MEMORANDUM

Date: January 9, 2019
To: City of Redondo Beach
From: Anjum Bawa and Spencer Reed, PE, and Environmental Science Associates (ESA)
Subject: South Bay Galleria EIR Additional Office & Skate Park – Environmental Impact Sensitivity Analysis

On April 12, 2018, A memorandum was prepared to document a transportation impact sensitivity analysis conducted by Fehr & Peers for a slightly modified version of Alternative 4-1, which includes more office square footage than what was included in the Alternative 4-1. More specifically, Alternative 4-1 analyzed a scenario in the Draft EIR where “50,000 sf of commercial retail on the southwest corner proposed under Alternative 4, would be removed and replaced with office uses.” (Draft EIR Section 4.5.5 and 4.6.5.) For the purposes of this sensitivity analysis, 175,000 sf of commercial retail proposed under Alternative 4-1, would be removed and replaced with the same amount of office uses. This memorandum documents the description, trip generation estimate, and impact analysis findings of the sensitivity analysis; and compares the results to those presented in the Draft EIR for the proposed project and Alternative 4-1.

During the October 2, 2018 City Council meeting, requests were made by the Redondo Beach Mayor and City Council members to review potential changes to the slightly modified version of Alternative 4-1. In response, the applicant has proposed minor modifications including the addition of a skate park use within the open space of the site, adding right-turn outbound access on Artesia Boulevard for hotel traffic, redistribution of retail square footage on site, and adjusting the location of residential uses on site. This memorandum was prepared by Fehr & Peers and ESA to review the environmental consequences of the slightly modified version of Alternative 4-1.
Description and Trip Generation

The impact sensitivity analysis studied of the following land-use mix: 300 dwelling units, 150 hotel rooms, 175,000 square feet of office, 889,134 square feet of retail, a 1,287 seat theater, 45,000 square feet of quality restaurant, and 15,000 square feet of high-turnover sit-down restaurant.

The trip generation estimate was prepared using the same MXD+ trip generation model and methodology that was utilized in the Draft EIR for the proposed project and all project alternatives. Table 1 presents the net external trip generation estimates for the sensitivity analysis. The land-use mix included in the sensitivity analysis is expected to generate 5,842 daily, 433 AM peak hour, and 356 PM peak hour net new trips (on top of the existing trip generation of the project site). This sensitivity analysis represents an increase in the AM trip generation estimate as compared to the proposed project and all project alternatives studied in the Draft EIR. The land-use mix included in the sensitivity analysis would result in a 19% increase in the AM peak hour trip generation as compared to the proposed project and a 42% increase in the AM peak hour trip generation as compared to Alternative 4-1. However, as outlined in greater detail below, due to the trip distribution, this increase in AM trips would not result in an increase in severity of the significant and unavoidable intersection impacts, and would not result in any new significant and unavoidable impacts.

Additionally, the land-use mix included in the sensitivity analysis would generate 5,842 daily trips, which is less than the daily trip generation of the proposed Project (8,020 daily trips). (Draft EIR Table 3.13-7.) Consequently, this slight modification to Alternative 4-1 would not result in an increase in severity of the significant and unavoidable impacts and would not result in any new significant impacts, including but not limited to Air Quality, GHG, or Roadway Noise Impacts. Additional details on why a conversion of commercial retail to office space would not result in increased significant impacts are provided in Draft EIR Section 4.6.5. Consequently, this memorandum should be read in conjunction with the analysis of Alternative 4-1 in the Draft EIR.1

Transportation Impact Analysis Findings

The transportation impact sensitivity level of service (LOS) analysis studied an Existing plus Project scenario and Cumulative plus Project scenario at the same study intersections identified in the Draft EIR. The analysis utilized the same land use distribution and assignment assumptions as Alternative

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1 This memorandum was also prepared with the assistance and expertise of Environmental Science Associates (ESA).
Table 2 summarizes the results of the AM and PM peak hour intersection LOS analysis for Existing plus Project condition for the sensitivity analysis. Table 3 summarizes the results of the AM and PM peak hour intersection LOS analysis for Cumulative plus Project condition for the sensitivity analysis. To determine the sensitivity analysis' transportation related impacts under cumulative conditions, the studied Cumulative plus Project condition was compared against the Cumulative condition without Project scenario from the Draft EIR. As shown in Table 3, after applying various significant impact criteria detailed in Section 3.13 of the Draft EIR, the land-use mix included in the sensitivity analysis is expected to result in significant transportation impacts to the following five study intersections under Cumulative plus Project condition (one less significantly impacted intersection in comparison to the proposed Project):

13) Inglewood Avenue & Artesia Boulevard (AM peak hour)
16) Hawthorne Boulevard & Artesia Boulevard (both peak hours)
17) Prairie Avenue & Artesia Boulevard (AM peak hour)
18) I-405 Southbound Ramps & Artesia Boulevard (PM peak hour)
19) I-405 Northbound Ramps & Artesia Boulevard (PM peak hour)

The feasible physical mitigation measures identified in the Draft EIR were applied to the associated significantly impacted intersections. Table 2 presents the intersection LOS results for the Mitigated Existing plus Project scenario. Table 3 presents the intersection LOS results for the Mitigated Cumulative plus Project scenario. As is the case with the proposed project, after applying the mitigation measures, the land-use mix included in the sensitivity analysis would result in significant and unavoidable impacts at Hawthorne Boulevard and Artesia Boulevard (Intersection 16), Prairie Avenue and Artesia Boulevard (Intersection 17), and I-405 Northbound Ramps & Artesia Boulevard (Intersection 19) under the Cumulative plus Project scenario.

The Draft EIR conducted an off-ramp queuing analysis and determined that freeway ramp queuing would not extend beyond the storage length under any existing or cumulative scenario with the Project. The sensitivity analysis' trip generation is 19% higher in the AM peak hour and a 21% lower in the PM peak hour as compared to the proposed project. The Draft EIR determined that the off-ramp queuing was longer during the PM peak hour than the AM peak hour. Additionally, the Draft EIR determined that the proposed project increased the total AM peak hour queue length between 0 and 7 feet, and the resulting AM queues were less than 30% the total length of the off-ramp under the cumulative scenario. Therefore, the off-ramp queues can accommodate the increase in
the AM peak hour trips as the resulting off-ramp queues can be doubled and still not exceed the storage length.

**Congestion Management Program Impact Analysis**

The transportation impact sensitivity analysis included an evaluation of compliance with Los Angeles County CMP requirements. This analysis is similar to what was presented in the Draft EIR for the proposed project.

**CMP Arterial Intersections**

The CMP arterial intersection analysis was conducted per the requirements of the Los Angeles County CMP. Based on the screening criteria identified in the Draft EIR, the intersections of Inglewood Avenue & Artesia Boulevard and Hawthorne Boulevard & Artesia Boulevard were analyzed and compared to the CMP thresholds. Table 4 details the LOS analysis and CMP impact analysis for these two intersections. Neither of the intersections would be impacted under Existing plus Project conditions or Cumulative plus Project conditions based on CMP impact criteria, since the intersections would operate at LOS E or better.

**CMP Freeway Analysis**

The CMP freeway analysis was conducted per the requirements of the Los Angeles County CMP. There are 92 AM peak hour trips and 69 PM peak hour Project trips that are forecast to travel through the CMP monitoring location at I-405 at Marine Avenue. The land-use mix included in the sensitivity analysis would not generate enough new traffic to exceed the freeway analysis criteria of 150 vehicle trips at the aforementioned location. Therefore, impacts would be less than significant under existing and cumulative conditions and no further CMP freeway analysis is required.

**Regional Transit Impacts Analysis**

The CMP transit analysis was conducted per the requirements of the Los Angeles County CMP. According to the MXD+ model, the land-use mix included in the sensitivity analysis is anticipated to result a vehicle trip saving of 21 and 10 net peak hour vehicle trips assigned to transit in the AM and PM peak hours, respectively. Using the 1.4 AVR factor prescribed in the CMP, this totals 29 and 13 peak hour person transit trips in the AM and PM peak hours, respectively.

As identified in the Draft EIR, The total estimated capacity of the CMP study area transit service is approximately 12,900 persons in the AM peak hour and 11,960 persons in the PM peak hour. The addition of 29 AM and 13 PM peak hour transit trips would not exceed the capacity of transit service.
Furthermore, transit service providers routinely adjust service up to two times a year to reflect future cumulative demand. Additional transit riders would also increase farebox recovery on transit lines, and therefore transit riders generated by the land-use mix included in the sensitivity analysis would help to fund the service. At this level of increase, impacts on the regional transit system would be less than significant.

**Design Features (TRA-3)**

As noted previously, the land-use mix included in the sensitivity analysis would generate 19% more AM peak hour trips as compared to the proposed project. While the land-use mix included in the sensitivity analysis would add vehicles to the existing roadway network, it does not propose modifications to the roadway network off site. The sensitivity analysis would not result in interference with traffic flow on public streets at site access driveways, would not result in insufficient or inadequate accessibility for delivery or service vehicles that would interfere with traffic flow. The sensitivity analysis impacts would be less than significant and similar to the proposed project.

**Emergency Access (TRA-4)**

The sensitivity analysis assumes that vehicular access to the project site would be the same as with the proposed project. Vehicular access would be provided at eight locations along Artesia Boulevard, Hawthorne Boulevard, 177th Street, and Kingsdale Avenue. The access locations would consist of various access types such as full access, right-turn in/right-turn out, and right-turn in only. The existing truck driveways along Kingsdale Avenue would continue to provide truck access to the site; similar to the proposed project, alternative truck access from 177th Street will be removed. All access points would be accessible to large emergency vehicles such as fire engines. This would comply with California Fire Code requirements for provision of at least two access points. Therefore, no significant emergency access impacts would occur with the sensitivity analysis under existing and cumulative conditions. Impacts would be less than significant and similar to the proposed project.

**Bicycle and Pedestrian Conditions (TRA-5)**

No substantial changes to the pedestrian and bicycle system are expected as part of the sensitivity analysis. Therefore, it is not expected to result in a significant impact to the pedestrian and bicycle conditions.
While access to the project site will utilize existing vehicular driveways and introduce a new vehicular driveway location along Hawthorne Boulevard, these crossing locations would be designed to applicable standards and best practices. The sensitivity analysis would not disrupt existing or planned pedestrian or bicycle facilities, would provide for pedestrian, bicycle, and roadway facilities that are designed with applicable design standards, would not substantially increase hazards due to design features or incompatible uses. Therefore, the land-use mix included in the sensitivity analysis is not expected to significantly impact pedestrian and bicycle modes.

**Comparison to Draft EIR Proposed Project**

Table 5 summarizes the results of the AM and PM peak hour intersection LOS analysis presented in the Draft EIR for the proposed project. As compared to the proposed project, the land-use mix included in the sensitivity analysis would result in one less significantly impacted intersection and the same number of significant and unavoidable intersections after mitigation. Additionally, the significant and unavoidable intersection volume-to-capacity (V/C) ratios and delays would be reduced in comparison to the proposed Project. The decrease in the number of significantly impacted intersections is due to the decrease in the PM peak hour trip generation of the sensitivity analysis as compared to the PM peak hour trip generation of the proposed project. Table 6 compares the significant and unavoidable impacted intersections of the sensitivity analysis and proposed project, with the inclusion of mitigation measure MM TRA-3 from the Draft EIR.

**Comparison to Draft EIR Alternative 4-1**

Table 7 summarizes the results of the AM and PM peak hour intersection LOS analysis presented in the Draft EIR for Alternative 4-1. As compared to the Alternative 4-1, the sensitivity analysis would result in the same number of significantly impacted intersections and the same number of significant and unavoidable intersections after mitigation. Due to the trip generation, distribution, and assignment of project trips, the land-use mix included in the sensitivity analysis would result in an increase in the V/C ratio after mitigation at the intersections of Inglewood Avenue and Artesia Boulevard (Intersection 13), Hawthorne Boulevard and Artesia Boulevard (Intersection 16), and Prairie Avenue and Artesia Boulevard (Intersection 17), as compared to Alternative 4-1. While the sensitivity analysis would result in the same number of significantly impacted intersections and significant and unavoidable intersections, the AM peak hour trip generation increase would result in more vehicles at the study intersections during the AM peak hour as compared to Alternative 4-1.
Review of Potential Changes Made Since October 2, 2018

During the October 2, 2018 City Council meeting, requests were made by the Redondo Beach Mayor and City Council members to review potential changes to the slightly modified version of Alternative 4-1. In response, the applicant has proposed minor modifications including the addition of a skate park use, adding right-turn outbound access on Artesia Boulevard for hotel traffic, redistribution of retail square footage on site, and adjusting the location of residential uses on site.

Skate Park

A change of adding an 8,000 square foot skate park within the open space of the site was reviewed. Skate park trip generation rates were selected from the Appendix D of the Gun Range Remediation and Reuse Project Traffic Analysis (Stantec Consulting Services, Inc., 2013), conducted by Stantec Consulting Services, Inc. for the City of Huntington Beach on March 15, 2013. The appendices documented the derivation of trip generation rates, which were based upon a site survey from the Etnies Skate Park in Lake Forest, California. The trip generation for a skate park (without MXD calibration) was determined to be 9.14 daily trips per 1,000 square feet, 0.30 AM peak hour trips per 1,000 square feet, and 1.36 PM peak hour trips per 1,000 square feet of skate park use. Fehr and Peers has reviewed these rates and in their expert opinion believe them to be appropriate for use in the Galleria Improvement Project. These trip generation rates were included in the MXD+ trip generation model and methodology that was utilized in the Draft EIR for the proposed project and all project alternatives.

Table 8 presents the net external trip generation estimates for the analysis. The land-use mix included in the analysis is expected to generate 5,908 daily, 435 AM peak hour, and 366 PM peak hour net new trips (on top of the existing trip generation of the project site). This analysis represents a minor increase in the trip generation estimate of 66 daily trips, 2 AM peak hour trips, and 10 PM peak hour trips as compared to the prior sensitivity analysis (5,842 daily trips). The changes represent a 1% increase in the daily, less than 1% increase in AM peak hour trip generation, and a 3% increase in the PM peak hour trip generation.

This increase in trip generation is not anticipated to increase the number of significantly impacted intersections, and is not anticipated to result in a substantial increase in the severity of impacts, as the additional trips would be distributed and assigned throughout the study area such that each

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intersection would receive a negligible number of additional trips compared to what was already assigned in the sensitivity analysis. Furthermore, as noted in Draft EIR Section 4.13, the “proposed Project” analysis assumed daily trip generation rates up to 8,020 daily trips.

**Hotel Right In/Right Out Artesia Boulevard Driveway**

A change of adding an outbound right-turn to the proposed inbound right-turn at the hotel driveway on Artesia Boulevard was reviewed. This change to the hotel driveway is a result of the removal of the private internal surface roadway that connects the hotel driveway to Hawthorne Boulevard. Connectivity from the hotel driveway to Hathorne Boulevard will be possible through the subterranean parking garage. The removal of the private internal surface roadway provides for the development of a pedestrian friendly space adjacent to the hotel. It is assumed that if the outbound right-turn is added at the driveway then the driveway will be moved further west to accommodate lane changing.

Eastbound traffic on Artesia Boulevard at Hawthorne Boulevard is limited to only traveling through the intersection or making a right-turn onto Artesia Boulevard. The inclusion of the outbound right-turn for hotel trips would remove the hotel trips that are anticipated to exit onto Hawthorne Boulevard and make a northbound right-turn onto Artesia Boulevard. For the sensitivity analysis previously conducted, this represents 11 AM peak hour trips and 13 PM peak hour trips. These trips would be removed from the northbound right-turn and added to the eastbound through. All other hotel trips at the Hawthorne Boulevard and Artesia Boulevard intersection are not anticipated to change as only the trips departing eastbound from the intersection would be affected by the new driveway.

The shift in the northbound right-turn volume to the eastbound through volume would result in minimal changes to the v/c ratio and delay at the Hawthorne Boulevard and Artesia Boulevard intersection. The v/c ratio and LOS would not change as part of the volume changes. The delay would increase by a maximum 0.2 seconds and the LOS would not change as part of the volume changes. Consequently, this change is not anticipated to increase the number of significantly impacted intersections, and is not anticipated to result in a substantial increase in the severity of impacts.

**Redistribution of Retail Square Footage**

A change of redistributing the retail square footage on the project site was reviewed. The redistribution of retail square footage would not change the total square footage of retail
development, but rather just change the location of the square footage on the project site. The redistribution of retail square footage would not affect the distribution of the retail traffic as the retail component of the project is located throughout the project site. Retail traffic that was distributed and assigned at intersections further from the project site would not be affected as the traffic would still need to travel to and from the project site and would continue to do so regardless of where on the project site the retail is located. Retail traffic at the project driveways would not be affected as the sensitivity analysis assumed that retail traffic was assigned to multiple project driveways.

**Adjustment of Residential Uses**

A change of adjusting the orientation of the residential uses on the project site was reviewed. The adjustment of the residential land use would change the orientation from the north/south direction along Hawthorne Boulevard to the east/west direction along 177th Street. The adjustment of the residential orientation would not change the total number of residential units, but rather adjust the orientation on the project site. Residential traffic that was distributed and assigned at intersections away from the project site would not be affected as the traffic would still need to travel to and from the project site and would continue to do so regardless of the orientation of the residential use. Residential traffic at the project driveways would not be affected as the sensitivity analysis assumed that the residential traffic was primarily assigned to the southeast corner of the project site and the traffic would still be assigned to the same location.

All combined, none of these modifications would increase the number of significantly impacted intersections and would not result in a substantial increase in the severity of any impacts, including but not limited to Transportation, Air Quality, GHG, and Roadway Noise Impacts.

**Minor Gazebo Events – Noise**

Historically, the Galleria site has held a carnival and circus with amplified music which have ranged in durations from a 3-day event, to two week event at the parking lot on Hawthorne Boulevard and Artesia Boulevard. The parking lot is located approximately 330 feet northwest of the nearest sensitive receptor (located at the northeast corner of Hawthorne Boulevard and West 176th Street).

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3 For example the Circo Caballero ~ Circus Event from August 31, 2017 through September 11, 2017: https://www.facebook.com/events/1540570599332860 and the South Bay Galleria Spring Carnival from
Modifications to the project include the addition of a skate park use within the open space of the site, which is located approximately 530 feet (162 meters) northwest of the nearest sensitive receptor (referenced as R5 in the Draft EIR). It is anticipated that minor gazebo events that could include outdoor music would occur within the skate park. Possible temporary stages and other flexible hardscape, furnishings and fixtures would be programmed into portions of the outdoor space for minor concerts, community events and children’s play areas. For example, holiday events with Christmas caroling and/or holiday music could occur. A three- to six- story retail building (60 feet in height according to the Site Plan) would break the line of sight between the skate park and sensitive receptors and would serve as barriers to outdoor noise sources at the skate park. As discussed on page 3.9-6 of the Draft EIR, a barrier breaking the line of sight to noise sources would provide noise level reductions with additional reduction being achieved through an increased height of the barrier. As also discussed on page 3.9-6 stationary sources attenuate at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance.

According to noise measurements conducted by the University of Michigan, Department of Environmental Health Science⁴, music from speakers can result in noise levels ranging from 75 dBA to 120 dBA. Amplified music can reach noise levels of 120 dBA at approximately 1.2 meters from the source. Utilizing an online sound propagation level calculator, noise levels from worst-case amplified music (120 dBA) located approximately 530 feet (162 meters) from the nearest sensitive receptor were calculated.⁵ A three- to six-story retail building with a maximum height of 65 feet would serve as a barrier between the skate park and R5. Taking into consideration the distance between the noise source and receiver, the height and mass of the building, approximately ten percent soft ground cover, and air absorption, noise levels would attenuate to approximately 39 dBA at R5. Therefore, under worst-case event conditions, outdoor events at the skate park would not result in perceptible increases of baseline ambient conditions of 66.9 dBA at the closest sensitive receptor R5 (see Table 3.9-2 of the Draft EIR).

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⁴ University of Michigan, Department of Environmental Health Science. Noise Navigator Sound Level Database. 2015. Available online at: https://multimedia.3m.com/mws/media/888553O/noise-navigator-sound-level-hearing-protection-database.pdf
⁵ MAS Environmental. Sound Propagation Level Calculator. http://noisetools.net/noisecalculator2
Additionally, anticipated events and amenities would be designed to enhance the guest experience and is not anticipated to accommodate a capacity larger than what was contemplated in the Draft EIR. Further, under current baseline conditions, the nearest sensitive receptor is not shielded from the existing carnival and circus with amplified music by any structures that would provide noise level reductions and there have not been reported noise complaints from near-by sensitive receptors. Furthermore, such entertainment events would be subject to the City’s entertainment permit process, as called out in Condition 18 and RMBC § 4-17.01 et seq.

Given (1) the existing baseline events, (2) the noise attenuation due to distance of the closest sensitive receptors, (3) the noise attenuation due to intervening structures, and (4) the existing entertainment permit regulatory requirements, it is not anticipated that occasional outdoor events held at the skate park would result in a significant noise impacts. No mitigation is required.

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6 This analysis was prepared with the assistance of Olivia Chan, who has a degree in urban and regional planning and four years of experience related to noise analysis, and consultant with Environmental Science Associates (ESA).