MEMORANDUM

To:	Kerrie Nicholson CAJA Environmental Services, LLC	Date:	May 4, 2018
From:	Clare M. Look-Jaeger, P.E. Kevin C. Jaeger Linscott, Law & Greenspan, Engineers	LLG Ref:	1-17-4241-2
Subject:	**Weingart Projects – Construction Traffic Analysis**		

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Linscott, Law & Greenspan, Engineers (LLG) has prepared this memorandum to summarize the supplemental review conducted for the proposed Weingart Projects as it relates to the evaluation of traffic associated with Project construction. As you are aware, LLG previously prepared the traffic impact study dated March 13, 2018 for the proposed Project which was subsequently reviewed and approved via LADOT's departmental clearance letter dated May 3, 2018.

CONSTRUCTION TRAFFIC ANALYSIS

Based on preliminary information provided by the Project Applicant team, it has been determined that the duration of the Project construction activities is expected to total 49 months. The construction consists of the following general phases for each of the three Weingart Project buildings:

- I) Demolition,
- II) Site Preparation,
- III) Grading and Excavation,
- IV) Building Construction,
- V) Paving, and
- VI) Architectural Coatings.

A general summary of the key elements of construction by phase is provided in the Project Description. The Project's construction phase would begin with development of Tower 1A on Site 1 that would occur over approximately 17 months. During the finishing and architectural coating phase of Tower 1A, the construction phase for Tower 1B would begin and would occur over approximately 18 months. During the building construction phase for Tower 1B, Tower 1A would become operational. The construction phase for Site 2 would occur over approximately 18 months, just after Tower 1B also becomes operational. The approximate overall construction schedule for the Project is illustrated in the Project Description.

It has been determined that the most intensive period of overall traffic generation during any phase of Project construction is expected to occur during the overlap of the construction of Site 2 after Towers 1A and 1B have become operational. For the weekday AM peak hour, the peak construction traffic generation is expected during the Grading and Excavation activities of Site 2 overlapping with the operational

traffic associated with Towers 1A and 1B. For the weekday PM peak hour, the peak construction traffic generation is expected during the Grading and Excavation activities of Site 2 overlapping with the operational traffic associated with Towers 1A and 1B. At this time, it is not known if any temporary lane closures will be necessary through the course of the Project construction. Any such lane closures are expected to occur outside of the weekday AM and PM commute peak hours, however, so as to maintain roadway capacity when the street system is typically most heavily constrained.

Construction Assumptions

It is assumed that demolition and site preparation would occur on each site as described above. The excavation activities would require the total removal of approximately 25,244 cubic yards of material with the following totals for each building: 10,244 cubic yards for Tower 1A, 4,800 cubic yards for Tower 1B, and 10,200 cubic yards for Site 2. It is assumed that the equipment staging area during the initial phases of construction grading would occur on, within and adjacent to each Project site. Construction worker parking also could occur on-site during certain times, however during the building construction activities workers would likely be required to park at an adjacent lot, or other nearby public parking lots so as to avoid any construction workers parking on adjacent roadways.

The City's Noise Ordinance currently limits construction hours Monday through Friday to no earlier than 7:00 AM and no later than 9:00 PM, and to no earlier than 8:00 AM and no later than 6:00 PM on Saturdays. It is important to note that workers are expected to arrive at the construction site/s by 6:30 AM and end their workday by 3:30 PM Monday through Friday. For purposes of this analysis, no Saturday construction activities are assumed and while workers would generally depart the site by 3:30 PM, some worker departures are assumed to overlap with the weekday PM peak hour (i.e., 25%) in order to account for supervisors' later departures as well as some overtime when it is necessary to maintain the construction schedule.

Peak Construction Traffic Trip Generation (Weekday AM Peak Hour) – Grading/Excavation Activities Associated With Site 2 Overlapping With Site 1 (Towers 1A and Tower 1B) Operational Traffic

It is assumed that heavy construction equipment would be located on-site during grading activities and would not travel to and from the Project site on a daily basis. However, truck trips would be generated during the grading and corresponding export activities in order to remove material from the Project site. Trucks are expected to carry the export material to a receptor site(s).

It is anticipated that construction vehicles related to the export activities will have a capacity of at least 10 cubic yards per truck. It has also been assumed for analysis purposes that all hauling activities would be limited to no earlier than 7:00 AM and

end no later than 3:30 PM (i.e., prior to the weekday PM peak hour). Thus, the analysis is conservative in that the excavation and hauling activities are assumed to overlap with the weekday AM peak hour. The export period associated with Site 2 has been estimated to require approximately 11 workdays. During this period, up to 12 truckloads per hour (i.e., 12 inbound trucks and 12 outbound trucks) are anticipated. When accounting for the application of a passenger car equivalency (PCE) factor of 2.5 to account for the heavier weight and larger size haul trucks, a total of 30 inbound truck PCE trips and 30 outbound truck PCE trips could potentially occur during the weekday AM peak hour. In addition, the operational traffic associated with Site 1 (i.e., Towers 1A and 1B) are forecast to generate 64 inbound and 50 outbound vehicle trips during the weekday AM peak hour. Miscellaneous trucks are also expected to be generated to and from the site to account for site deliveries and has been estimated at no more than one truck per hour (i.e., no more than three inbound PCE trips and three outbound PCE trips during the weekday AM peak hour). Taken together, a total of 180 trips are forecast to occur during the weekday AM peak hour during this period (i.e., 97 inbound and 83 outbound trips). In addition, it is noted that the proposed haul route will require review and approval by the City of Los Angeles.

Given that the proposed Project upon full operation is expected to generate 235 net new vehicle trips (i.e., 125 inbound and 110 outbound net new trips) during the weekday AM peak hour and no significant traffic impacts are expected, it can also be concluded based on a comparative review of trip generation that no significant traffic impacts are anticipated to occur during this peak construction activity (i.e., which overlaps with operational traffic from Site 1). The following section provides the forecast of the peak weekday PM peak hour trip generation during any phase of construction/building operation.

Peak Construction Traffic Trip Generation (Weekday PM Peak Hour) – Building Construction Activities Associated With Site 2 Overlapping With Site 1 (Towers 1A and Tower 1B) Operational Traffic

As described above, the peak construction traffic generation during the weekday PM peak hour has been determined to occur during the building construction/architectural coatings construction work of Site 2 overlapping with the operational traffic of Site 1 (i.e., Towers 1A and 1B). Activities related to this phase are expected to generate the highest number of construction worker vehicle trips as compared to the other construction activities. Based on information provided by the Project Applicant team, the maximum number of construction workers during this phase is expected to total 95 workers. Construction workers are expected to arrive to the Project site by 6:30 AM. Assuming the typical work day ends at 3:30 PM, fifty percent (50%) of the workers are assumed to leave the site between 3:30 PM and 4:00 PM, twenty-five percent (25%) between 4:00 PM and 4:30 PM, and the remaining twenty-five percent

(25%) after 4:30 PM (including supervisors). Thus, while these construction worker trips would generally occur outside of the weekday commute peak hours of adjacent street traffic, twenty-five percent (25%) of the work force (i.e., 24 workers) have been assumed to overlap with the weekday commute PM peak hour (i.e., between 5:00 PM and 6:00 PM) in order to provide a conservative forecast of construction traffic generation.

It is anticipated that construction workers would primarily remain on-site throughout the day. The number of construction worker vehicles is estimated using an average vehicle ridership of 1.135 persons per vehicle (as provided in the South Coast Air Quality Management District in its CEQA Air Quality Handbook). Therefore, it is estimated that approximately 167 vehicle trips (84 inbound trips and 84 outbound trips) on a daily basis would be generated to and from the site by the construction workers during this peak building construction phase. With 25% of the workers conservatively assumed to overlap with the weekday PM peak hour, this would result in 21 outbound construction worker vehicle trips. It is generally anticipated that construction worker-related traffic would be largely freeway oriented. Construction workers would likely arrive and depart via the on- and off-ramps serving the I-10 Freeway, I-110 Freeway, and U.S. 101 Freeway. The most commonly used freeway ramps would be nearest the Project site. The construction work force would likely be generated from all parts of the Los Angeles region and are, thereby, assumed to arrive from all directions.

Operational traffic associated with Site 1 (i.e., Towers 1A and 1B) is expected to overlap with this phase of Site 2 construction activities. Site 1 operations are forecast to generate 44 inbound and 60 outbound vehicle trips during the weekday PM peak hour. Miscellaneous trucks are also expected to be generated to and from the site to account for site deliveries and has been estimated at no more than one truck per hour (i.e., no more than three inbound PCE trips and three outbound PCE trips during the weekday PM peak hour). Taken together, a total of 131 trips are forecast to occur during the weekday PM peak hour during this period (i.e., 47 inbound and 84 outbound trips).

Given that the proposed Project upon operation is expected to generate 204 net new vehicle trips (i.e., 92 inbound and 112 outbound net new trips) during the weekday PM peak hour and no significant traffic impacts are expected, it can also be concluded based on a comparative review of trip generation that no significant traffic impacts are anticipated to occur during this peak Site 2 construction activity (i.e., which overlaps with operational traffic from Site 1).

Cumulative Impacts During Concurrent Construction Activities

As noted in the traffic impact study, while there are many related projects that fall within a 1.5-mile radius of the Project, only a few of the related projects are located within about a four block radius of the Project. It is possible that the construction of some of these related projects could overlap with the Project's construction phase, however, similar to the proposed Project, those projects would be required to prepare and implement a Construction Staging and Traffic Management Plan (CSTMP) should any temporary lane closures or re-routing of vehicle and bicycle traffic, sidewalk closures and pedestrian re-routing be anticipated.

While the exact duration of any cumulative construction activities is unknown at this time, no other related projects are located in the immediate vicinity on San Pedro Street, 6th Street or Crocker Street. As stated previously, the Project's construction phase is estimated to occur over approximately 49 months. Thus, the cumulative impacts during concurrent construction activities are forecast to be less than significant. Also, as discussed previously, the Project's peak hour construction traffic generation would be much less than the Project's overall peak hour operational traffic generation, and would not be expected to result in any significant intersection Level of Service (LOS) impacts.

Emergency Access During Concurrent Construction Activities

The potential traffic impacts during peak Site 2 Project construction activity overlapping with Site 1 operational traffic have been analyzed as summarized above. Having stated this, emergency vehicle access throughout the study area must be maintained during the concurrent construction activities associated with Downtown Los Angeles development projects. It is important to note that as required by the State of California Vehicle Code (i.e., specifically Section 21806, Authorized Emergency Vehicles), "upon the immediate approach of an authorized emergency vehicle which is sounding a siren and which has at least one lighted lamp exhibiting red light that is visible, under normal atmospheric conditions, from a distance of 1,000 feet in front of a vehicle, the surrounding traffic shall, except as otherwise directed by a traffic officer, do the following:

(a) (1) Except as required under paragraph (2), the driver of every other vehicle shall yield the right-of-way and shall immediately drive to the right-hand edge or curb of the highway, clear of any intersection, and thereupon shall stop and remain stopped until the authorized emergency vehicle has passed.

(2) A person driving a vehicle in an exclusive or preferential use lane shall exit that lane immediately upon determining that the exit can be accomplished with reasonable safety.

(b) The operator of every street car shall immediately stop the street car, clear of any intersection, and remain stopped until the authorized emergency vehicle has passed.

(c) All pedestrians upon the highway shall proceed to the nearest curb or place of safety and remain there until the authorized emergency vehicle has passed."[1]

During the concurrent construction of Downtown Los Angeles development projects, including the proposed Project, it is expected that emergency vehicles will continue to utilize the surrounding Downtown street system even though some travel lanes along certain portions of some roadways may be temporarily used for construction staging and/or material delivery. If required, drivers of emergency vehicles are also trained to utilize center turn lanes, or travel in opposing through lanes to pass through crowded intersections or streets. Thus, the respect entitled to emergency vehicles and driver training allow emergency vehicles to negotiate typical street conditions in urban areas including areas near any temporary travel lane closure(s).

Construction Management and Haul Route Approval

Approvals required by the City of Los Angeles and the State of California Department of Transportation (Caltrans) for implementation of the proposed Project include a Truck Haul Route program approved by City and an encroachment permit obtained by Caltrans. With regard to other construction traffic-related issues, construction equipment would be stored within the perimeter fence of the construction site.

As a general contractor has not yet been selected, the exact extent of the construction work site boundary cannot be determined at this time. However, during certain portions of the construction schedule it is possible that some frontage sidewalks may need to be temporarily closed. Should that be determined to be necessary, appropriate pedestrian detours will be required to be established along with the appropriate advance warning signage directing pedestrians to other available sidewalks and crosswalks/crossings. Should any such pedestrian detours or temporary travel lane closures be proposed, traffic control and management plans will be prepared for the required review and approval by the City of Los Angeles Department of Transportation. In addition, a CSTMP will also be required for review and approval by the City outlining all of the above details. Potential construction traffic impacts can be further reduced with the implementation of the following design features as part of the CSTMP:

- Maintain existing access for the existing site uses and parking facilities;

[1] Source: State of California Department of Motor Vehicles website; https://www.dmv.ca.gov/portal/dmv; Amended Sec. 68, Ch. 1154, Stats 1996 Effective September 30, 1996.

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- Limit any potential roadway lane closures to off-peak travel periods;
- Schedule receipt of construction materials to non-peak travel periods, to the extent possible;
- Coordinate deliveries to reduce the potential of trucks waiting to unload for protracted periods of times; and
- Prohibit parking by construction workers on adjacent streets and directing the construction workers to available/designated parking areas within and adjacent to the Project site.

Please feel free to call us with any questions or comments at 626.796.2322.

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