

**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 Emissions¹

Construction Year	GHG Emissions (MT CO ₂ e/year)
2019	1,262
2020	1,678
2021	2,666
2022	1,507
Total	7,113
GHG Credits Required²	7,113

Notes:

GHG = greenhouse gas; MT CO₂e = 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 Emissions¹

Year ²	GHG Emissions (MT CO ₂ e/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 CO₂e = 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 CO₂e) 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 CO₂e.

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 CO₂ emission factor of 595 pounds of CO₂ 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 CO₂ 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 CO₂ over their active growing period of 20 years (or about 5 metric tons of CO₂ 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.