3.9300e-003	8.1000e-004	72.6515
General Office Building	492672	119.1107	6.4800e-003	1.3400e-003	119.6722
High Turnover (Sit Down Restaurant)	551927	133.4364	7.2600e-003	1.5000e-003	134.0655
Other Non-Asphalt Surfaces	13895	3.3593	1.8000e-004	4.0000e-005	3.3752
Total		**1,692.8101**	**0.0921**	**0.0191**	**1,700.7914**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	739.8035	0.0403	8.3300e-003	743.2915
City Park	954.8	0.2308	1.0000e-005	0.0000	0.2319
Enclosed Parking with Elevator	2.49904e+006	604.1807	0.0329	6.8000e-003	607.0293
General Office Building	299095	72.3106	3.9300e-003	8.1000e-004	72.6515
General Office Building	492672	119.1107	6.4800e-003	1.3400e-003	119.6722
High Turnover (Sit Down Restaurant)	551927	133.4364	7.2600e-003	1.5000e-003	134.0655
Other Non-Asphalt Surfaces	13895	3.3593	1.8000e-004	4.0000e-005	3.3752
Total		**1,672.4319**	**0.0910**	**0.0188**	**1,680.3171**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	191.1105	1.3071	0.0326	233.5158
Unmitigated	336.2304	2.1795	0.0546	406.9894

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	266.8675	1.6993	0.0426	322.0521
City Park	0 / 0.0714889	0.1920	1.0000e-005	0.0000	0.1929
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	55.3726	0.3558	8.9200e-003	66.9260
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	13.7983	0.1243	3.0600e-003	17.8185
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**336.2304**	**2.1795**	**0.0546**	**406.9894**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	151.3604	1.0191	0.0255	184.4298
City Park	0 / 0.0357444	0.0960	1.0000e-005	0.0000	0.0965
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	31.4402	0.2134	5.3300e-003	38.3638
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	8.2140	0.0746	1.8400e-003	10.6257
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**191.1105**	**1.3071**	**0.0326**	**233.5158**

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1045 Olive - Project (2027)

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2027
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	488	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017). Linearly adjusted to 45% RPS by 2027.

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	488
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,531.2322	1,531.2322	0.0910	0.0188	1,539.1174
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,549.8900	1,549.8900	0.0921	0.0191	1,557.8712

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	696.0013	0.0414	8.5600e-003	699.5854
City Park	954.8	0.2114	1.0000e-005	0.0000	0.2124
Enclosed Parking with Elevator	2.49904e+006	553.1711	0.0329	6.8000e-003	556.0197
General Office Building	299095	66.2055	3.9300e-003	8.1000e-004	66.5465
General Office Building	492672	109.0544	6.4800e-003	1.3400e-003	109.6160
High Turnover (Sit Down Restaurant)	551927	122.1706	7.2600e-003	1.5000e-003	122.7998
Other Non-Asphalt Surfaces	13895	3.0757	1.8000e-004	4.0000e-005	3.0915
Total		**1,549.8899**	**0.0921**	**0.0191**	**1,557.8713**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	677.3435	0.0403	8.3300e-003	680.8316
City Park	954.8	0.2114	1.0000e-005	0.0000	0.2124
Enclosed Parking with Elevator	2.49904e+006	553.1711	0.0329	6.8000e-003	556.0197
General Office Building	299095	66.2055	3.9300e-003	8.1000e-004	66.5465
General Office Building	492672	109.0544	6.4800e-003	1.3400e-003	109.6160
High Turnover (Sit Down Restaurant)	551927	122.1706	7.2600e-003	1.5000e-003	122.7998
Other Non-Asphalt Surfaces	13895	3.0757	1.8000e-004	4.0000e-005	3.0915
Total		**1,531.2322**	**0.0910**	**0.0188**	**1,539.1174**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	176.0420	1.3071	0.0326	218.4473
Unmitigated	309.6207	2.1795	0.0546	380.3797

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	245.7221	1.6993	0.0426	300.9067
City Park	0 / 0.0714889	0.1758	1.0000e-005	0.0000	0.1767
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	50.9878	0.3558	8.9200e-003	62.5412
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	12.7350	0.1243	3.0600e-003	16.7552
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**309.6207**	**2.1795**	**0.0546**	**380.3797**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	139.4128	1.0191	0.0255	172.4822
City Park	0 / 0.0357444	0.0879	1.0000e-005	0.0000	0.0884
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	28.9599	0.2134	5.3300e-003	35.8835
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	7.5814	0.0746	1.8400e-003	9.9932
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**176.0420**	**1.3071**	**0.0326**	**218.4473**

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1045 Olive - Project (2030)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	37.93	1000sqft	0.10	37,927.00	0
General Office Building	23.02	1000sqft	0.10	23,025.00	0
Enclosed Parking with Elevator	891.00	Space	0.10	426,458.00	0
Other Non-Asphalt Surfaces	39.70	1000sqft	0.10	39,700.00	0
City Park	0.06	Acre	0.06	2,728.00	0
High Turnover (Sit Down Restaurant)	12.50	1000sqft	0.10	12,504.00	0
Apartments High Rise	794.00	Dwelling Unit	0.40	739,273.00	1334

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2030
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	444	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor: California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects (Jan 2017). Linearly adjusted to 50% RPS by 2030.

Land Use - Est. population reflects 1.68 avg. household size for Central City CPA, based on the 2015 Demographics Statistics Report by the City of Los Angeles Department of City Planning Demographics Research Unit.

Vehicle Trips - Mobile source emissions estimated outside of CalEEMod using EMFAC and VMT generation in the "1045 Olive Project - AB 900 Traffic Assessment."

Woodstoves - No fireplaces proposed in residential units.

Energy Use - City Park and Other Non-Asphalt Surfaces: Lighting energy assumed to be equivalent to Parking Lot land use (i.e., outdoor lighting).

Water And Wastewater -

Solid Waste - Residential solid waste based on factors in L.A. CEQA Thresholds Guide. Restaurant solid waste based on CalRecycle, 2014 Generator-Based Characterization of Comercial Sector Disposal and Diversion in California, September 10, 2015, Table 1.

Land Use Change - The Project would include the addition of just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover to the Project Site.

Sequestration - The Project would include the addition of 137 canopy trees to the Project Site. Per CalEEMod user's guide, miscellaneous species class should be used when tree species is not known.

Energy Mitigation - Apartments: Energy efficient appliances.

Water Mitigation - Water conservation strategy: 40% indoor/50% outdoor (i.e., per LEED measures).

Waste Mitigation - City of Los Angeles, Bureau of Sanitation, Zero Waste Progress Report, (2013). Citywide 76% MSW diversion.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	0.35
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	674.90	0.00
tblFireplaces	NumberNoFireplace	79.40	0.00
tblFireplaces	NumberWood	39.70	0.00
tblLandUse	LandUseSquareFeet	37,930.00	37,927.00
tblLandUse	LandUseSquareFeet	23,020.00	23,025.00
tblLandUse	LandUseSquareFeet	356,400.00	426,458.00
tblLandUse	LandUseSquareFeet	2,613.60	2,728.00
tblLandUse	LandUseSquareFeet	12,500.00	12,504.00
tblLandUse	LandUseSquareFeet	794,000.00	739,273.00
tblLandUse	LotAcreage	0.87	0.10
tblLandUse	LotAcreage	0.53	0.10
tblLandUse	LotAcreage	8.02	0.10

tblLandUse	LotAcreage	0.91	0.10
tblLandUse	LotAcreage	0.29	0.10
tblLandUse	LotAcreage	12.81	0.40
tblLandUse	Population	2,271.00	1,334.00
tblProjectCharacteristics	CO2IntensityFactor	1227.89	444
tblSequestration	NumberOfNewTrees	0.00	137.00
tblSolidWaste	SolidWasteGenerationRate	365.24	1,772.00
tblSolidWaste	SolidWasteGenerationRate	0.01	0.00
tblSolidWaste	SolidWasteGenerationRate	56.68	0.00
tblSolidWaste	SolidWasteGenerationRate	148.75	99.00
tblWoodstoves	NumberCatalytic	39.70	0.00
tblWoodstoves	NumberNoncatalytic	39.70	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,393.1703	1,393.1703	0.0910	0.0188	1,401.0555
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,410.1458	1,410.1458	0.0921	0.0191	1,418.1271

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.1443e+006	633.2471	0.0414	8.5600e-003	636.8312
City Park	954.8	0.1923	1.0000e-005	0.0000	0.1934
Enclosed Parking with Elevator	2.49904e+006	503.2950	0.0329	6.8000e-003	506.1436
General Office Building	299095	60.2362	3.9300e-003	8.1000e-004	60.5771
General Office Building	492672	99.2216	6.4800e-003	1.3400e-003	99.7832
High Turnover (Sit Down Restaurant)	551927	111.1553	7.2600e-003	1.5000e-003	111.7844
Other Non-Asphalt Surfaces	13895	2.7984	1.8000e-004	4.0000e-005	2.8142
Total		**1,410.1458**	**0.0921**	**0.0191**	**1,418.1271**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	3.06001e+006	616.2716	0.0403	8.3300e-003	619.7596
City Park	954.8	0.1923	1.0000e-005	0.0000	0.1934
Enclosed Parking with Elevator	2.49904e+006	503.2950	0.0329	6.8000e-003	506.1436
General Office Building	299095	60.2362	3.9300e-003	8.1000e-004	60.5771
General Office Building	492672	99.2216	6.4800e-003	1.3400e-003	99.7832
High Turnover (Sit Down Restaurant)	551927	111.1553	7.2600e-003	1.5000e-003	111.7844
Other Non-Asphalt Surfaces	13895	2.7984	1.8000e-004	4.0000e-005	2.8142
Total		**1,393.1703**	**0.0910**	**0.0188**	**1,401.0555**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	161.3082	1.3071	0.0326	203.7135
Unmitigated	283.6023	2.1795	0.0546	354.3613

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	51.7323 / 32.6138	225.0466	1.6993	0.0426	280.2312
City Park	0 / 0.0714889	0.1600	1.0000e-005	0.0000	0.1609
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.8329 / 6.6395	46.7004	0.3558	8.9200e-003	58.2538
High Turnover (Sit Down Restaurant)	3.79417 / 0.242181	11.6953	0.1243	3.0600e-003	15.7154
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**283.6023**	**2.1795**	**0.0546**	**354.3613**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	31.0394 / 16.3069	127.7306	1.0191	0.0255	160.8001
City Park	0 / 0.0357444	0.0800	1.0000e-005	0.0000	0.0804
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	6.49972 / 3.31975	26.5346	0.2134	5.3300e-003	33.4583
High Turnover (Sit Down Restaurant)	2.2765 / 0.121091	6.9630	0.0746	1.8400e-003	9.3748
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**161.3082**	**1.3071**	**0.0326**	**203.7136**

Appendix C

California Air Resources Board, Statewide Emission Factors (EF) For Use With AB 900 Projects, January 2017

ESA

Attachment 2
Statewide Emission Factors for Use With AB 900 Projects

Mobile-Source Emissions

Project applicants under AB 900 may use default GHG emission factors (EFs) from the California Emissions Estimator Model (CalEEMod). However, ARB acknowledges that CalEEMod does not contain the latest mobile-source emissions reductions from State and federal regulations. If an AB 900 project applicant does not wish to use CalEEMod EFs, and the project's mobile sources include "all vehicle classifications," the EFs provided via the EMFAC2014 Web Database provide a quick and easy way to access commonly used emission rates data. The Web Database contains daily emissions and emission rates data for all areas, calendar years and seasons.

See https://www.arb.ca.gov/emfac/2014/.

Electricity Emissions

An AB 900 project applicant may use the local electric utility provider's EFs and electricity intensities for today's electric supply generation.

If an applicant would like to use an EF that represents the State's Renewable Portfolio Standard (RPS) law and growth in electricity demand, the EF of 595 pounds CO_2/MWh may be used[2]. This EF represents a "marginal" supply profile for new generation that will be added to the grid in the years 2020 and beyond, and is consistent with the methodology used in State emission rule impact assessments. It represents a generation supply mix of 67 percent natural gas-fueled combined cycle power plants, and 33 percent renewable energy. ARB believes this marginal profile represents new generation plans in any electric utility territory in California.

[2] LEV III Initial Statement Of Reasons (ISOR, Dec. 7, 2011), http://www.arb.ca.gov/regact/2012/leviiighg2012/leviiighg2012.htm, based on analysis with CA-GREET model.

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

1045 Olive Project
LEED Measures

The following list highlights the main sustainability strategies to be implemented into the 1045 Olive Project in order to achieve Gold certification or greater under LEED v3 or the LEED v4 rating system, as applicable. This is in addition to the strategies needed to reduce the greenhouse gas (GHG) emissions, as required by the California Air Resources Board (CARB).

Design

- Prior to Project approvals, a preliminary LEED action plan will be submitted to the City of Los Angeles Department of City Planning. Prior to issuance of a building permit, conduct a preliminary LEED meeting with a minimum of four key Project team members and the owner or owner's representative. As part of the meeting, review a LEED action plan that, at a minimum (1) determines the LEED certification level to pursue (Gold or Platinum); (2) selects the LEED credits to meet the targeted certification level; and (3) identifies the responsible parties, including but not limited to the Los Angeles Department of Building and Safety, the City of Los Angeles Department of City Planning, the City of Los Angeles Department of Public Works, Bureau of Engineering, to ensure the LEED requirements for each prerequisite and selected credit are met. Modifications to the selected criteria are permissible during construction as long as the targeted LEED certification level continues to be met.

Site

- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

1045 Olive Project
LEED Measures

The following list highlights the main sustainability strategies to be implemented into the 1045 Olive Project in order to achieve Gold certification or greater under LEED v3 or the LEED v4 rating system, as applicable. This is in addition to the strategies needed to reduce the greenhouse gas (GHG) emissions, as required by the California Air Resources Board (CARB).

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Site

- Implementation of an erosion and sedimentation plan for all construction activities.
- Provision of heat island mitigation strategies for 50 percent of hardscapes or provide 100 percent structured parking.
- Development of tenant design and construction guidelines, which applies to LEED Core & Shell certification only.

Transportation

- The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.
  - Preferential parking for carpools and vanpools for employees.
  - Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
  - External and internal multimodal wayfinding signage.
  - Enroll tenants in trip tracking applications, if applicable.
  - Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
  - Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
  - Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
  - Pursue with the City the implementation of on-street passenger drop-off spaces.
  - Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
  - Discounts for employees who utilize public transit to travel to the site.
  - On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
  - Participate in the City's Bike Share Program by providing an area for bike share facilities.

Water Quality

- Use of on-site storm water treatment in accordance with City standards.
- Installation of catch basin inserts and screens to provide runoff contaminant removal in accordance with City standards.
- Preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plan (SUSMP), both of which would include Best Management Practices (BMPs) to control stormwater runoff, minimize pollutant loading and erosion effects during and after construction.

Energy Conservation and Efficiency

- Use of full-cutoff or fully shielded on-street lighting oriented to pedestrian areas/sidewalks so as to minimize overlighting, light trespass, and glare.
- Inclusion of outdoor air flow measuring devices, additional outdoor air ventilation, and use of low emitting materials to promote indoor environmental quality.
- Use of refrigerants that reduce ozone depletion.
- Provision of conduit that is appropriate for future photovoltaic and solar thermal collectors.
- Post-construction commissioning of building energy systems performed on an ongoing basis to ensure all systems are running at optimal efficiency.
- Purchase of renewable source power ("green power") or implementation of other carbon offset programs or carbon offset purchases to minimize carbon emissions.
- Review of commissioning activities by an independent Commissioning Agency and development and implementation of commissioning plan.
- Implementation of building level energy meter to provide monthly tracking of energy consumption.
- Provision of metering for tenant space.

Solid Waste

- Provision of on-site recycling containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers during construction and after the building is occupied.
- Implementation of a construction waste management plan to recycle and/or salvage a minimum of 65 percent of nonhazardous construction debris.
- Diversion of construction materials from landfill. Diversion must include at least three material streams (e.g., recovery, reuse, and recycling).

Air Quality

- Employment of practices that prohibit the use of chlorofluorocarbons (CFCs) in heating, ventilation, and air conditioning (HVAC) systems.
- Installation of MERV 11 filtration at outside air intakes to improve indoor air quality (per LEED minimum indoor air quality performance requirements).
- Meeting applicable California and/or Los Angeles air emissions requirements for all heating or cogeneration equipment utilized at the Project Site.
- Installation of landscaping and canopy trees throughout the Project Site, including roof decks, pool decks, and terraces, to provide shading and capture carbon dioxide (CO_2) emissions.
- Use of adhesives, sealants, paints, finishes, carpet, and other materials that emit low quantities of volatile organic compounds (VOCs) and/or other air pollutants.
- Development of an Indoor Air Quality Management Plan for construction and pre-occupancy phases.
- Provision of individual control on thermostats to 50 percent of building occupants. For residential buildings, the credit can be achieved by providing access to operable windows. For commercial spaces, control must be provided to 50 percent of occupants in order to meet the intent of the credit.
- HVAC system design compliance to ASHRAE 55. The Core & Shell base building mechanical systems must allow for the tenant build-out to meet the requirement of this credit.

Statutory requirement:

The project will achieve at least 15 percent greater transportation efficiency than comparable projects. The applicant shall provide information setting forth its basis for determining and evaluating comparable projects and their transportation efficiency, and how the project will achieve at least 15 percent greater transportation efficiency. For residential projects, the applicant shall also submit information demonstrating that the number of vehicle trips by residents divided by the number of residents is 15 percent more efficient than for comparable projects. For the purposes of this provision, comparable means a project of the same size, capacity and location type.

The project's location in a centralized area near transit and active transportation amenities, as well internal trip capture due to its mix of land uses, will increase its travel efficiency compared to projects located further afield or which are of a single land use. The project's attraction of pass-by trips rather than full trips will represent a small increase in travel efficiency. The project's elimination of existing uses will reduce the net increase in trips. However, the program of TDM measures will increase travel efficiency compared to a comparable project at a comparable location.

The document *Exhibit 4: AB 900 Traffic Assessment for the 1045 Olive Street Project* specifies that the TDM package "could include" the following measures:

- Promotion and support of carpools and rideshares, including parking and transit incentives.
- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
- Unbundling of residential parking
- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
- Provide amenities to encourage the use of delivery services.
- Discounts for employees who utilize public transit to travel to the site.
- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
- Provide a free bike share service for residents.

- Participate in the City's Bike Share Program by providing an area for bike share facilities.

However, it does not commit to a particular combination of TDM measures or depth or intensity of implementation of any of the measures.

It goes on to specify: "The implementation of the TDM package would result in an estimated reduction of 15% of the vehicle trips to and from the residential element of the Proposed Project."

The amount of improvement in travel efficiency depends upon the actual strategies implemented, and the extent of implementation of those strategies. In order to meet the statutory requirement, the TDM strategies listed need to be implemented in a combination and to an extent that would achieve 15 percent trip reduction for the project. In addition to identifying TDM strategies that would achieve at a trip reduction of at least 15 percent, the performance of the TDM program must be monitored to ensure that the 15 percent reduction is achieved.

The **Mobility** Group
Transportation Strategies & Solutions

Memorandum

To: Alan Sako, ESA

From: Michael Bates, Iain Conway

Subject: 1045 S Olive Project – AB 900 Traffic Assessment - Revised

Date: April 3, 2018

This Memorandum provides a transportation assessment of the 1045 S Olive Project to determine whether it meets the transportation efficiency requirements for classification as an Environmental Leadership Development Project under California Assembly Bill 900 (AB 900).

1. Project Location

The Project Site is located in downtown Los Angeles, the dense, mixed-use urban core of the extensive metropolitan region. Downtown Los Angeles serves as the hub of the regional transit system with many regional rail and bus public transit services passing through or beginning and terminating services there. Downtown Los Angeles is also a highly walkable and bicycle-friendly area.

The Project Site is located at the northwest corner of Olive Street and 11th Street, and is bounded by Olive Street on the east, 11th Street on the south, an alley on the west and private property on the north. The block on which the Project is located is also bounded by Grand Avenue on the west and Olympic Boulevard to the north. The surrounding area includes a large range of newer mixed-use development, and older commercial, office, residential and warehouse uses.

The Project Site is directly served by Olive Street and 11th Street, which are designated as a Modified Avenue II and a Modified Collector Street respectively, in the City of Los Angeles Mobility Plan 2035. Adjacent streets are Grand Avenue and Olympic Boulevard which are designated as a Modified Avenue II and a Modified Avenue I respectively. There are bike lanes on Olive Street and on Grand Avenue.

The Project Site is located approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110).

The Project Site is located less than 0.5 miles from the Pico Metro Station at Pico Boulevard and Flower Street. The Pico Metro Station serves the Metro Blue Line (Downtown Los Angeles – Long Beach) and Metro Expo Line (Downtown Los Angeles – Santa Monica), which travel at 6-minute and 12-minute intervals during weekday peak hours. These services terminate at 7th Street Metro Center Station in Downtown Los Angeles, providing access to the Metro Red and Purple Lines. The Project Site is also located within 0.7 miles of the 7th Street/Metro Center Station, which serves the Metro Red Line (Downtown Los Angeles – North Hollywood / Universal City) and Metro Purple Line (Downtown Los Angeles – Koreatown), which travel at 5-minute intervals during weekday peak hours. The Metro Red and Purple Lines also provide access to Union Station, with connections to the Metro Gold Line and the Metrolink Commuter Rail system.

The 1.9 mile Metro Regional Connector Project is currently under construction to connect Union Station and the 7th Street/Metro Center Station and will serve Little Tokyo, the Arts District, Civic Center, The Historic Core, Broadway, Grand Avenue, Bunker Hill, Flower Street and the Financial District. Additionally, the Regional Connector will provide direct connections between the Metro Gold Line and the Blue, Expo, Red and Purple Lines at 7th Street/Metro Center Station, eliminating the need for passenger transfers.

The Project Site is located approximately 0.27 miles east of Figueroa Street. The MyFig Project is currently being implemented on Figueroa Street and will add protected bike lanes, enhanced sidewalks, landscaping and pedestrian facilities, which along with the existing northbound bus lane will transform the Figueroa Corridor into a multimodal street with improved transit, streetscape and landscaping features to better serve the needs of pedestrians, bicyclists, transit riders, and drivers alike. The MyFig Project will also install a protected bike lane and similar enhancements along the north side of 11th Street from Broadway to Figueroa Street.

The Los Angeles Streetcar is a streetcar project planned for downtown Los Angeles, which will run on streets in a loop connecting the Civic Center, Broadway Corridor, Financial District and 7th Street. In the vicinity of the Project, it will run south on Broadway, west on 11th Street immediately adjacent to the Project, and north on Figueroa Street.

Bicycle facilities in the Project Area include bike lanes on Olive Street, Grand Avenue and Spring Street (3 blocks east of the Project). Additionally, there are bike lanes planned on Flower Street (3 blocks west of the Project) and Broadway (2 blocks east of the Project), according to City of Los Angeles' Mobility Plan 2035.

Metro Bike Share is a bicycle-sharing system with approximately 60 stations in and around downtown Los Angeles. Many stations are located at transit hubs, such as Union Station and

7th Street/Metro Center Station. Access to the system is provided 24 hours per day and payment can be made for an individual trip or on a monthly basis. The nearest stations to the Project Site are located at 11th Street & Hope Street, 12th Street & Hill Street and Olympic Boulevard & Grand Avenue, each being approximately a two-block walk from the Project Site.

2. Project Description

The Project Site is currently occupied by four commercial buildings totaling 35,651 sq. ft. and approximately 5,952 square feet paved parking area. The four buildings are one-story in height and are reflective of the older single story development in the Downtown area. Existing active land uses include 14,653 sq. ft. of manufacturing space and 5,171 sq. ft. of retail space. The remaining 15,827 sq. ft. is currently vacant.

The Proposed Project is a mixed-use development comprising 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground and mezzanine levels. The commercial space has been conservatively assessed as half high-turnover restaurant and half quality restaurant for trip generation purposes.. The development would include a 61-story tower atop a nine level podium structure (Podium) for a total of 70 floors. Approximately 100,652 square feet of amenity/open space would be provided including a ground level public plaza with streetscaping, landscaping and public art display (Plaza). On-site open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop (Tower Roof Terrace) and within private balconies.

3. Site Access and Circulation

Vehicle access would be provided from one driveway on Olive Street, near the northern property line, and from two driveways on the alley between 11th Street and Olympic. Vehicle parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. An additional service driveway on the alley near the center of the Project Site would provide access to on-site loading and move-in/out services.

Pedestrian access to the Project Site would be provided from a 17-foot sidewalk along Olive Street. Access to the retail uses would be provided from a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street and the 17-foot sidewalk along Olive Street. Pedestrian access into the local neighborhood is facilitated by a midblock signalized pedestrian crosswalk on Olive Street between Olympic Boulevard and 11th Street and signalized crosswalks at all intersections in the vicinity of the Project. Additionally, there are midblock crosswalks on Grand Avenue south of 14th Street, on Hill Street (one block east of the Project) between 8th Street and 9th Street and between 11th Street and 12th Street, on Broadway (2 blocks east of the

Project) between 8th Street and 9th Street, between 9th Street and Olympic Boulevard, between Olympic Boulevard and 11th Street and between 11th Street and 12th Street.

The Project Site is located on the downtown bicycle network, comprising a bike lane on Grand Avenue, half a block west of the Project Site and by a bike lane running along Olive Street adjacent to the Project Site. The wider Project Area contains a high-level of bicycle access, with bike lanes as described earlier in Section 1.

4. Existing Transit Service

The Project Site is served by numerous transit lines within a one block walking distance on Olive Street, Grand Avenue, and Olympic Boulevard, including two Rapid Lines 770 and 728, eleven Metro lines 14, 28, 37, 70, 71, 76, 78, 79, 378, and 96, one Foothill Transit Line (FT Silver Streak), one Santa Monica Transit Line (BBB 10), and two LADOT Commuter Express Lines CE 431 and CE 437. There are twelve bus services on Olive Street, twelve services on Grand Avenue, nine services on Hill Street, six on Broadway, four on 9th Street, four on Olympic Boulevard, two on 11th Street and one on Pico Boulevard.

The Project Site is located within 0.5 miles of the Pico Light Rail Station, which provides services to the Metro Blue and Expo Lines. The Project Site is also located within 0.7 miles of the 7th Street Metro Center Station, which provides services to Metro Red and Purple Lines. The Metro Blue Line travels between Long Beach Transit Mall and 7th Street Metro Center at 6-minute intervals during weekday peak hours, the Metro Expo Line travels between Santa Monica and Downtown Los Angeles at 12-minute intervals during weekday peak hours, and the Metro Red and Purple Lines travel between North Hollywood and Downtown Los Angeles at 5-minute intervals during weekday peak hours.

5. Project Trip Generation and Vehicle Miles Travelled (VMT)

Trip generation for the Proposed Project was estimated using ITE's 9th Edition Trip Generation Manual, as shown in Table 1. ITE trip rates for Apartments, High-Turnover Restaurant and Quality Restaurant were used for the land uses of the Proposed Project and ITE trip rates for Manufacturing and Specialty Retail were used for the existing uses. The trip generation estimates were adjusted for trip credits for existing active land uses to be removed and reductions for pass-by, transit, walk and internal capture. The Proposed Project is estimated to generate 4,817 net daily trips, 359 net trips in the AM Peak Hour, comprising 79 net inbound trips and 280 net outbound trips and 440 net trips in the PM Peak Hour, comprising 287 net inbound trips and 153 net outbound trips.

The Project type and location enjoy a number of advantages that will reduce the number of trips that will be generated. These include:

- Removal of Existing Uses from the Project Site.
- Internal Capture within Project land uses.
- Use of Transit and Walk/Bike.
- Pass-by trips.
- Transportation Demand Management (TDM) measures.

In order to demonstrate the efficacy of these trip reductions, trip generation was estimated for the Proposed Project without trip credits for the existing active land uses and without reductions for pass-by, transit, walk/bike and internal capture, as shown in Table 2. Trip generation was estimated at 6,637 daily trips, 478 trips in the AM peak hour and 601 trips in the PM peak hour.

Table 2 also shows the estimated vehicle miles travelled (VMT) without trip reductions. Average trip lengths for each land use were estimated using the California Emissions Estimator Model (CalEEMod) for the South Coast Air Basin (LA County except for the Antelope Valley, Orange County, and the urbanized portions of Riverside and San Bernardino Counties). CalEEMod specifies average trip lengths for the South Coast Air Basin by trip purpose (Home-Work, Home-Shop, Home-Other, Commercial-Customer, Commercial-Work and Commercial-Nonwork). For each land use, CalEEMod specifies the proportion of trips that are of each trip purpose, thus enabling the calculation of average trip lengths by land use. Trip lengths were calculated for the Home-Work, Home-Shop, Home-Other trip purposes for the residential units, and for the for the Commercial-Customer, Commercial-Work and Commercial-Nonwork trip purposes for the commercial uses. Table 2 shows the average trip length for each land use. As shown in Table 2, the average trip length from CalEEMod for the South Coast Air Basin is estimated at 10.6 miles for residential apartments, 8.8 miles for high-turnover restaurant and 9.1 miles for quality restaurant. These trip lengths were applied to the Project trips to develop the total vehicle miles traveled (VMT) of the Project.

As shown in Table 2, the Proposed Project prior to accounting for applicable reductions is estimated to generate 68,078 daily VMT, 4,937 VMT in the AM Peak Hour and 6,189 VMT in the PM Peak Hour.

6. Comparable Project

The Proposed Project's performance has been assessed in comparison to a Comparable Project, which represents a baseline case. The Comparable Project has the same land uses and quantities as the Proposed Project, but does not have the location-specific nor the Proposed Project design-specific benefits nor the infill nature of the Proposed Project that would lead to trip reductions.

For the purposes of analysis it is considered that pass-by trip reductions would be equally applicable to the Comparable Project and the Proposed Project, as these reductions are generally applied to all projects in the City of Los Angeles regardless of location, in accordance with LADOT's Transportation Impact Study Guidelines (December 2016). Trip reductions made for the removal of existing buildings are associated with the infill nature of the site of the Proposed Project and would therefore be applicable to the Proposed Project and not to the Comparable Project. Trip reductions made for the Project being located in a highly walkable and transit-friendly area are location-specific benefits and as such, would only be applicable to the Proposed Project. Trip reductions made for the internal capture of trips and trip reductions due to the Transportation Demand Management package are considered to be design-specific benefits of the Proposed Project and therefore would be applicable to the Proposed Project and not to the Comparable Project.

As noted above, reductions for pass-by trips should apply to both the Comparable Project and the Proposed Project. As shown in Table 3, there would be a pass-by reduction of 148 daily trips, 9 trips in the AM peak hour and 12 trips in the PM peak hour. These trip reductions result in reductions of 1,314 daily VMT, 79 VMT in the AM peak hour and 106 VMT in the PM peak hour.

7. Project Related Reductions to Trip Generation and VMT

The Project's infill nature, location, design and TDM program will reduce vehicle trips and VMT compared with the Comparable Project. The quantitative analysis of these reductions to vehicle trips and VMT follows.

Removal of Existing Uses from Project Site

The project site currently has four existing buildings with a total of 19,824 sq. ft. existing active uses, of which 14,653 sq. ft. is manufacturing space and 5,171 sq. ft. is retail space. These land uses would be removed from the site prior to construction of the Proposed Project.

As shown in Table 4, removal of the existing active land uses would eliminate the trips currently generated by those uses, and would result in a reduction of 231 daily trips, 9 trips in the AM peak hour and 20 trips in the PM peak hour. These trip reductions result in reductions of 2,356 daily VMT, 117 VMT in the AM peak hour and 222 VMT in the PM peak hour.

Internal Capture Reduction

The Proposed Project restaurant space would provide a convenient local destination for the residential element of the Proposed Project without having to drive to other locations. It was estimated that 15% of the trips to and from the restaurant space would come from the onsite residential element of the Proposed Project.

As shown in Table 5, there would be an internal capture reduction of 203 daily trips, 11 trips in the AM peak hour and 16 trips in the PM peak hour. These trip reductions result in reductions of 1,811 daily VMT, 97 VMT in the AM peak hour and 143 VMT in the PM peak hour.

Transit & Walk/Bike Reduction

The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Proposed Project. Therefore, it was estimated that vehicle trips would be reduced by 20% due to transit and walk/bike trips, consistent with LADOT guidelines and methodology.

As shown in Table 6, the use of transit and walk/bike would reduce vehicle trips by 1,238 daily trips, 90 trips in the AM peak hour and 113 trips in the PM peak hour. These trip reductions result in reductions of 12,751 daily VMT, 933 VMT in the AM peak hour and 1,168 VMT in the PM peak hour.

Transportation Demand Management (TDM) Reduction

The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips, that could include the following measures:

- Promotion and support of carpools and rideshares, including parking and transit incentives.
- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package – to all new residents/employees with info on alternate modes and walk to destination opportunities.
- Unbundling of residential parking.

- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
- Provide amenities to encourage the use of delivery services.
- Discounts for employees who utilize public transit to travel to the site.
- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers / showers for residents and employees, etc.
- Provide a free bike share service for residents.
- Participate in the City's Bike Share Program by providing an area for bike share facilities.

The implementation of the TDM package would result in an estimated reduction of 15% of the vehicle trips to and from the residential element of the Proposed Project.

As shown in Table 7, the TDM program would result in a reduction of 758 daily residential trips, 55 trips in the AM peak hour and 69 trips in the PM peak hour. These trip reductions result in reductions of 7,838 daily VMT, 572 VMT in the AM peak hour and 716 VMT in the PM peak hour.

8. Total Proposed Project Trips and VMT

A summary of the total trips and VMT for the Proposed Project and comparison with the Comparable Project is shown in Table 8. It was estimated that the Proposed Project would generate 4,059 daily trips, resulting in 42,008 daily VMT. It was estimated that the Comparable Project would generate 6,489 daily trips, resulting in 66,764 daily VMT.

Table 9 shows a summary of absolute and proportional differences between the generated trips and VMT of the Proposed Project and the Comparable Project. It was estimated that the Proposed Project would generate 37% less daily trips than the Comparable Project, resulting in a reduction of 37% daily VMT compared with the Comparable Project. In the AM peak hour, it was estimated that the Proposed Project would generate 35% less trips than the Comparable Project, resulting in a reduction of 35% AM peak hour VMT compared with the Comparable Project. In the PM peak hour, it was estimated that the Proposed Project would generate 37%

less trips than the Comparable Project, resulting in a reduction of 37% PM peak hour VMT compared with the Comparable Project.

The substantial reductions in generated trips and VMT from the Comparable Project to the Proposed Project noted above are due to the TDM Program as well as the location-specific benefits, the design-specific benefits and the infill nature of the Proposed Project with respect to the Comparable Project.

The analysis shows that the Proposed Project considerably exceeds the threshold of 15% transportation efficiency that is required for the Environmental Leadership Development Project application. It is noted that a 15% reduction is achieved solely by the TDM Program proposed for the Project.

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

Daily Trips

Land Use Assumptions		Source [1] & Code	Quantity	Units	Daily			
						Trip Rate		Total Trips
Existing Uses								
Manufacturing [2,3]		ITE 140	14,653	SF		3.82		-56
(Reduction for transit trips) -	15%							8
(Reduction for walk/bike trips) -	5%							2
Net Manufacturing								-46
Specialty Retail [2,3]		ITE 826	5,171	SF		44.32		-229
(Reduction for transit trips) -	15%							34
(Reduction for walk/bike trips) -	5%							10
Net Specialty Retail								-185
Total Existing								-231
Proposed Uses								
Apartment [2]		ITE 220	794	DU		6.65		5,280
(Reduction for transit trips) -	15%							-792
(Reduction for walk/bike trips) -	5%							-224
Net Apartments								4,264
High-Turnover Restaurant [2]		ITE 932	6,252	SF		127.15		795
(Reduction for internal trips) -	15%							-119
(Reduction for transit trips) -	15%							-101
(Reduction for walk/bike trips) -	5%							-29
(Reduction for pass-by trips) -	20%							-109
Net High-Turnover Restaurant								437
Quality Restaurant [2]		ITE 931	6,252	SF		89.95		562
(Reduction for internal trips) -	15%							-84
(Reduction for transit trips) -	15%							-72
(Reduction for walk/bike trips) -	5%							-20
(Reduction for pass-by trips) -	10%							-39
Net Quality Restaurant								347
Total Proposed								5,048
Total Net								4,817

AM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	AM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.57	0.16	0.73	-8	-3	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-7	-2	-9
Specialty Retail [2,3,4]		ITE 826	5,171	SF	0.00	0.00	0.00	0	0	0
(Reduction for transit trips) -	15%							0	0	0
(Reduction for walk/bike trips) -	5%							0	0	0
Net Specialty Retail								0	0	0
Total Existing								-7	-2	-9
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.10	0.41	0.51	79	326	405
(Reduction for transit trips) -	15%							-12	-49	-61
(Reduction for walk/bike trips) -	5%							-3	-14	-17
Net Apartments								64	263	327
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.95	4.86	10.81	37	31	68
(Reduction for internal trips) -	15%							-6	-4	-10
(Reduction for transit trips) -	15%							-5	-4	-9
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	18	38
Quality Restaurant [2,5]		ITE 932	6,252	SF	0.45	0.36	0.81	3	2	5
(Reduction for internal trips) -	15%							-1	0	-1
(Reduction for transit trips) -	15%							0	-1	-1
(Reduction for walk/bike trips) -	5%							0	0	0
(Reduction for pass-by trips) -	10%							0	0	0
Net Quality Restaurant								2	1	3
Total Proposed								86	282	368
Total Net								79	280	359

Table 1 1045 Olive - Trip Generation Estimates

9/20/2017

PM Peak

Land Use Assumptions		Source [1] & Code	Quantity	Units	PM Peak Hour					
					Trip Rate			Total Trips		
					In	Out	Total	In	Out	Total
Existing Uses										
Manufacturing [2,3]		ITE 140	14,653	SF	0.26	0.47	0.73	-4	-7	-11
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	0	0
Net Manufacturing								-3	-6	-9
Specialty Retail [2,3]		ITE 826	5,171	SF	1.19	1.52	2.71	-6	-8	-14
(Reduction for transit trips) -	15%							1	1	2
(Reduction for walk/bike trips) -	5%							0	1	1
Net Specialty Retail								-5	-6	-11
Total Existing								-8	-12	-20
Proposed Uses										
Apartment [2]		ITE 220	794	DU	0.40	0.22	0.62	318	174	492
(Reduction for transit trips) -	15%							-48	-26	-74
(Reduction for walk/bike trips) -	5%							-14	-7	-21
Net Apartments								256	141	397
High-Turnover Restaurant [2]		ITE 932	6,252	SF	5.91	3.94	9.85	37	25	62
(Reduction for internal trips) -	15%							-6	-3	-9
(Reduction for transit trips) -	15%							-5	-3	-8
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	20%							-5	-4	-9
Net High-Turnover Restaurant								20	14	34
Quality Restaurant [2]		ITE 932	6,252	SF	5.02	2.47	7.49	31	16	47
(Reduction for internal trips) -	15%							-5	-2	-7
(Reduction for transit trips) -	15%							-4	-2	-6
(Reduction for walk/bike trips) -	5%							-1	-1	-2
(Reduction for pass-by trips) -	10%							-2	-1	-3
Net Quality Restaurant								19	10	29
Total Proposed								295	165	460
Total Net								287	153	440

Notes:

1. ITE Rates from Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington, DC, 2012, except otherwise noted.
2. Trip rate reductions were applied per LADOT's Transportation Impact Study Guidelines, December 2016.
3. Existing land use data from Crescent Heights and site observations on 9/5/2017.
4. Existing Specialty Retail is closed on weekday mornings, therefore no existing trip credit is claimed for the AM peak hour.
5. Directional Distribution for AM peak from High-Turnover Restaurant, as non published for Quality Restaurant.

Table 2. Proposed Project - Total Unadjusted Project Trips and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation Estimates (Without Trip Reductions)								
Apartments	794 DU	5,280	79	326	405	318	174	492
High-Turnover Restaurant	6,252 SF	795	37	31	68	37	25	62
Quality Restaurant	6,252 SF	562	3	2	5	31	16	47
Total Project Trips Before Reductions		6,637	119	359	478	386	215	601
Vehicle Miles Travelled (Without Trip Reductions)								
Apartments	10.6 Miles	55,968	837	3,456	4,293	3,371	1,844	5,215
High-Turnover Restaurant	8.8 Miles	6,996	326	273	598	326	220	546
Quality Restaurant	9.1 Miles	5,114	27	18	46	282	146	428
Gross Project VMT Before Reductions		68,078	1,190	3,747	4,937	3,979	2,210	6,189

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- DU = Dwelling Unit, SF = Square Feet.

Table 3. Comparable Project - Trips Generated with Pass-by Trip Reduction and Conversion to Vehicle Miles Travelled 9/22/2017

Land Use	*Pass-by Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	20%	109	5	4	9	5	4	9
Quality Restaurant	10%	39	0	0	0	2	1	3
Subtotal - Pass-by Trip Reduction		148	5	4	9	7	5	12
Total Project Trips with Pass-by Reduction		6,489	114	355	469	379	210	589
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	959	44	35	79	44	35	79
Quality Restaurant	9.1 Miles	355	0	0	0	18	9	27
Subtotal - Pass-by VMT Reduction		1,314	44	35	79	62	44	106
Comparable Project VMT		66,764	1,146	3,712	4,858	3,917	2,166	6,083

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Pass-by Trip Reductions based on estimates shown in Table 1.
- Comparable Project VMT calculated as the difference between the Gross Project VMT Before Reductions from Table 2 and the Pass-by VMT Reduction.

Table 4. Proposed Project - Existing Land Uses to be Removed - Trip Reduction and Conversion to Vehicle Miles Travelled

4/3/2018

Land Use	*Land Use Quantity / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trips								
Manufacturing	14,653 SF	46	7	2	9	3	6	9
Retail	5,171 SF	185	0	0	0	5	6	11
Existing Project Site Trips		231	7	2	9	8	12	20
% Trips Reduced due to Land Uses Removed		4%	6%	1%	2%	2%	6%	3%
Vehicle Miles Travelled								
Manufacturing	13.0 Miles	598	91	26	117	39	78	117
Retail	9.5 Miles	1,758	0	0	0	48	57	105
Existing Project Site VMT		2,356	91	26	117	87	135	222
% VMT Reduced due to Land Uses Removed		4%	8%	1%	2%	2%	6%	4%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Existing Land Use Trip Reductions based on estimates shown in Table 1.

Table 5. Proposed Project - Internal Capture - Trip Reduction and Conversion to Vehicle Miles Travelled 4/3/2018

Land Use	*Internal Capture Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	0%	0	0	0	0	0	0	0
High-Turnover Restaurant	15%	119	6	4	10	6	3	9
Quality Restaurant	15%	84	0	1	1	5	2	7
Trips Reduced by Internal Capture		203	6	5	11	11	5	16
% Trips Reduced by Internal Capture		3%	6%	1%	2%	3%	3%	3%
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	0	0	0	0	0	0	0
High-Turnover Restaurant	8.8 Miles	1,047	53	35	88	53	26	79
Quality Restaurant	9.1 Miles	764	0	9	9	46	18	64
VMT Reduced by Internal Capture		1,811	53	44	97	99	44	143
% VMT Reduced by Internal Capture		3%	5%	1%	2%	3%	2%	2%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Internal Capture Trip Reductions based on estimates shown in Table 1.

Table 6. Proposed Project - Transit & Walk/Bike - Trip Reduction and Conversion to Vehicle Miles Travelled 4/3/2018

Land Use	*Transit & Walk Trip Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	20%	1,016	15	63	78	62	33	95
High-Turnover Restaurant	20%	130	6	5	11	6	4	10
Quality Restaurant	20%	92	0	1	1	5	3	8
Trips Reduced by Transit & Walk		1,238	21	69	90	73	40	113
% Trips Reduced by Transit & Walk		20%	20%	20%	20%	20%	20%	20%

Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	10,770	159	668	827	657	350	1,007
High-Turnover Restaurant	8.8 Miles	1,144	53	44	97	53	35	88
Quality Restaurant	9.1 Miles	837	0	9	9	46	27	73
VMT Reduced by Transit & Walk		12,751	212	721	933	756	412	1,168
% VMT Reduced by Transit & Walk		20%	20%	20%	20%	20%	20%	20%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transit & Walk Trip reductions based on estimates shown in Table 1.

Table 7. Proposed Project - Transportation Demand Management - Trip Reduction and Conversion to Vehicle Miles Travelled 4/3/2018

Land Use	*Transportation Demand Management Reduction / Average Trip Length*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Reduction								
Apartments	15%	640	10	39	49	38	22	60
High-Turnover Restaurant	15%	66	3	3	6	3	2	5
Quality Restaurant	15%	52	0	0	0	3	1	4
Trips Reduced by Transportation Demand Management		758	13	42	55	44	25	69
% Trips Reduced by Transportation Demand Management		15%	15%	15%	15%	15%	15%	15%
Vehicle Miles Travelled Reduction								
Apartments	10.6 Miles	6,784	106	413	519	403	233	636
High-Turnover Restaurant	8.8 Miles	581	27	26	53	26	18	44
Quality Restaurant	9.1 Miles	473	0	0	0	27	9	36
VMT Reduced by Transportation Demand Management		7,838	133	439	572	456	260	716
% VMT Reduced by Transportation Demand Management		15%	15%	15%	15%	15%	15%	15%

Notes:

- Average Trip Lengths for South Coast Air Basin from California Emissions Estimator Model (CalEEMod) User Manual, Appendix D.
- Transportation Demand Management Trip Reductions based on net trip generation estimates for proposed land uses shown in Table 1, multiplied by the Transportation Demand Management Reduction %.

Table 8. Comparison of Proposed Project to Comparable Project 4/3/2018

Trip Reductions and Conversion to Vehicle Miles Travelled

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Existing Land Use Trip Reduction (From Table 4)	231	7	2	9	8	12	20
Internal Capture Trip Reduction (From Table 5)	203	7	4	11	11	5	16
Transit & Walk Trip Reduction (From Table 6)	1,238	21	69	90	73	40	113
TDM Program Trip Reduction (From Table 7)	758	13	42	55	44	25	69
Net Proposed Project Trips	4,059	66	238	304	243	128	371
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Existing Land Use VMT Reduction (From Table 4)	2,356	91	26	117	87	135	222
Internal Capture VMT Reduction (From Table 5)	1,811	53	44	97	99	44	143
Transit & Walk VMT Reduction (From Table 6)	12,751	212	721	933	756	412	1,168
TDM Program VMT Reduction (From Table 7)	7,838	133	439	572	456	260	716
Net Proposed Project VMT	42,008	657	2,482	3,139	2,519	1,315	3,834

Table 9. Comparison of Proposed Project to Comparable Project
Percentage Trip Reductions and Percentage Vehicle Miles Travelled Reductions

4/3/2018

Land Use	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*
Trips							
Comparable Project (From Table 3)	6,489	114	355	469	379	210	589
Proposed Project (From Table 8)	4,059	66	238	304	243	128	371
Trip Reduction from Comparable Project to Proposed Project	2,430	48	117	165	136	82	218
Percentage Trip Reduction from Comparable Project to Proposed Project	37%	42%	33%	35%	36%	39%	37%
Vehicle Miles Travelled							
Comparable Project (From Table 3)	66,764	1,146	3,712	4,858	3,917	2,166	6,083
Proposed Project (From Table 8)	42,008	657	2,482	3,139	2,519	1,315	3,834
VMT Reduction from Comparable Project to Proposed Project	24,756	489	1,230	1,719	1,398	851	2,249
Percentage VMT Reduction from Comparable Project to Proposed Project	37%	43%	33%	35%	36%	39%	37%

CALIFORNIA
AIR RESOURCES BOARD

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March 19, 2018

Mr. Ken Alex, Director
Office of Planning and Research
Office of Governor Edmund G. Brown, Jr.
1400 10th Street
Sacramento, California 95814

Dear Mr. Alex:

The Jobs and Economic Improvement through Environmental Leadership Act (Assembly Bill 900, statutes of 2011) authorizes the Governor to certify a leadership project for streamlining under the California Environmental Quality Act (CEQA) if the project meets certain conditions. One condition for certification is that the project does not result in any net additional emissions of greenhouse gases (GHG), including GHG emissions from employee transportation, as determined by the California Air Resources Board (CARB).

1045 Olive, LLC (the Applicant) submitted an original application to CARB on December 22, 2017, and clarifying documentations on January 22, 2018, for the proposed 1045 Olive Street project (Proposed Project). As required by the Governor's Guidelines for Streamlining Judicial Review under CEQA, the application includes proposed GHG quantification methodologies and supporting documentation. CARB staff conducted an evaluation of the GHG emission estimates and voluntary improvement measures submitted by the Applicant, and confirmed that the Applicant's methodology, calculations, and documentation are adequate. Based on the documentation submitted by the Applicant, CARB has determined that the Proposed Project will not result in any net additional GHG emissions for purposes of certification under AB 900 once the conditions of approval of the project described in the enclosed staff analysis document are satisfied. CARB staff's evaluation and an Executive Order noting CARB's determination are enclosed.

If you have any questions regarding the evaluation or determination, please contact Dr. Michael Benjamin, Chief of Air Quality Planning and Science Division at (916) 201-8968 or by email at michael.benjamin@arb.ca.gov.

Sincerely,

Richard W. Corey
Executive Officer

Enclosures

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER G-18-018

Relating to Determination of No Net Additional Greenhouse Gas Emissions Under Public Resources Code section 21183, subdivision (c) for 1045 Olive Street Project

WHEREAS, in September 2011, Governor Brown signed the "Jobs and Economic Improvement through Environmental Leadership Act" (AB 900);

WHEREAS, under AB 900, the Governor may certify certain projects for judicial streamlining under the California Environmental Quality Act (CEQA) if certain conditions are met;

WHEREAS, under California Public Resources Code section 21183, subdivision (c), one condition for the Governor's certification is that the project does not result in any net additional emission of greenhouse gases (GHG), as determined by the California Air Resources Board (CARB);

WHEREAS, the Governor's Guidelines for Streamlining Judicial Review under the California Environmental Quality Act require for purposes of CARB's determination on GHG emissions that an applicant submit electronically to CARB a proposed methodology for quantifying the project's net additional GHG emissions and documentation that the project does not result in any net additional GHG emissions;

WHEREAS, pursuant to the Governor's Guidelines, 1045 Olive, LLC (the Applicant) submitted its initial proposed GHG quantification methodologies and documentation to CARB on the proposed 1045 Olive Street Project (proposed project) on December 22, 2017, and clarifying documentations submitted on January 22, 2018;

WHEREAS, the application submitted for the proposed project estimates the project's net additional GHG emissions as follows:

1. Construction GHG Emissions: Additional 7,113 metric tons CO2e emissions from project construction and demolition activities. Construction-generated GHG emissions were estimated from equipment used for construction activities and from both on-site and off-site vehicles and equipment;

2. Operation-Related GHG Emissions: Additional 9,681 metric tons CO2e emissions during the first full year of project operation (2023) and declining operational emissions in future years over the lifetime of the project.

WHEREAS, in the application, the applicant proposes to secure 7,113 metric tons of one-time carbon credits to offset emissions generated during construction and to secure

230,886 metric tons of carbon credits on a net present value basis to offset the net increase in emissions generated during project operation through purchasing credible offset credits issued by a recognized and reputable carbon registry to fully offset these identified construction and operational GHG emissions;

WHEREAS, on September 1, 2017, the applicant has entered into a binding and enforceable agreement with the City of Los Angeles (the lead agency) that all mitigation measures required to certify the project under AB 900 shall be conditions of approval of the project, and those conditions will be fully monitored and enforced by the lead agency for the life of the obligation, pursuant to Public Resources Code section 21183, subdivision (e).

WHEREAS, CARB staff reviewed and evaluated the application in consultation with the lead agency (the City of Los Angeles);

WHEREAS, CARB staff conducted an evaluation of the GHG emission estimates and voluntary mitigation included in the application submitted by the applicant and confirmed the documentation provides an adequate technical basis for estimating total GHG emissions and voluntary mitigation for the proposed project;

WHEREAS, CARB's review and determination on the proposed project's GHG emissions is for the limited purpose of the Governor's findings and certification under AB 900 and should not be construed as meeting any other requirement under State or federal law, including CEQA; the lead agency remains responsible for full CEQA compliance for this project;

NOW, THEREFORE, based on CARB Staff's Evaluation (Attachment 1) of the documentation submitted by the Applicant (Attachment 2), I determine that the 1045 Olive Street Project will not result in any net additional GHG emissions pursuant to Public Resources Code section 21183, subdivision (c) for purposes of certification under AB 900.

Executed this nineteenth day of March 2018, at Sacramento, California.

Richard W. Corey
Executive Officer

Attachments

1. CARB Staff Evaluation of AB 900 Application for 1045 Olive Street Project
2. 1045 Olive Street Project Greenhouse Gas Emissions Methodology Documentation for AB 900 Application

CARB Staff Evaluation of AB 900 Application for 1045 Olive Street Project

February 26, 2018

I. Introduction

1045 Olive, LLC (Applicant) proposed a new mixed-use development (Project) on an approximately 0.96-acre site located at the northwest corner of Olive Street and 11th Street (Project Site) in Downtown Los Angeles, California. The Project Site currently contains four existing single-story commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. The Project would demolish and remove the four existing buildings and replaced them with a new 751,777 square foot (net) mixed-use high-rise building.

The development would include a 61-story tower atop a nine level podium structure for a total of 70 floors, up to 810 feet in height. The Project would include 739,273 square feet of residential uses (zoning area) with 794 residential units, and 12,504 square feet of commercial uses accessible at the ground level. Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements, with a total of 891 spaces (878 residential and 13 commercial). Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 886 bicycle spaces provided within the parking garage on ground level, mezzanine and one level below grade.

The Applicant is seeking certification for the project under Assembly Bill 900 (AB 900), the Jobs and Economic Improvement through Environmental Leadership Act.

AB 900 provides for streamlined judicial review under the California Environmental Quality Act (CEQA) if certain conditions are met. One condition is that the proposed project does not result in any net additional greenhouse gas (GHG) emissions as determined by the California Air Resources Board (CARB). This is the only condition that involves a determination by CARB. CARB staff prepared this technical evaluation of the GHG emissions from the proposed project as part of its determination.

This evaluation includes an executive summary, an overview of the AB 900 zero net additional GHG emissions requirement, a brief description of the proposed project, a technical review and assessment of GHG emissions information provided by the Applicant in its AB 900 application, and CARB staff's recommendation on the AB 900 GHG emissions determination for the proposed project.

II. Executive Summary

CARB staff reviewed the projected GHG emissions provided by the Applicant and confirmed the GHG emission factors used to estimate construction and operational emissions. Staff concurs with the GHG quantification in the Applicant's proposal (Attachment 2).

Based on an evaluation of the documentation provided by the Applicant, CARB staff concludes that, with commitments to purchase voluntary carbon credits documented in Attachment 2, the proposed project would not result in any net additional GHG emissions relative to the baseline as summarized in Tables 1 and 2 below. CARB staff confirms that the proposed project would meet the GHG emissions requirements of the Jobs and Economic Improvement through Environmental Leadership Act. (Pub. Resources Code, §21178 et seq.) A detailed description of emissions by source is reviewed in subsequent sections.

Table 1 shows project GHG emissions generated by construction activities. Project construction is expected to be completed over 3.5 years, with demolition activities beginning in 2019. The Applicant has committed to offset the GHG emissions generated during project construction. The Applicant will provide courtesy copies of the calculations to CARB and the Governor's Office. Additionally, the Applicant has agreed to enter into one or more contracts to purchase voluntary carbon credits issued by a recognized and reputable carbon registry in an amount sufficient to offset the construction emissions and submit copies of executed contracts for purchased carbon credits to CARB and the Governor's Office.

Table 1: Project Construction-Generated GHG Emissions[1]

Construction Year	GHG Emissions (MT CO_2e/year)
2019	1,262
2020	1,678
2021	2,666
2022	1,507
Total	7,113
GHG Credits Required[2]	**7,113**

Notes:
GHG = greenhouse gas; MT CO_2e = Metric tons carbon dioxide equivalent;
[1] Source: as documented in Attachment 2, and confirmed by CARB staff.
[2] Applicant committed to purchase carbon credits in an amount sufficient to offset net increase in construction-related GHG emissions. The project would obtain offsets using the following prioritization: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry.

Table 2 summarizes the net increase in project operation related GHG emissions during a 30-year analysis horizon. The continued operation of the existing land uses that would be demolished under the proposed project serves as the reference point for the purpose of defining a baseline. The Applicant has committed to execute contracts to offset the net increase in GHG emissions generated during project operation for any building in the project prior to issuance of any Certificate of Occupancy for that building. The Applicant will purchase voluntary carbon credits for the net increase in operational emissions on a net-present value basis. The Applicant has agreed to submit copies of executed contracts for purchased carbon credits to CARB and the Governor's Office. The commitment to enter into contracts to offset net additional GHG emissions will be a condition of project approval.

Table 2: Comparison of Baseline and Project Operation-Related GHG Emissions[1]

Year[2]	GHG Emissions (MT CO_2e/year)			
	Baseline	Proposed Project	Difference	GHG Credits Required[3]
2022	468	4,133	3,665	3,665
2023	468	9,681	9,213	9,213
2024	468	9,296	8,828	8,828
2025	468	9,096	8,628	8,628
2026	468	8,928	8,460	8,460
2027	468	8,622	8,154	8,154
2028	468	8,492	8,024	8,024
2029	468	8,378	7,910	7,910
2030	468	8,127	7,659	7,659
2031	468	8,045	7,577	7,577
2032	468	7,970	7,502	7,502
2033	468	7,904	7,436	7,436
2034	468	7,849	7,381	7,381
2035	468	7,804	7,336	7,336
2036	468	7,771	7,303	7,303
2037	468	7,743	7,275	7,275
2038	468	7,722	7,254	7,254
2039	468	7,707	7,239	7,239
2040	468	7,696	7,228	7,228
2041	468	7,688	7,220	7,220
2042	468	7,684	7,216	7,216
2043	468	7,688	7,220	7,220
2044	468	7,688	7,220	7,220
2045	468	7,690	7,222	7,222
2046	468	7,695	7,227	7,227
2047	468	7,700	7,232	7,232
2048	468	7,707	7,239	7,239
2049	468	7,715	7,247	7,247
2050	468	7,725	7,257	7,257
2051	468	7,725	7,257	7,257
2052	468	7,725	7,257	7,257
Total				**230,886**

Notes: GHG = greenhouse gas; MT CO_2e = Metric tons carbon dioxide equivalent.
[1] Source: as documented in Attachment 2, and confirmed by CARB staff.

[2] Applicant uses an analysis horizon of 30 years, with first year of occupancy as early as August 2022. Therefore 2023 represents the first full year of operation.
[3] Applicant commits to purchase carbon credits in an amount sufficient to offset net increase in operation-related GHG emissions. The project would obtain offsets using the following prioritization: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry.

III. Overview of AB 900

AB 900, as amended by SB 743 (2013) and SB 734 (2016) provides streamlined judicial review for development projects if, among other conditions, the "project does not result in any net additional emissions of greenhouse gases, including greenhouse gas emissions from employee transportation, as determined by the State Air Resources Board pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code." (Pub. Resources Code, §21183, subd. (c).)

The Governor's Guidelines for AB 900 applications require Applicants to submit a proposed methodology for quantifying the project's GHG emissions and documentation that the project will not result in any net additional GHG emissions. The documentation must quantify direct and indirect GHG emissions associated with the project's construction and operation, including GHG emissions from employee transportation, and the net emissions of the project after accounting for any mitigation measures. The project's net emissions, after mitigation, must be monitored and enforced consistent with Public Resources Code section 21183, subdivision (e).

The role of CARB in reviewing AB 900 applications for purposes of the Governor's certification is limited to an evaluation of the quantification methods and documentation submitted by the Applicant to determine whether the project would result in no net additional emissions of GHG emissions. CARB staff evaluated the technical elements of the project application, including existing emissions in the absence of the project (i.e., baseline), input data and assumptions used for emissions and mitigation calculations, quantification methods, and an estimate of the project's net GHG emissions after any mitigation.

IV. Existing Conditions

The proposed project site is located at 1045 S. Olive Street in Downtown Los Angeles. The approximately 0.96-acre site occupies a parcel on the southeast corner of the block bounded by 11th Street to the southwest and S. Olive Street to the southeast. The property currently contains four existing commercial buildings totaling 35,651 square feet and 5,952 square feet of paved parking and hardscape area. Existing active land uses include 14,653 square feet of manufacturing space and 5,171 square feet of retail space. The remaining 15,827 square feet is currently vacant. The buildings were originally constructed between about the 1910s to the 1950s.

V. Proposed Project Description

The Project Site is located in the Downtown area and South Park community of the City of Los Angeles (City). The Project Site lies within the southeast quadrant of the block that is surrounded by Olive Street on the east, 11th Street on the south, Grand Avenue on the west and Olympic Boulevard on the north. The block is split by a south to north alley at midblock between S Olive Street and S Grand Avenue. The alley serves as the western boundary of the Project Site.

The Project would remove four existing commercial buildings on the Project Site, and would construct in their place an approximately 751,777 square foot mixed-use high-rise building containing residential condominium units and commercial use spaces along Olive Street and 11th Street. The Project would also include approximately 10,652 square feet of open space. The maximum building height would be 810 feet (approximately 70 stories), and the floor area ratio (FAR) for the transit area mixed use Project would be 13:1.

The development would include a 61-story tower atop a nine level podium structure for a total of 70 floors, up to 810 feet in height. The Project would include a maximum of 794 residential units and 12,504 square feet of neighborhood serving commercial uses located at the ground level. The residential units would be mostly located within the residential tower; however, approximately 40 units, would be located along the top five levels of the Podium facing Olive Street and 11th Street. Approximately 103,380 square feet of amenity/open space would be provided, including a ground level public plaza with streetscaping, landscaping and a public art display. Open space and recreation facilities for residents would be located atop the Podium (10th Floor Terrace), at mid-tower, on a terrace on the tower rooftop and within private balconies. At the pedestrian level, the Project would provide a 17- foot sidewalk along Olive Street and a 15-foot sidewalk (including a 3-foot sidewalk easement) along 11th Street.

The Project's 12,504 square feet of commercial space would be located on the ground level. Access to the individual commercial units would be from 11th Street, Olive Street and the Plaza area. The specific commercial uses may vary; however, it is expected that a substantial amount of the commercial area would be devoted to restaurant uses. For the purposes of assessing GHG emissions, this assessment conservatively assumes that the commercial space would be restaurant uses, which generate greater environmental impacts than retail uses.

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line, and from two entrances on the alley between 11th Street and Olympic Boulevard. An on-site loading and move-in/out service area would also be accessed from the alley near the center of the Project Site. Vehicle

parking would be provided within 6 subterranean parking levels and in 8 levels of parking above grade within the Podium. The Project would provide up to 891 parking spaces, and up to 886 bicycle spaces.

There are no trees located on the Project Site; however, five street trees are located along the street-side edge of Olive Street. The Project would include the addition of 137 canopy trees and just over approximately 0.2 acres of planting area of native plants, shrubs, perennials, and ground-cover at the Project Site. The Project would provide a large elevated garden on the 8th and 10th floors of the building, three outdoor amenity spaces with planting areas and canopy trees, and a rooftop garden with planting areas and canopy trees. Landscaping would be provided along the street edges and throughout all of the Project's open space and would be selected from a large pallet of native plants.

Construction of the Project would be completed over an approximately 3.5-year period. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

The baseline and proposed land uses are summarized in Table 3.

Table 3: Baseline and Proposed Land Uses

Land Use Type	Baseline Land Uses to be Demolished	Proposed Land Uses
Residential/Apartments	-	739,273 sf (794 dwelling units)
Retail	5,171 sf	-
Commercial (Restaurant)	-	12,504 sf
Manufacturing	14,653 sf	-
Amenities (Exterior)	-	37,927 sf
Amenities (Interior)	-	23,025 sf
Private Balcony Space	-	39,700 sf
Public Plaza Area	-	2,728 sf
Parking	5,952 sf	426,458 sf (891 spaces)
Vacant	15,827 sf	-

Notes:
du = dwelling units, sf = square feet
Source: as documented in Attachment 2, and confirmed by CARB staff.

VI. Technical Review and Assessment

ESA, on behalf of the Applicant, prepared a GHG emissions assessment for the proposed project to demonstrate that the requirements of AB 900 can be met. A full copy of this proposal can be found in Attachment 2.

The Applicant relied upon a variety of sources for activity data and emission factors to quantify GHG emissions. This CARB staff evaluation is focused on reviewing the data sources, emission factors, emission calculations, and assumptions used for the application, and determining whether these sources and assumptions are reasonable.

The Applicant relied upon Version 2016.3.2 of the California Emissions Estimator Model (CalEEMod), a widely-used emissions quantification tool developed in coordination with local air districts to quantify criteria pollutant and GHG emissions from land use development projects in California. CalEEMod uses widely-accepted sources for emission estimates combined with appropriate default data that can be used if site-specific information is not available. CalEEMod is populated with data from the United States Environmental Protection Agency AP-42 emission factors, CARB's on-road and off-road equipment emission models such as the Emission Factor 2014 model (EMFAC2014), and the Off-road Emissions Inventory Program model (OFFROAD). The Applicant used the latest CalEEMod version including correction factors to account for compliance with the 2016 Title 24 Building Standards Code, in combination with project-specific data and CARB's EMFAC 2014 mobile-source emission factors, to calculate GHG emissions from construction and operational emissions.

VII. Project Construction Emissions

Construction-related GHG emissions, including demolition-related emissions, are one-time, direct emissions and would occur over an approximately 3.5 year construction period. The Applicant estimated GHG emissions associated with project construction by using the CalEEMod tool. With some exceptions, the Applicant used CalEEMod default settings to generate construction-related GHG emissions. The Applicant estimates a total of 7,113 metric tons carbon dioxide equivalent (MT CO_2e) over the project construction period, as shown in Table 1. Construction-related GHG emissions reflect the types of equipment expected and the number of hours of operation anticipated over the construction schedule. This includes heavy-duty equipment, such as refuse hauling trucks, excavators, cranes, and conventional work vehicles.

CARB staff concluded that the methodology and estimated GHG emissions provided by the Applicant for construction are appropriate.

VIII. Baseline Operational Emissions

Operational emissions from land uses at the existing project site that would be demolished and removed as part of the project represent baseline conditions. Operational emissions in year 2018 serves as the baseline for purposes of this analysis, which represents existing conditions the year before demolition and construction for the project. GHG emissions were quantified for mobile, electricity, natural gas, area, solid waste, water, and wastewater-related sources. The application states that GHG emissions associated with existing conditions in 2018 are estimated as 468 MT CO_2e.

CARB staff evaluated the Applicant's GHG emission estimations, demand factors, and assumptions used in the Applicant's baseline calculations, summarized in Table 2. CARB staff concluded that the methodology and estimated baseline GHG emissions provided by the Applicant are appropriate.

IX. Proposed Project Operational Emissions

Operational GHG emission sources from the proposed project include mobile, electricity, natural gas, area, stationary, solid waste, water, and wastewater sources. Operational GHG emissions from the proposed project were assumed to begin in August 2022.

The Project will achieve the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Gold Certification and will be designed and operated to meet or exceed the applicable requirements of the State of California Green Building Standards Code and the City of Los Angeles Green Building Code. A summary of key green building and LEED measures are provided below:

- The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.
- The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative- fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.
- The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.
- The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

- The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

Although the Project resides within the Los Angeles Department of Water and Power (LADWP) domain, the Applicant has chosen to use the option of a statewide electricity factor. Therefore, consistent with CARB guidance on statewide electricity emission factors for use with AB 900 projects, a CO_2 emission factor of 595 pounds of CO_2 per MWh was used for electricity emissions for Project operational year 2023. This emission factor reflects a 2020 power grid in compliance with the 33 percent Renewable Portfolio Standard. Future year CO_2 emission factors were scaled proportionately based on the future year renewable energy targets of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Emission factors for CH4 and N2O were obtained from CalEEMod.

Mobile-source emissions were derived from estimates of vehicle miles traveled (VMT) induced by the Project, assumed fleet mix of the vehicles involved and associated emissions factors. The estimated VMT based on each land use were determined using CalEEMod. This VMT estimate was then reduced based on the AB 900 Traffic Assessment prepared by the Mobility Group. A summary of key characteristics resulting in VMT reductions from the default CalEEMod estimates are provided below:

- Internal Capture Reduction: The Project's restaurant space would provide a convenient local destination for the residential element of the Project without having to drive to other locations. It was estimated that a reduction of 15 percent of the trips to and from the restaurant space would come from the on-site residential element of the Project.

- Transit and Walk/Bike Reduction: The Project is located in a highly-walkable area of downtown Los Angeles with a high level of provision of bicycle facilities and excellent access to the highest level of transit service in Los Angeles, that will provide convenient access to local employment, shopping and entertainment opportunities without using a car for the residents of the Project. Therefore, it was estimated that vehicle trips would be reduced by 20 percent due to transit and walk/bike trips, consistent with Los Angeles Department of Transportation (LADOT) guidelines and methodology.

- Transportation Demand Management (TDM) Reduction: The Project proposes a TDM package to encourage the use of non-auto modes and reduce vehicle trips that could include the following measures:
  - Promotion and support of carpools and rideshares, including parking and transit incentives.

- Preferential parking for carpools and vanpools for employees.
- Provide on-site real-time information displays to make available real-time information on car-sharing, transit, vanpools, taxis.
- External and internal multimodal wayfinding signage.
- Enroll tenants in trip tracking applications, if applicable.
- Transit Welcome Package - to all new residents/employees with information on alternate modes and walk destination opportunities.
- Unbundling of residential parking
- Provide off-street residential and retail parking, and freight-loading spaces, and participate in a Car-Share Program to provide spaces for car-share vehicles.
- Pursue with the City the implementation of on-street commercial loading spaces for deliveries and drop-off.
- Pursue with the City the implementation of on-street passenger drop-off spaces.
- Provide access to collapsible shopping carts and/or cargo bike for ease of local shopping.
- Discounts for employees who utilize public transit to travel to site.
- On-site bicycle amenities such as access to free bicycles for residential guests, on-site repair station and bicycle racks, and lockers/showers for residents and employees, etc.
- Participate in the City's Bike Share Program by providing an area for bike share facilities.

The implementation of the TDM package would result in an estimated reduction of 10 percent of the vehicle trips to and from the residential element of the Proposed Project.

- Pass-by Trip Reduction: The Project's commercial restaurant space would provide a convenient local destination for residents in the local neighborhood without having to drive to other locations. It was estimated that a reduction of 20 percent of trips to and from the restaurant space would result from pass-by customers.

This assessment uses the South Coast Air Basin motor vehicle fleet mix and the fleet average calendar year emissions factors from EMFAC2014 to estimate mobile source GHG emissions.

CalEEMod default emission factors and calculation methods were also used to estimate GHG emissions from natural gas, incorporating the above mentioned reductions in energy use from the USGBC LEED Gold Certification.

Emissions from solid waste disposal used the CalEEMod model with allowed outside inputs for waste disposal and diversion rates obtained from the City of Los Angeles and CalRecycle.

Emissions from water consumption used CalEEMod defaults with additional reductions in water usage incorporated from the USGBC LEED Gold Certification detailed above. The electricity usage related to water supply, treatment, distribution and wastewater treatment used the same statewide emission factors for electricity as were used for on-site electricity calculations.

Emissions from area sources, including equipment used to maintain landscaping, such as lawnmowers and trimmers, were estimated using CalEEMod defaults. The only additional stationary source of emissions is an on-site emergency generator with an estimated capacity rated at approximately 708 kilowatts (950 horsepower), which would provide emergency power primarily for lighting and other emergency building systems. Emissions of GHGs would be generated during maintenance and testing operations and emissions were estimated separately outside of the CalEEMod software using U.S. Environmental Protection Agency (U.S. EPA) emission factors and CalEEMod load factors. Emergency generators are permitted by the SCAQMD and regulated under SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines). Maintenance and testing would not occur daily, but rather periodically, up to 50 hours per year per Rule 1470.

Carbon sequestration was estimated using CalEEMod. The Project's net addition of 137 canopy trees and just over 0.2 acres of native plants, shrubs, perennials, and ground-cover are estimated to sequester 98 metric tons of CO_2 over their active growing period of 20 years (or about 5 metric tons of CO_2 per year for the first 20 years of the Project's operation). The effects of carbon sequestration from canopy trees assumes the Intergovernmental Panel on Climate Change (IPCC) active growing period of 20 years. Accumulation of carbon in biomass decreases as the trees age and would eventually be offset by clipping, pruning, and tree death. Therefore, GHG reductions from carbon sequestration are only applied to the first 20 years of the project's operation.

The Applicant's assumptions and inputs are reasonably conservative, and represent an upper-bound for the net increase in GHG emissions that could occur. CARB staff evaluated the proposed project's emission calculations, demand factors, and assumptions used to estimate operational GHG emissions and concluded that the methodology and estimated operational GHG emissions provided by the Applicant are appropriate.

Based on the Applicant's proposal, annual project operational emissions would exceed baseline throughout the lifetime of the project, as summarized in Table 2.

X. Method to Offset Emissions

Under the GHG quantification methodology used by the Applicant, the proposed project would result in a one-time net GHG emissions increase of 7,113 MT CO_2e during project construction, and an estimated net increase of 9,681 MT CO_2e during the first year of full project operation (2023).

Operational emissions would be on-going for project analysis horizon (defined as 30 years), and would be expected to decline over the life of the project as emission factors decline associated with adoption of lower-GHG-emitting vehicle technologies and renewable sources of electricity. The Applicant has agreed to meet the requirement set forth in California Public Resources Code section 21183, subdivision (c) to demonstrate that the proposed project would result in no net additional GHG emissions through the purchase of credible voluntary carbon credits issued by a recognized and reputable carbon registry sufficient to offset all projected additional GHG emissions, as detailed in Attachment 2. The project would obtain offsets using the following prioritization: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry, consistent with policy recommendations included in CARB's Proposed 2017 Climate Change Scoping Plan Update. The Applicant will purchase credible voluntary carbon credits issued by a recognized and reputable carbon registry for the net increase in construction and operational emissions prior to issuance of any Certificate of Occupancy for the project. The commitments to enter into contracts to offset net additional GHG emissions will be incorporated as condition of project approval. The Applicant has agreed to submit copies of executed contracts for purchased carbon credits to CARB and the Governor's Office as evidence that this condition has been met.

XI. Conclusions and Recommendations

Based on an evaluation of the documentation provided by the Applicant and its commitment to purchase voluntary carbon credits, CARB staff concludes that the proposed project would not result in any net additional GHG emissions relative to the baseline.

ATTACHMENT 2

Greenhouse Gas Emissions Methodology Documentation for Environmental Leadership Development Project Application

1045 Olive Street Project

(Submitted December 22, 2017)

ESA

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memorandum

date August 25, 2017

to Lezlie Kimura Szeto, Sustainable Communities Policy & Planning Section, CARB

cc

from Heidi Rous, CPP, ESA
Alan Sako, LEED AP BD+C, ESA

subject **Procedure for Evaluating Greenhouse Gas Emissions Under the "Jobs And Economic Improvement Through Environmental Leadership Act" for the 1045 Olive Street Project**

1.0 Introduction

1.1 Purpose

ESA is conducting a comprehensive greenhouse gas (GHG) emissions assessment for the 1045 Olive Street Project (the "Project"), proposed by 1045 Olive, LLC, to demonstrate that the Project meets the GHG requirements of the Jobs and Economic Improvement Through Environmental Leadership Act ("the Act") (Public Resources Code Section 21178 et seq.). The Office of Planning and Research (OPR) has provided approved guidelines for submitting applications for streamlined environmental review pursuant to the Act. With respect to GHG emissions, a project must demonstrate to the California Air Resources Board (CARB) that it would not result in any net additional GHGs including GHG emissions from employee transportation in accordance with Public Resources Code Section 21183(c). The GHG emissions associated with construction of the Project are also to be considered in the analysis.

This submittal describes the proposed methodology used to estimate the GHG emissions from baseline and Project conditions and describes the proposed methodology used to quantify GHG emission reductions from Project design features and mitigation measures.

1.2 Site Location, Existing Uses, and Project Description

The Project is located at 1045 Olive Street in the South Park community of Downtown Los Angeles ("the Project Site"), approximately 0.6 miles north of the Santa Monica Freeway (I-10) and 0.6 miles east of the Harbor Freeway (I-110). The approximately 0.96-acre Project site is at the northwest corner of the intersection of Olive Street and 11th Street. An alleyway is located on the northwest side of the Project Site.

The Project would remove four existing commercial buildings on the Project Site, and would construct in their place an approximately 751,777 square foot (approximately 1,343,113 square foot gross building floor area inclusive of common space and open space areas) mixed-use high-rise building containing a maximum of 794 residential condominium units and 12,504 square feet of ground- and mezzanine-level neighborhood serving commercial uses along Olive Street and 11th Street. The Project would also include approximately 10,652 square feet of open space. The maximum building height would be 810 feet (approximately 70 stories), and the floor-area ratio (FAR) for the transit area mixed use Project would be 13:1.

Vehicle parking would be provided consistent with the Central City Parking Exception and Downtown Business District parking requirements and is proposed to be located within 5 subterranean levels and 9 levels above grade. Residential units are proposed to wrap the podium along 11th Street and Olive Street on levels 5 through 9. The podium level (10th floor) would contain residential amenities. Residential units are proposed to be located on levels 11 through 51 and 56 through 70. Level 52 would contain mechanical equipment. Levels 53 through 55 would have residential amenity areas, including outdoor space.

Vehicle access (ingress/egress) would be provided from one entrance along Olive Street, near the northern property line and one entrance on the alley, near the north property line. An on-site loading and move-in/out service area would also be accessed from the alley near the middle of the Project Site. The Project would provide up to 891 parking spaces, with 878 spaces dedicated to residential parking and 13 spaces provided for commercial uses. Bicycle parking would also be provided consistent with the requirements of the Los Angeles Municipal Code (LAMC), with approximately 800 long-term spaces provided within the parking garage on ground level, mezzanine and one level below grade. An additional maximum of 85 short-term bicycle parking spaces would be provided consistent with LAMC Section 12.21.A.16.

Construction of the Project would be completed over approximately 3.5 years. The Project would export approximately 80,520 cubic yards of soil and generate approximately 3,400 cubic yards of demolition debris (asphalt, interior and exterior building demolition, and general demolition debris).

2.0 Proposed Procedure for Evaluating GHG Emissions

2.1 Construction

The Project would demolish and remove the existing structures and associated infrastructure from the Project site. The existing uses will be vacated prior to construction and all uses would cease to operate. Construction of the Project would result in one-time GHG emissions during the period of construction activity. Construction of the Project would be completed over approximately 3.5 years and emissions would be estimated for each year of construction. After construction is completed, the Project would become operational. ESA will assume that all new Project facilities will be fully operational on the expected opening day. Therefore, Project construction emissions would not occur contemporaneously with either baseline operational emissions or Project operational emissions.

Consistent with the procedure used for other similar types of certified Environmental Leadership Development Projects (ELDP), such as the Yucca Argyle project, the approach to determine if Project construction would result in net additional GHG emissions would be to consider the Project construction emissions on an annual, calendar year, basis as net new emissions occurring during the Project's construction phase. The Project's construction GHG emissions would be required to be offset in full to meet the requirement of a net zero increase in GHG

emissions. Based on the currently anticipated construction schedule, the final months of construction may occur in the same calendar year as the initial operational year of the Project. The GHG emissions associated with these final months of construction would be added to the Project's initial partial-year operational GHG emissions and the total compared to the baseline annual operational emissions.

Construction emissions will be estimated by assuming a conservative approach to construction activities (i.e., assuming construction occurs at the earliest feasible date) and applying the equipment emissions factors. The emissions will be estimated using the most recent version of the California Emissions Estimator Model (CalEEMod) (Version 2016.3.1) software, an emissions inventory software program developed by the California Air Pollution Control Officers Association (CAPCOA) in conjunction with California air quality management districts and air pollution control districts. The local South Coast Air Quality Management District (SCAQMD) recommends the use of CalEEMod for estimating emissions from land use development projects. CalEEMod is based on outputs from OFFROAD and EMFAC, which are emissions estimation models developed by the California Air Resources Board (CARB) and used to calculate emissions from construction activities, including off- and on-road vehicles. The CalEEMod software will be programmed with Project-specific information such as equipment types expected to be used and the Project construction schedule.

The construction emissions estimates may be supplemented by the EMFAC2014 on-road emissions factor model for on-road trucks. While CalEEMod incorporates the EMFAC2014 model and can provide emissions estimates for on-road trucks, EMFAC2014 may be used directly to provide a more detailed analysis if necessary to account for changes in daily truck trips during the various phases of construction activities. If EMFAC2014 is used, emission factors will be generated using the emissions mode (also referred to as the "burden" mode) to generate South Coast Air Basin-specific vehicle fleet emission factors in units of grams or metric tons per mile, which is the same methodology that CalEEMod uses to generate emission factors.

All construction emissions modeling output files used in the analysis will be incorporated into the GHG Report and submitted to CARB for review.

2.2 Operations

Operation of the existing uses and proposed Project uses results in annual GHG emissions from mobile sources, building energy use, water demand and wastewater treatment, and solid waste generation. The Project's annual, calendar year, operational emissions will be compared to the baseline annual operational GHG emissions to determine the net change in GHG emissions. Emissions will be estimated for a 30-year land use Project lifetime.

Operational emissions will be estimated using the CalEEMod (Version 2016.3.1) software. The emissions estimates may be supplemented by the EMFAC2014 on-road emissions factor model for on-road vehicles. For mobile sources, annual vehicle miles traveled (VMT) from the existing uses and proposed Project uses will be based on trip and VMT data in the traffic report that will be prepared by The Mobility Group. The estimated VMT for the existing uses and proposed Project uses will take into account trip distance reductions from land use characteristics including the existing Project site's infill location and proximity to existing multi-modal public transit services. The estimated reduction in VMT will be supported by evidence from the City of Los Angeles. The City has conducted a comprehensive health study that describes the baseline health conditions in the City and provides a context for understanding the demographic conditions, social and economic factors, physical environment, access to health care, and health behaviors contributing to the health of City residents and workers. The findings are documented in the *Health Atlas for the City of Los Angeles* (Health Atlas), published in June

2013.[1] The Health Atlas is not a plan specifically developed to reduce GHG emissions. Nonetheless, while the primary focus of the Health Atlas is on factors that affect the health behaviors and health status of residents and workers, much of the quantitative data is relevant to a project area's VMT and land use-related GHG emissions as they reflect similar issues regarding land use patterns, urban design, and transportation efficiency. If EMFAC2014 is used, emission factors will be obtained from EMFAC2014, using the same methodology that CalEEMod used to generate emission factors, as described previously under the construction heading. Mobile source emissions are the product of the CalEEMod estimated VMT and the EMFAC2014 emission factors.

Emissions of GHGs from on-site natural gas combustion and off-site electricity generation will be estimated using CalEEMod, which are based on usage data from the CEC's California Commercial End Use Survey (CEUS). Since 1978, the CEC has established building energy efficiency standards, which are updated periodically. CalEEMod applies correction factors to account for compliance with the 2013 version of the Title 24 Building Energy Efficiency Standards. The existing buildings were built prior to the 2008 standards; therefore, electricity and natural gas usage rates will be adjusted to account for compliance with prior Title 24 Building Energy Efficiency Standards. The proposed Project uses would be built to comply with the latest standards; therefore, electricity and natural gas usage rates will be adjusted to account for compliance with the latest 2016 Title 24 Building Energy Efficiency Standards, inclusive of additional energy saving features that would be included in the Project to reduce energy demand. Emission factors for GHGs due to electrical generation to serve the demands of the existing Project Site will be based on the CARB supplied emissions factors in its January 2017 memorandum, *Statewide Emission Factors For Use With AB 900 Projects*. This memorandum provides factors consistent with the "marginal" supply profile for new generation that will be added to the State grid consistent with the year 2020 Renewables Portfolio Standard (RPS). State legislation signed into law in October 2015 further increased the Renewables Portfolio Standard to 50 percent by 2030 and also included interim targets of 40 percent by 2024 and 45 percent by 2027. Future year factors will be reduced proportionately based on these mandated legislative targets.

Emissions of GHGs from solid waste disposal will be calculated using the CalEEMod software based on the solid waste generation rates for the existing uses and the proposed Project uses. The solid waste GHG emissions will take into account the City of Los Angeles municipal solid waste diversion rates.

Emissions of GHGs from water and wastewater are due to the energy required to supply, distribute and treat. Wastewater also results in emissions of GHGs from wastewater treatment systems. Emissions will be calculated using the CalEEMod software based on the water demand rates for the existing uses and the proposed Project uses inclusive of green building features that would be incorporated into the Project to reduce water demand.

Other sources of GHG emissions from existing uses include equipment used to maintain landscaping, such as lawnmowers and trimmers. The CalEEMod software uses landscaping equipment GHG emission factors from the CARB OFFROAD model and the *CARB Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (6/13/2003)*. The CalEEMod software estimates that landscaping equipment operate for 250 days per year in the South Coast Air Basin.

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1 City of Los Angeles, The Health Atlas, (2013), http://healthyplan.la/the-health-atlas/. Accessed January 2017.

2.3 Emission Mitigation Measures and Offsets

Annual emissions of GHGs from the Project will incorporate GHG emission mitigation measures, and offsets as necessary to achieve a net zero increase in site GHG emissions for the estimated Project lifetime. Mitigation measures may include rooftop solar projects or other community-based measures. Although not required by regulation, it is understood that it is CARB policy to prioritize offsets in the following order: local, regional, in-state, and lastly out-of-state/out-of-country. The Project will prioritize offsets based on CARB's prioritization order.

February 14, 2018

Ms. Anny Huang, Manager
Emission Inventory Analysis Section
California Air Resource Board
1001 I Street
Sacramento, CA 95814

Re: Greenhouse Gas Emissions Offset Approach for the 1045 Olive Project

Dear Ms. Huang:

This letter is provided as a supplement to the application filed by 1045 Olive, LLC. (the "Project Applicant"), who proposes to develop the 1045 Olive Project (the "Project") in the Central City Community Plan and the City Center Redevelopment Plan Project area of the City of Los Angeles.

As you know, the Project Applicant has applied for certification by the Governor as a leadership project under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (collectively, "AB 900" or the "Act"). The application includes projected emissions for the Project that show certain projected net additional emissions of greenhouse gases (GHG) as a result of the construction of the Project and as a consequence of Project operations.

The Applicant has committed to no net increase in construction and operation-related GHG emissions. Consistent with policy recommendations included in California Air Resources Board's (CARB) California 2017 Climate Change Scoping Plan,[1] while offsets are a potential way to mitigate GHG emissions, other options will continue to be explored as well to the extent feasible, with the following order of preference: (1) project design feature/on-site reduction measures; (2) off-site local reductions; (3) off-site regional reductions, and (4) offset credits issued by a recognized and reputable carbon registry. To the extent offsets are used to mitigate GHG emissions, prior to issuance or any Certificate of Occupancy for any building in the project, the Applicant or its successor shall enter into one or more contracts to purchase carbon credits issued by a recognized and reputable carbon registry, which contract, together with any previous contracts, shall evidence the purchase of carbon credits in an amount sufficient to offset the operational emissions attributable to each building constructed within the project over the analysis horizon of 30 years. Prior to execution of the contract(s), the Applicant shall provide the lead agency (the City of Los Angeles) a calculation of the net additional operational GHG emissions according to the methodology followed in the

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1 The California 2017 Climate Change Scoping Plan is available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

Greenhouse Gas Emissions Methodology and Documentation for the 1045 Olive Street Project document. The Applicant shall agree to promptly submit copies of executed contracts for purchased carbon credits to CARB and to the Governor's office. The commitments to enter into contracts to offset net additional GHG emissions will be incorporated as a condition of project approval under the Public Resources Code sec. 21183(e), which is binding and enforceable by the lead agency.

The Project Applicant proposes to meet the requirement set forth in California Public Resources Code Section 21183(c), which requires that the Project demonstrate that it will not result in net additional emissions of GHG, through the implementation of GHG-reducing Project Design Features and/or acquisition of voluntary carbon credits sufficient to offset all projected additional emissions, in the following manner:

1. No later than six (6) months after the issuance of a Temporary Certificate of Occupancy for the Project, the Project Applicant shall commit to providing to the lead agency, the City of Los Angeles, a calculation of the net additional emissions resulting from the construction of the Project (the "Construction Emissions"), to be calculated in accordance with the methodology agreed upon by the California Air Resources Board (CARB) in connection with the AB 900 certification of the Project (the "Agreed Methodology"). Project Applicant shall provide courtesy copies of the calculations to CARB and the Governor's Office promptly following transmittal of the calculations to the City of Los Angeles. Project Applicant shall enter into one or more contracts for the implementation of GHG-reducing Project Design Features and/or purchase voluntary carbon credits from a recognized and reputable carbon registry in an amount sufficient to offset the Construction Emissions. The Project Applicant shall provide courtesy copies of any such contracts to CARB and the Governor's Office promptly following the execution of such contracts.

2. Prior to issuance of any Certificate of Occupancy for the Project, the Applicant or its successor shall commit to entering into one or more contracts to purchase carbon credits from a recognized and reputable carbon registry (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to offset the Operational Emissions attributable to the Project, and shall be calculated on a net present value basis for a 30-year useful life.

   Prior to execution of the contract(s), the Applicant and its consultant shall calculate the Operational Emissions, in accordance with the methodology described in the Applicant's "Application for Environmental Leadership Development Project," specifically the "Greenhouse Gas Emissions Methodology and Documentation" prepared by Environmental Science Associates (ESA).

   Once the City has had an opportunity to review and approve the methodology and associated calculations, the Applicant shall provide copies of the calculation methodology to the California Air Resources Board (CARB) and Governor's Office of Planning and Research (OPR), which is then subject to a determination signed by the Executive Officer

of CARB pursuant to the procedures set forth in Section 6 of OPR's Guidelines. The City will issue a Certificate of Occupancy upon receipt of the following: (1) a fully executed copy of the carbon offset purchase agreement(s); (2) a final CARB Determination that the Project will not result in any net additional GHG emissions; and (3) a copy of OPR's Certification Letter for the Project.

3. The following project design features were accounted for in the AB 900 application for purposes of reducing GHG emissions and are, therefore, included as commitments in this letter.

   A. The design of the new buildings shall incorporate features to be capable of achieving Gold certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)-CS® or LEED-NC® Rating System as of January 1, 2011. Specific sustainability features that are integrated into the Project design to enable the Project to achieve at least LEED® Gold certification would include but not be limited to the following:

      a. The Project will incorporate heat island reduction strategies for 50 percent of the site hardscapes or provide 100 percent structured parking and incorporate heat island reduction strategies for the Project roof areas.

      b. The Project will promote alternatives to conventionally fueled automobiles by providing electric vehicle charging stations and/or preferred parking for alternative-fuel vehicles, low-emitting, and fuel-efficient and ride-sharing vehicles.

      c. The Project will optimize building energy performance with a minimum of a 5 percent reduction from the LEED baseline consistent with LEED requirements.

      d. The Project will reduce water consumption by 40 percent for indoor water and 50 percent for outdoor water from the LEED usage baseline.

      e. The Project would reduce indoor potable water use by a minimum of 20 percent compared to baseline or standard water consumption by installing water fixtures that exceed applicable standards.

      f. The Project will provide on-site recycling areas with containers to promote the recycling of paper, metal, glass, and other recyclable materials and adequate storage areas for such containers.

   B. The residential units within the Project shall not include the use of natural gas-fueled fireplaces.

The commitments outlined herein will be incorporated into the Project's Final Environmental Impact Report (FEIR) as a proposed improvement measure. The Project Applicant will agree to comply with all improvement measures and mitigation measures

contained in the FEIR through the Project's Mitigation Monitoring and Reporting Program, which represents a binding and enforceable agreement with the Project's lead agency, the City of Los Angeles.

Should you have any questions, please do not hesitate to call Elliott Kahn at (424) 653-2100.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

Name: Adam Tartakovsky
Its: Authorized Signatory

cc: Alejandro Huerta, City Planner, City of Los Angeles, Department of City Planning
Ryan Leaderman, Partner, DLA Piper LLP
Heidi Rous, Air Quality and Noise Group Director, ESA

1045 Olive Project
Application for CEQA Streamlining

- LEED Measures

September 1, 2017

Lisa Webber
Deputy Director of Planning
City of Los Angeles
200 N. Spring Street
Los Angeles, CA 90012

RE: 1045 Olive Project: Acknowledgement of Obligations under Public Resources Code Sections 21183(d), (e), and (f)

Dear Ms. Webber:

As you are aware, 1045 Olive, LLC ("Applicant") has applied to the California Governor to request certification of the 1045 Olive Project (the "Project") as a Leadership Project subjected to streamlined environmental review pursuant to the Jobs and Economic Improvement through Environmental Leadership Act of 2011 (the "Act"), California Public Resources Code Section 21178 et seq as amended by SB 763 and AB 734. By this letter, Applicant acknowledges and agrees to its obligations under the Act as set forth at Public Resources Code Sections 21183(d), (e), and (f).

As required by Public Resources Code Section 21183(d), Applicant agrees that all mitigation measures required pursuant to CEQA to certify the Project under the Act shall be conditions of approval, and those conditions will be fully enforceable by the City of Los Angeles (the "City") or another agency designated by the City. Applicant agrees that all environmental mitigation measures required to certify the Project under the Act will be monitored and enforced by the City for the life of the obligation.

As required by Public Resources Code Section 21183(e), Applicant agrees to pay the costs of the Court of Appeal in hearing and deciding any case, including payment of the costs for the appointment of a special master if deemed appropriate by the court, in a form and manner specified by the Judicial Council, as provided in the Rules of Court adopted by the Judicial Council pursuant to the Act

As required by Public Resources Code Section 21183(f), Applicant agrees to pay the costs of preparing the administrative record for the Project, in a form and manner specified by the City, concurrent with review and consideration of the Project pursuant to CEQA and the Act.

Sincerely,

1045 Olive, LLC,
a California limited liability company

By: _____

(name) Elliott Kahn

Acknowledged and agreed by:

_____
Lisa Webber
City of Los Angeles – Deputy Director of Planning

75151.001-4846412v1

Exhibit 7 Applicant's Acknowledgement and Binding Agreement with the City of Los Angeles

11. Letter to Joint Budget Committee

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

April 27, 2018

Honorable Holly Mitchell, Chair
Honorable Phil Ting, Vice Chair
Joint Legislative Budget Committee
1020 N Street, Room 553
Sacramento, CA 95814

Re. 1045 Olive St., AB 900 Certified Project

Dear Senator Mitchell and Assemblyman Ting:

Governor Brown has determined that the 1045 Olive St. Project in the City of Los Angeles is eligible for streamlined judicial review under the Jobs and Economic Improvement Act (AB 900), Public Resources Code section 21184. Pursuant to that provision, I am forwarding the Governor's determination to the Joint Legislative Budget Committee.

If you have any questions or comments, please do not hesitate to contact me or my staff.

Sincerely,

Ken Alex
Director

cc. Jennifer Troia

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

12. Joint Budget Committee Concurrence Letter

Joint Legislative Budget Committee

CHAIR
HOLLY J. MITCHELL

SENATE
PATRICIA C. BATES
JEAN FULLER
RICARDO LARA
WILLIAM W. MONNING
JIM NIELSEN
RICHARD PAN
NANCY SKINNER

VICE CHAIR
PHILIP Y. TING

ASSEMBLY
JOAQUIN ARAMBULA
RICHARD BLOOM
ROCKY J. CHÁVEZ
KEVIN MCCARTY
MELISSA A. MELENDEZ
JAY OBERNOLTE
SHIRLEY N. WEBER

GOVERNMENT CODE SECTIONS 9140-9143

CALIFORNIA LEGISLATURE

LEGISLATIVE ANALYST
MAC TAYLOR

925 L STREET, SUITE 1000
SACRAMENTO, CALIFORNIA 95814
(916) 445-4656

May 24, 2018

Mr. Ken Alex, Director
Governor's Office of Planning and Research
1400 Tenth Street
Sacramento, California 95814

Dear Mr. Alex:

On April 30, 2018, you informed me that Governor Brown has determined that the Olive Street project in the City of Los Angeles is eligible for streamlined judicial review under Chapter 354 of 2011 (AB 900, Buchanan).

Assembly Bill 900 provides a streamlined California Environmental Quality Act review process for construction projects that qualify as environmental leadership development projects (ELDPs). Among other requirements, ELDPs must make substantial financial investments within our state, create new high wage and highly skilled jobs, and not result in any net additional greenhouse gas emissions, as determined by the California Air Resources Board.

Based on the information you have provided, and a subsequent review by the Legislative Analyst's Office, I concur with the Governor's determination that the project meets the AB 900 criteria set forth in Public Resources Code section 21178 et seq.

Sincerely,

Holly J. Mitchell
Chair

cc: Members of the Joint Legislative Budget Committee
Michael Cohen, Director of Finance