MEMORANDUM

Date: June 9, 2015
To: Lauren Colbert, BHV Center Street Properties
From: Sam Tabibnia and Huma Husain
Subject: 1900 Fourth Street - Preliminary Transportation Assessment

This memorandum presents the analysis completed for the proposed development at 1900 Fourth Street in Berkeley, California. The memorandum summarizes automobile trip generation for the site, presents the results of recent environmental documents in the project vicinity, estimates the effects of the project on parking in the area, and reviews site access and circulation for the project.

PROJECT DESCRIPTION

The 2.3 acre project site is bound by University Avenue to the south, 4th Street to the east, Hearst Avenue to the north, and the railroad tracks to the west in Berkeley, California. The site is currently occupied by a privately owned and operated 347-space public surface parking lot. Based on a site plan dated March 25, 2015, the proposed project would construct 135 multi-family residential units, about 14,900 square feet of restaurant, and 18,200 square feet of retail.

The project would provide a garage in the southwest corner of the site with a driveway on Hearst Avenue just east of the railroad tracks for residents and a driveway on 4th Street just north of University Avenue for retail and guest parking. The garage would provide six levels of parking (including an intermediate mezzanine level). The top levels would provide 135 spaces reserved for project residents. The lower levels would provide 237 spaces open to the public. The project would also add ten on-street parking spaces along the project frontage on 4th Street, and eliminate one on-street parking space along project frontage on Hearst Street. Overall, the project would increase the on-street parking supply by nine spaces.
The proposed project would also implement a Transportation Demand Management (TDM) plan to reduce the automobile trips and associated parking. Major components of the TDM plan would include unbundling parking for the residents (where parking spaces are leased separately from the residential units), providing transit passes for site residents and employees, charging for commercial parking, providing ample and secure bicycle parking, and including a bicycle repair room.

VEHICLE TRIP GENERATION

Trip generation is the process of estimating the number of vehicles that would likely access the project. Current accepted methodologies, such as the Institute of Transportation Engineers (ITE) Trip Generation methodology, are primarily based on data collected at freestanding suburban single-use sites. These defining characteristics limit their applicability to mixed-use development projects, such as the proposed project, which is in a high-density walkable urban setting with frequent and nearby local and regional transit service. Fehr & Peers utilized two different methods to adjust the ITE-based trip generation and estimate trip generation for the project. Table 1 summarizes the results. Each method is described below:

- **MXD** - The mixed-use developments (MXD) methodology is a validated method of estimating vehicle trip generation at mixed-use developments developed by the US Environmental Protection Agency (EPA) through a national study of the trip generation characteristics of multi-use sites throughout the country. The methodology adjusts trip generation to account for internal trips to the site and external non-auto trips. Based on application of MXD, the proposed project would generate 35 percent fewer AM and 39 percent fewer PM peak hour trips than estimated by the ITE methodology.

- **WBCMP** - The *West Berkeley Circulation Master Plan* (WBCMP) developed a trip generation methodology specific to development projects in West Berkeley. The methodology adjusts trip generation to account for internal trips to the site and external non-auto trips based on local conditions in West Berkeley. Based on application of WBCMP, the proposed project would generate 34 percent fewer AM and 35 percent fewer PM peak hour trips than estimated by the ITE methodology.
### TABLE 1: PROJECT TRIP GENERATION SUMMARY

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Weekday Daily</th>
<th>Weekday AM Peak Hour</th>
<th>Weekday PM Peak Hour</th>
<th>Weekend Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITE(^1)</td>
<td>3,564</td>
<td>248</td>
<td>298</td>
<td>367</td>
</tr>
<tr>
<td>MXD(^2)</td>
<td>2,602</td>
<td>159</td>
<td>179</td>
<td>NA(^4)</td>
</tr>
<tr>
<td>WBCMP(^3)</td>
<td>NA(^5)</td>
<td>167</td>
<td>199</td>
<td>249</td>
</tr>
</tbody>
</table>

1. Estimated using ITE *Trip Generation (9th Edition)* with no reductions
2. Estimated using MXD Methodology.
4. MXD does not estimate weekend trips.
5. WBCMP does not estimate daily trips.


Thus, both the MXD and WBCMP methodologies account for internalization of trips due to the mixed-use characteristics of the project, and reduction in automobile trips due to proximity of the project to regional and local transit service (Amtrak and AC Transit), and location of the project in a neighborhood with destinations within walking distance.

Both methodologies produce similar results. It is estimated that the proposed project would generate between 160-170 weekday AM peak hour trips and between 180-200 weekday PM peak hour trips, and about 250 weekend peak hour trips, which is about 30 to 40 percent less than the trip generation estimated by the ITE methodology. **Appendix A** provides detailed trip generation calculations.

### REVIEW OF RECENT ENVIRONMENTAL DOCUMENTS

City of Berkeley published the *West Berkeley Project Supplemental EIR* in April 2012 which amended the *West Berkeley Project EIR*, which was published in October 2010. These documents analyze the impacts of the West Berkeley Project which includes various developments throughout West Berkeley. Both documents assume that the project site would be developed as 10,000 square feet of retail space and no residential units.
The West Berkeley Project EIR and SEIR recommend several mitigation measures to the transportation system in the vicinity of the proposed project. However, these mitigation measures, which are generally consistent with the West Berkeley Circulation Master Plan (WBCMP), are not linked to individual development sites.

The West Berkeley Project EIR and SEIR include the following impacts and mitigation measures in the vicinity of the proposed project:

- **University Avenue/Westbound Freeway Ramps Intersection** – The mitigation would redesign the interchange, potentially including a roundabout. The EIR identifies this impact as a significant and unavoidable due to uncertainty in the final design for the improvement.

- **University Avenue/6th Street Intersection** – The mitigation would install a traffic signal at the University Avenue/Southbound 5th Street intersection to allow right-turns from southbound 5th Street onto University Avenue in order to divert traffic from 6th Street. The mitigation would reduce the impact to less-than-significant.

- **University Avenue/San Pablo Avenue Intersection** – No mitigation identified at this intersection. Impact is significant and unavoidable.

- **Allston Way/4th Street Intersection** – The mitigation would install a traffic signal at the intersection and reduce the impact to less-than-significant.

- **Hearst Avenue Railroad Crossing** – The mitigation would signalize the Hearst Avenue/4th Street intersection and provide right-turn lanes on the eastbound and northbound approaches of the intersection within the existing right-of-way. This improvement would minimize potential queue spillbacks onto the railroad tracks and reduce the impact to less-than-significant.

In addition, environmental documents for the following recent specific developments in West Berkeley have also been completed:

- **700 University Avenue** (Fourth and U Apartments, completed) – The project consists of 173 residential units and 12,000 square feet commercial space. Based on the project EIR, the project would generate 113 new AM peak hour, 110 PM peak hour trips, and 70 weekend peak hour trips.\(^1\) The project trip generation was based on application of the ITE methodology with a five percent reduction to account for transit trips. Based on the project EIR, the project would meet the City’s parking code requirements; however, the project EIR

\(^1\) Source: 700 University Avenue Mixed-Use Project Draft EIR, May 2006.
did not analyze parking demand and supply. The project EIR identified the following impacts and mitigation measures:

- **Hearst Avenue/4th Street intersection** – Mitigation consisted of fair share contribution towards installing a signal at the intersection
- **University Avenue/6th Street intersection** – No mitigation identified. Impact is significant and unavoidable.

- **651 Addison Street** (Avalon Berkeley, completed) – The project consists of 94 residential units and 3,100 square feet of commercial space. Based on the project EIR, the project would generate 55 new AM peak hour, 83 new PM peak hour, and 69 new weekend peak hour trips. The project trip generation was based on application of the ITE methodology with a five percent reduction to account for transit trips. Based on the project EIR, the project would meet the City’s parking code requirements; however, the project EIR did not analyze parking demand and supply. The project EIR identified the following impacts and mitigation measures:
  - **Hearst Avenue/4th Street intersection** – Mitigation consisted of fair share contribution towards installing a signal at the intersection
  - **University Avenue/6th Street intersection** – Mitigation consisted of fair share contribution towards upgrading the signal equipment to provide an overlap phase for the southbound right-turns at the intersection. The EIR identified the impact as significant and unavoidable after implementation of the improvement. In addition, the improvement has already been implemented.

- **800 University Avenue** (currently under construction) – The project would consist of 58 residential units and 1,500 square feet of commercial space. The project is estimated to generate 20 new AM peak hour and 26 PM peak hour trips. The project trip generation was based on application of the WBCMP, which reduced the ITE-based trip generation by about 35 percent. No additional traffic impact analysis was conducted and no impacts or mitigations were identified. Project analysis also found that the project would provide adequate parking to meet the City’s parking code requirements and was estimated to satisfy the project’s parking demand.

- **2001 4th Street** (proposed in 2014) – The project would consist of 156 residential units and 13,000 square feet of commercial space that would replace the existing 20,000 square-foot Grocery Outlet supermarket and 20,000 square feet of office. Accounting for the trips generated by the existing uses and using the WBCMP methodology, the project is estimated

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3 Source: 800 University Avenue Preliminary Transportation Analysis, May 2013.
to generate 17 net new AM peak hour trips and reduce PM peak hour trips by 31 trips.\(^4\) No additional traffic impact analysis was conducted and no impacts or mitigations were identified. A parking analysis was also completed for the project. The project would provide a private parking garage for the residential component of the project which would meet the City’s parking code requirements and was estimated to satisfy the parking demand generated by the residential component of the project. The project would also eliminate the existing parking lot and provide a parking lot with about 40 spaces for the commercial component of the project and the adjacent commercial building, which does not provide its own parking. These spaces would meet the City’s parking code requirements, but would not satisfy the estimated peak parking demand and would have a typical peak deficit of about 40 spaces.

- **1901 4th Street/750 Hearst Avenue** (proposed in 2014) – The project, located across 4th Street from the proposed project, would consist of about 10,500 square feet of new retail and office space and 33 new parking spaces.\(^5\) The project was exempt from environmental review and no traffic impact analysis was conducted. The project would exceed the City’s parking code requirements by 13 parking spaces.

- **824 University Avenue** (proposed in 2015) – the project would consist of 48 residential units and 2,800 square feet commercial space. The project is estimated to generate 15 new AM peak hour and 17 PM peak hour trips.\(^6\) The project trip generation was based on application of the WBCMP, which reduced the ITE-based trip generation by about 35 percent. No additional traffic impact analysis was conducted and no impacts or mitigations were identified. A parking analysis was also completed for the project. The project would meet the City’s parking code requirements, but would not satisfy the estimated peak parking demand generated by the project and would have a typical peak deficit of about eight spaces.

Comparing the estimated trips that would be generated by the proposed project to the development projects described above, it is likely that City of Berkeley would require a traffic impact analysis as part of the environmental review for the project. According to the City of Berkeley’s *Guidelines for Development of Traffic Impact Reports* (dated August 16, 2005), the proposed project would also require a detailed traffic impact analysis including analysis of potential project impacts at intersections in the vicinity of the project.

\(^4\) Source: *2001 Fourth Street Preliminary Transportation Analysis*, June 2014.

\(^5\) Based on project site plan dated August 9, 2014 and Zoning Adjustment Board Staff Report dated November 13, 2014 posted on City of Berkeley’s website.

\(^6\) Source: *824 University Avenue Preliminary Transportation Assessment*, January 2015.
It is likely that the environmental analysis for the proposed project would identify the impacts identified in the *West Berkeley Project EIR/SEIR* and listed above. Similar to the development projects described above, it is likely that most of the impacts would only be significant under cumulative conditions. Therefore, the mitigation for most of the impacts would be for the proposed project to contribute fair share of costs to these improvements. In addition, since the proposed project would have a higher density than the project site assumption in the *West Berkeley Project EIR/SEIR*, the proposed project would generate more trips than assumed in these documents and may cause additional impacts.

**PARKING**

The following section describes the existing parking supply and demand in the project vicinity, the City of Berkeley’s parking requirements as it relates to the proposed project, and the project’s estimated parking demand.

*Existing Parking Supply*

The project site is adjacent to a popular commercial corridor along 4th Street with high afternoon parking demand. **Figure 1** shows the on-street and off-street parking supply within about one-quarter mile of the project site, which represents the typical distance that most visitors are willing to park and walk to their shopping destination and also corresponds to the general area surrounding the 4th Street commercial corridor that shoppers, visitors, and employees currently park. On-street parking consists of about 200 metered spaces primarily along the streets with commercial frontages and about 250 unrestricted parking along other streets.

Off-street parking consists of surface parking lots providing about 900 spaces throughout the study area (which increases to about 1,180 spaces during evenings and weekends). These parking lots provide a combination of unrestricted or reserved parking and are generally free, with the following exceptions:

- The project site provides about 350 parking spaces, and is the only fee lot in the area. This parking lot is the only private fee parking lot open to the public that is not associated with a specific development. Compared to other off-street parking facilities that the City required to satisfy parking code, the 1900 Fourth Street Lot is a privately operated parking lot that 4th
Street shoppers and employees can use. As a privately operated lot that is not required for any development, the owner could decide to cease operations. For that reason, while the 1900 Fourth Street Parking Lot is currently open to the public, it is not truly a public parking lot.

- The UC Berkeley University Fourth Street Lot, a 270-space lot on 4th Street north of Virginia Street, is reserved for UC Berkeley staff and requires staff to purchase parking permits during business hours on weekdays but is a fee lot open to the public on weekday evenings and weekends. Considering that UC Berkeley staff are required to pay to park at this lot and that on-street parking on nearby streets is free, it is likely that some staff may be parking on-street; however, the extent of UC Berkeley staff using on-street parking is not known at this time.

**Existing Parking Demand**

Fehr & Peers conducted parking occupancy counts in the study area on a Thursday, Friday, and Saturday (September 12-14, 2014) from noon to 4:00 PM. **Figures 2 through 4** show the peak parking occupancy on each of the three days. Parking demand in the study area peaked at around 1:00 PM on Thursday and Friday, and at around 2:00 PM on Saturday. On-street and public lots along 4th street between Hearst Avenue and Virginia Street were at or near capacity on all three days, while parking was generally available on other streets and lots in the study area.

For both Thursday and Friday, combined demand for on-street and off-street parking peaked at 1:00 PM with an occupancy rate of 78% on Thursday and 73% on Friday. Peak parking occupancy on Saturday occurred at 2:00 PM with a total occupancy of about 84%. During the Saturday peak, about 50 on-street spaces and 175 off-street spaces were unoccupied in the study area. The available on-street spaces were generally south of University Avenue or about two or more blocks from the 4th Street core area. The available off-street spaces were generally in the fee lots.

Since the 1900 Fourth Street Parking Lot is the only fee lot in the area, it generally has lower parking occupancies than on-street parking and other lots in the vicinity. Based on our observations, the peak parking occupancy at the 1900 Fourth Street Parking Lot occurred on Saturday afternoon when the occupancy was about 65% (corresponding to about 230 occupied spaces). The lot was about 50% occupied during the Thursday peak and about 40% occupied during the Friday peak (corresponding to about 180 and 130 occupied spaces, respectively). We
estimate that approximately 35% of weekday and 20% of weekend parking demand at the Parking Lot were Spenger’s Restaurant customers (corresponding to about 50 to 60 parked cars).

**City Code Parking Requirements**

Fehr & Peers compared the proposed number of parking spaces in both the residential and commercial components of the garage for the project with City of Berkeley Municipal Code requirements.

Table 2 summarizes the code-required and proposed parking for the residential component of the project. The proposed project is required to provide 135 residential parking spaces. The project would provide 135 spaces for the residents, which would meet the City Code requirements.

**TABLE 2: REQUIRED AND PROPOSED RESIDENTIAL PARKING**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Ratio&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Units&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>1.0</td>
<td>135 DU</td>
<td>135</td>
</tr>
<tr>
<td>Total Required Parking</td>
<td></td>
<td></td>
<td>135</td>
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<tr>
<td>Residential Parking Supply</td>
<td></td>
<td></td>
<td>135</td>
</tr>
<tr>
<td>Parking Surplus</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

1. Source: City of Berkeley Municipal Code  
2. DU = Dwelling Units  

Table 3 summarizes the code-required and proposed parking for the commercial component of the project. The proposed project is required to provide 87 parking spaces. The project would provide 237 commercial spaces, exceeding the required parking by 150 spaces.

Both residential and commercial parking supply provided by the project would meet the parking code requirements for the project.
**TABLE 3: REQUIRED AND PROPOSED COMMERCIAL PARKING**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Ratio(^1)</th>
<th>Units(^2)</th>
<th>Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Parking</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurant</td>
<td>1:3</td>
<td>14.85 KSF</td>
<td>50</td>
</tr>
<tr>
<td>Retail</td>
<td>1:5</td>
<td>18.23 KSF</td>
<td>37</td>
</tr>
<tr>
<td><strong>Total Required Parking</strong></td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td><strong>Commercial Parking Supply</strong></td>
<td></td>
<td></td>
<td>237</td>
</tr>
<tr>
<td><strong>Parking Surplus</strong></td>
<td></td>
<td></td>
<td>+150</td>
</tr>
</tbody>
</table>

1. Source: City of Berkeley Municipal Code
2. KSF = thousand square feet

**Estimated Project Parking Demand**

Fehr & Peers also estimated the parking demand for both residential and commercial components of the project, as described below:

- Parking demand for the residential component of the project was estimated using a peak parking demand rate of 0.92 vehicles per unit, based on a survey at the Fourth and U Apartments in September 2013. This analysis assumes that similar to the Fourth and U project, the proposed project would unbundle the parking (lease parking separately) and provide transit passes to the residents. The peak parking demand for the residential component of the project is estimated to be 125 spaces, which would occur at night. The residential component of the project would have a peak parking surplus of about 10 spaces.\(^7\) During the weekday business hours, residential parking demand is estimated to be at least 30 percent lower than at night. It is estimated that the 135-space residential garage would have at least 49 spaces available during weekday business hours.

- Fehr & Peers used the Urban Land Institute (ULI) Shared Parking Model to estimate parking demand for the commercial component of the project. The ULI Shared Parking Model

\(^7\) Based on our observations at the Fourth and U Apartments, about 25 percent of the residents did not use the project parking garage and parked on-street. If a similar number of residents at the proposed project do not park on-site, then the peak demand at the residential garage would be about 94 spaces, resulting in a surplus about 41 spaces.
accounts for factors such as non-auto mode share\(^8\) and sharing parking spaces across different land uses. It is estimated that parking demand for the commercial component of the project would peak at around noon during the month of December when the parking demand would be about 160 vehicles during weekdays and 210 vehicles during weekends. Peak parking demand at other times of the year is estimated to be lower, and range from 130 to 150 on weekdays and from 170 to 190 on weekends.

**Figure 5** shows the hourly parking demand for weekdays and weekends during typical December operations for the commercial component of the project. The proposed parking supply would exceed the project generated parking demand at all times.

The estimated parking demand is higher than the minimum parking required by City Code. The City's low parking requirements are consistent with the City's General Plan policies to discourage the use of private automobiles and encourage the use of other travel modes.

**Estimated Parking Demand Accounting for Existing Demand**

As previously described, the current peak demand for the 1900 Fourth Street Parking Lot is about 180 spaces on weekdays and 230 spaces on weekends. As described on page 6 of this memorandum, the proposed 1901 4th Street/750 Hearst Avenue project (which includes Spenger’s Restaurant) would increase the parking supply for the that project. Thus, some of Spenger’s Restaurant customers who currently use the 1900 Fourth Street Parking Lot would park across the street. However, this analysis conservatively assumes that the parking demand at the existing site would remain same as current conditions.

**Table 4** summarizes the demand for the commercial parking accounting for the existing parking demand at the 1900 Fourth Street Lot, assuming that all vehicles currently parking at the 1900 Fourth Street Lot would continue to park at this location. This is a somewhat conservative assumption that assumes that motorists currently parking at the lot would continue to want to park at this location. However, if these spaces are eliminated, motorists will either search for parking at other locations, such as on-street outside the study area, or use other modes to travel to and from the area.

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\(^8\) Consistent with the trip generation analysis, the shared parking analysis for the commercial component of the project reduces the customer parking demand by 25 percent and the employee parking demand by 40 percent.
Table 4: Estimated Total Commercial Parking Demand

<table>
<thead>
<tr>
<th></th>
<th>Weekday</th>
<th></th>
<th>Weekday</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typical</td>
<td>December</td>
<td>Typical</td>
<td>December</td>
</tr>
<tr>
<td>Proposed Project ^1</td>
<td>130</td>
<td>160</td>
<td>140</td>
<td>170</td>
</tr>
<tr>
<td>Existing Demand at 1900 Fourth Street Lot</td>
<td>180 ^2</td>
<td>210 ^3</td>
<td>230 ^2</td>
<td>260 ^3</td>
</tr>
<tr>
<td><strong>Total Parking Demand</strong></td>
<td><strong>310</strong></td>
<td><strong>370</strong></td>
<td><strong>370</strong></td>
<td><strong>430</strong></td>
</tr>
<tr>
<td><strong>Proposed Parking Supply</strong> ^4</td>
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<td>246</td>
<td>246</td>
<td>246</td>
</tr>
<tr>
<td><strong>Surplus/Deficit</strong></td>
<td>-64</td>
<td>-124</td>
<td>-124</td>
<td>-184</td>
</tr>
</tbody>
</table>

1. Based on ULI Shared Parking Model. September demand is used for typical conditions and the highest peak demand is expected during December.
2. Based on observations in September 2014.
3. Estimated using seasonal adjustment rates provided in ULI Shared Parking.
4. Includes 237 on-site spaces designated for commercial use and 9 on-street parking spaces.


Table 4 presents parking demand for typical conditions and peak December conditions. It is estimated that the proposed project would result in a peak parking deficit of about 60 to 180 spaces depending on day of week and time of year.

The parking deficit is estimated to result in the following:

- The UC Berkeley Fourth Street Lot north of Virginia Street is restricted to university employees’ use during business hours on weekdays. The lot is available to public use on weekend and provides adequate space to accommodate the weekend parking deficit.
- Employees and visitors to 4th Street parking on-street further from the 4th Street core where on-street parking would be available.
- Some employees and visitors would shift to other travel modes, which would be consistent with City of Berkeley’s General Plan goals to promote non-auto travel modes.
- Some visitors may decide to not travel to 4th Street.

Parking Conclusions and Recommendations

The proposed project would provide adequate parking to satisfy City Code requirements and meet the parking demand generated by the proposed project at all times. Demand generated by
the proposed project combined with the demand at the existing 1900 Fourth Street Parking Lot would result in a parking deficit during peak demand periods. Based on our assessment, parking will likely be a significant and controversial focus for the site for the following reasons:

- Although the paid parking lot at 1900 Fourth Street is generally about half occupied, it represents around 29% of the off-street parking in the study area and about 21% of the combined on- and off-street parking. While it is generally the parking of last resort because it is paid, it serves as a safety valve for unmet parking demand, particularly during periods of high demand.
- Parking codes for non-residential uses in West Berkeley are low, resulting in high demand for on-street and publicly-available off-street parking.
- Current City policies preclude neighborhood parking permits from being used in West Berkeley, so it is not possible to prohibit area employees, customers, or residents from using on-street parking.9

As previously shown, the existing parking occupancy in the study area and the estimated demand for parking with the proposed project will exacerbate the current parking issues in the surrounding neighborhood. Providing additional commercial parking beyond the demand generated by the proposed project would alleviate the parking deficit in the area.

The proposed project is consistent with the City Code requirements because it would provide more parking than required by City Code. Although the project would result in a parking deficit in the project area during peak periods due to the existing parking demand at the site, the project would be consistent with the City’s General Plan and West Berkeley Plan goals and policies, which promote non-automobile trips over automobile trips. General Plan Policy T-40 states that “parking impacts ... should not be mitigated through the provision of additional parking on the site.” Instead of increasing the on-site parking supply to meet the estimated parking demand, the project proposes to reduce the parking demand by locating in an area with good pedestrian and bicycle connections and near transit service, and by implementing TDM measures and parking management policies as previously described.

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9 The City’s Municipal Code restricts the use of neighborhood parking permit program to residential districts, and the West Berkeley district is ineligible. However, the City is currently in the process of modifying the Code and may allow permit parking in the project area.
The project would also be consistent with the following goals and policies of the Transportation Element of the West Berkeley Plan, which state a strong preference for discouraging single-occupant automobile travel and promoting other modes of travel:

- **Goal 1** is to "improve traffic flow and air quality by reducing reliance on single-occupant automobiles, by encouraging use of alternative means of transportation"
- **Policy 1.1** seeks a "reduction of single-occupant automobile trips through a variety of educational and regulatory efforts."
- **Goal 4** aims "to create and maintain adequate parking to support West Berkeley land uses without creating incentives for single occupant automobile use," with the emphasize that "it is also important to not provide so much free parking that people are encouraged to drive more than they would otherwise."
- **Policy 4.4** encourages new developments to charge for parking.

The proposed parking supply, which would exceed City Code requirements, would be adequate to meet the expected parking demand at most times, except during peak conditions. The project would also charge residents, employees, and visitors for parking, and implement TDM strategies to further incentivize the use of non-automobile travel modes. These aspects of the proposed project combined would discourage excessive driving and promote the use of other travel modes to and from the project area, consistent with the goals and policies of the City of Berkeley listed above.

The proposed project would have a higher parking deficit during the December holiday shopping period than other times of the year. This is typical of urban retail centers where the parking supply is designed to meet the parking demand throughout most of the year but not the few busiest days during the holiday shopping period. Providing adequate parking supply to meet the highest parking demand would require considerable resources to construct and maintain parking facilities that would be vacant throughout most of the year and are only used for a few hours on few days a year. In addition, an excessive parking supply would not be consistent with the urban setting of the project, would induce additional automobile trips and be in conflict with the goals and policies of City of Berkeley, which aim to encourage pedestrian, bicycle, and transit activity, as described above.
It is expected that as customers and employees become familiar with the parking shortage in the study area during peak periods, they would shift to other modes of travel, change the time of their trip to a less congested time period, and/or go to other shopping destinations in the larger area. Considering that the project is located in a dense walkable neighborhood with good local and regional transit service, any such shifts to other modes of travel would be consistent with the goals of the City’s General Plan, the City’s low parking requirements, and in keeping with the City’s “Transit-First” policy, which prioritizes non-motorized travel modes and transit over single-occupant vehicle travel.

The secondary effects of drivers searching for parking in congested urban environments is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in the area. Hence, any secondary environmental impacts which may result from a shortfall in parking in the vicinity of the proposed project would be minor, and not result in additional traffic impacts, or in the associated air quality and/or noise impacts.

We recommend the following to help reduce some of the parking demand and manage the available parking supply:

1. Make the un-leased residential parking spaces available to non-residential uses, such as employees for the commercial component of the project. It is estimated that this strategy can accommodate about 10 additional cars at peak times.
2. Limit most parking in the commercial garage to three hours or less to promote parking turnover and discourage employee parking.
3. Implement additional TDM measures to encourage employees and residents to use other travel modes. TDM measures are in general most effective in reducing automobile demand for residents and employees. Considering that the majority of the parking demand during the peak periods are generated by customers, TDM measures would have limited effectiveness in reducing the peak parking demand.
4. Provide signage in the project vicinity to inform motorists that the UC Berkeley Fourth Street Lot is available during weekday evenings and weekends.

**SITE PLAN REVIEW**

This section evaluates access and circulation of all travel modes within the proposed site, based on the site plan dated March 25, 2015.
**Pedestrians Access**

The project provides adequate pedestrian facilities with the primary pedestrian access along 4th Street and Hearst Avenue, as well along a paseo that runs between the two streets. The paseo also provides access to the garage elevators. Primary pedestrian access for residents is located on University Avenue, where the residential lobby, elevators, and bike storage are located. The 4th Street, University Avenue, and Hearst Avenue pedestrian entrances all meet ADA accessibility requirements. Pedestrians can access the garage from all three pedestrian entrances.

A mid-block pedestrian crosswalk is proposed on 4th street with bulb-outs and planters to improve pedestrian safety and comfort. The proposed project adjacent to the Spenger’s restaurant on the other side of 4th Street proposes to provide a paseo that may align with this project’s paseo. We recommend relocating the existing mid-block crosswalk on 4th Street to connect the two paseos.

City of Berkeley Municipal Code Section 16.18.080 requires a minimum clear space of six feet on all sidewalks. Sidewalks along project frontage on Hearst Avenue, 4th Street and University Avenue are adequately wide to accommodate potential sidewalk encroachment (e.g. bicycle racks and planted trees) and continue to provide six feet of space for pedestrians.

**Bicycles Parking**

Although the project is not required to provide bicycle parking for residents, the site plan proposes a bicycle storage facility for project residents and repair space adjacent to the garage along University Avenue. The bicycle storage facility would accommodate about 150 bicycle parking spaces (more than one bicycle per residential units).

Section 23E.64.080 of the Berkeley Municipal code requires bicycle parking spaces for non-residential uses at a rate of one space per 2,000 square feet of non-residential space. The project would add 33,100 square feet of non-residential area, requiring 17 bicycle parking spaces. The site plan identifies a bicycle storage facility for the project employees within the garage and adjacent to the driveway on Fourth Street. The bicycle storage facility would provide secure bicycle parking for 60 bicycles.
The project would also provide 26 short-term bicycle parking spaces for site visitors and shoppers in the form of bicycle racks and bicycle corral along project frontage on 4th Street. Overall, the project would exceed the City Code requirements for bicycle parking.

**Commercial Loading**

Section 23E.32.020 of the Berkeley Municipal Code requires one off-street loading space if the project provides 10,000 square feet or more of new commercial area plus one additional loading space for each additional 40,000 square feet thereafter. The project would provide 33,100 square feet of commercial area, requiring one off-street loading spaces. The project site plan proposes two retail loading spaces within the first floor of the garage, which exceeds City Code requirements.

**Automobile Circulation**

Automobile access for the project would be provided through the following two driveways:

- The driveway for the commercial garage on 4th Street would provide two lanes, an entry and exit lane for public parking. As previously described, commercial parking demand for the garage is expected to be high due to the high volumes of retail visitors in the area. A real-time parking information system with a "garage full" sign at the entrance to the garage would help to ensure vehicles are not unnecessarily waiting to enter the driveway and minimize queues. Vehicles entering and exiting the commercial parking may conflict with the relatively high pedestrian volume along the sidewalk on 4th Street.

- The residential entrance to the parking garage would be on Hearst Avenue, approximately 50 feet east the railroad tracks, with one entry and one exit lane. The lower residential demand for parking and the long driveway entrance to the garage would minimize potential queuing issues and conflicts on Hearst Avenue and at the railroad tracks.

Based on our review of the site plan, the project driveway on 4th Street would provide adequate sight distance between vehicles exiting the garage and pedestrians on the adjacent sidewalk and vehicles on 4th Street. The driveway on Hearst Avenue may not provide adequate sight distance between exiting vehicles and pedestrians on the sidewalk to the east of the project.
The project garage would consist of a multi-level parking structure with the top levels reserved for residential parking and the bottom levels open for commercial parking. A single two-way drive-aisle would provide access to all parking spaces and a gate would separate the residential and commercial components of the garage. When the garage is at or near capacity, it is likely that motorists looking for available parking would drive to the top of the commercial garage. Considering that no designated turnaround space is provided, vehicles may block the residential gate as they try to make a U-turn in the drive aisle. It is recommended that one or two commercial parking spaces adjacent to the residential parking gate be eliminated to allow for vehicle turnarounds and minimize congestion within the garage.

**Site Plan Review Conclusions**

Based on our review of the project site plan, dated March 24, 2015, we recommend the following:

1. Ensure that project-fronting sidewalks provide a minimum of 6 feet of clear zone for pedestrians.
2. Consider relocating the existing mid-block crosswalk on 4th Street to align with the proposed paseos on either side of 4th Street.
3. Install a message sign at the 4th Street driveway to inform motorists when garage is full to minimize potential queues. The sign can be automated through an automatic parking counting system.
4. Ensure that both project driveways provide adequate sight distance between exiting vehicles and pedestrians on the adjacent sidewalk and vehicles on the street.
5. Provide an automobile turnaround area at the top of the commercial component of the garage before the gate separating the commercial and residential components of the garage.

Please contact us with questions or comments.
### APPENDIX A – TRIP GENERATION TABLES

#### TABLE A1: MXD VEHICLE TRIP GENERATION

<table>
<thead>
<tr>
<th>Land Use</th>
<th>ITE Code</th>
<th>Size1</th>
<th>Daily</th>
<th>Weekday AM Peak Hour</th>
<th>Weekday PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Trips</td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Apartments2</td>
<td>220</td>
<td>135 DU</td>
<td>898</td>
<td>14</td>
<td>55</td>
</tr>
<tr>
<td>Retail3</td>
<td>820</td>
<td>18.2 KSF</td>
<td>778</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Restaurant4</td>
<td>932</td>
<td>14.9 KSF</td>
<td>1,888</td>
<td>89</td>
<td>72</td>
</tr>
<tr>
<td><strong>Total Raw ITE Trips</strong></td>
<td></td>
<td></td>
<td>3,564</td>
<td>114</td>
<td>134</td>
</tr>
<tr>
<td><strong>MXD Reductions5</strong></td>
<td></td>
<td></td>
<td>-962</td>
<td>-41</td>
<td>-48</td>
</tr>
<tr>
<td><strong>Net New Project Trips</strong></td>
<td></td>
<td></td>
<td>2,602</td>
<td>73</td>
<td>86</td>
</tr>
</tbody>
</table>

1. DU = dwelling units, KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 220 (Apartments):
   - Daily: 6.65 trips per DU
   - AM Peak Hour: Average Rate = 0.51 trips per DU (20% in, 80% out)
   - PM Peak Hour: Average Rate = 0.62 trips per DU (65% in, 35% out)
3. ITE Trip Generation (9th Edition) land use category 820 (Shopping Center):
   - Daily: 42.7 trips per DU
   - AM Peak Hour: Average Rate = 0.96 trips per KSF (62% in, 38% out)
   - PM Peak Hour: Average Rate = 3.71 trips per KSF (48% in, 52% out)
4. ITE Trip Generation (9th Edition) land use category 932 (High-Turnover Sit-Down Restaurant):
   - Daily: 127.15 trips per DU
   - AM Peak Hour: Average Rate = 10.81 trips per KSF (55% in, 45% out)
   - PM Peak Hour: Average Rate = 9.85 trips per KSF (60% in, 40% out)
5. Based on application of the MXD mode: Daily = 27%, AM Peak Hour = 36%, PM peak Hour = 40%

TABLE A2: WBCMP TRIP GENERATION

<table>
<thead>
<tr>
<th>Land Use</th>
<th>ITE Code</th>
<th>Size¹</th>
<th>Weekday AM Peak Hour</th>
<th>Weekday PM Peak Hour</th>
<th>Weekend Peak Hour</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>Apartments²</td>
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<td>135 DU</td>
<td>14</td>
<td>55</td>
<td>69</td>
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<tr>
<td>Retail³</td>
<td>820</td>
<td>18.2 KSF</td>
<td>11</td>
<td>7</td>
<td>18</td>
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<tr>
<td>Restaurant⁴</td>
<td>932</td>
<td>14.9 KSF</td>
<td>89</td>
<td>72</td>
<td>161</td>
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<tr>
<td>Total Raw ITE Trips</td>
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<td></td>
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<td>248</td>
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<tr>
<td>Net New Project Trips</td>
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<td>79</td>
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<td>167</td>
</tr>
</tbody>
</table>

1. DU = dwelling units; KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 220 (Apartments):
   - AM Peak Hour: Average Rate = 0.51 trips per DU (20% in, 80% out)
   - PM Peak Hour: Average Rate = 0.62 trips per DU (65% in, 35% out)
   - Sat Peak Hour: Average Rate = 0.52 trips per DU (50% in, 50% out)
3. ITE Trip Generation (9th Edition) land use category 820 (Shopping Center):
   - AM Peak Hour: Average Rate = 0.96 trips per KSF (62% in, 38% out)
   - PM Peak Hour: Average Rate = 3.71 trips per KSF (48% in, 52% out)
   - Sat Peak Hour: Average Rate = 4.82 trips per KSF (52% in, 48% out)
4. ITE Trip Generation (9th Edition) land use category 932 (High-Turnover Sit-Down Restaurant):
   - AM Peak Hour: Average Rate = 10.81 trips per KSF (55% in, 45% out)
   - PM Peak Hour: Average Rate = 9.85 trips per KSF (60% in, 40% out)
   - Sat Peak Hour: Average Rate = 14.07 trips per KSF (53% in, 47% out)
5. Based on application of the West Berkeley Circulation Master Plan (WBCMP) Trip Generation Tool:
   - AM and PM Peak Hours = 33%; Saturday Peak Hour = 32%

LEGEND

Unrestricted Parking
Metered Parking
Time-Restricted
Un-metered Parking
Loading Zone
Disabled Parking
No Parking Anytime
On-Street Parking Supply
Off-Street Parking Supply
Reserved Parking
Public Parking
Paid Parking

Note: UC Berkeley Fourth Street Lot is reserved parking during weekday business hours and open to the public for a fee during evenings and weekend.

Figure 1

Existing On-Street Parking Supply
LEGEND

- 0 - 50% Parking Occupancy
- 50 - 70% Parking Occupancy
- 70 - 80% Parking Occupancy
- 80 - 90% Parking Occupancy
- > 90% Parking Occupancy

Figure 2

Existing Thursday Peak On-Street Parking Occupancy
Figure 3

LEGEND

- 0 - 50% Parking Occupancy
- 50 - 70% Parking Occupancy
- 70 - 80% Parking Occupancy
- 80 - 90% Parking Occupancy
- > 90% Parking Occupancy

Existing Friday Peak On-Street Parking Occupancy
Parking Supply: 237 Stalls

Figure 5

Peak December Project Parking Demand by Hour (Commercial)