APPENDIX F:

TRANSPORTATION STUDY

Crain & Associates,
Juniper Grove Project Trip Generation Analysis &
Transportation Impact Assessment,
Avenue R & Division Street,
City of Palmdale,
February 5, 2019.
EMAIL TRANSMITTED

February 5, 2019

Mr. Bill Padilla
City Traffic/Transportation Engineer
City of Palmdale Public Works Department
Traffic and Transportation Division
38250 Sierra Highway
Palmdale, CA 93550

RE: Juniper Grove Project Trip Generation Analysis & Transportation Impact Assessment
Avenue R & Division Street, City of Palmdale

Dear Mr. Padilla,

Background

Meta Housing Corporation proposes to develop a residential apartment project at the southeast corner of the intersection of Avenue R and Division Street in the City of Palmdale (the “City”). The project would entail the construction of a three-story development, with 101 multifamily apartment dwelling units designated for affordable housing (the “Project”). The 101 dwelling units would consist of 49 one-bedroom units, 27 two-bedroom units, and 25 three-bedroom units. The Project site location is depicted in Figure 1. In order to comply with the City’s transportation impact analysis requirements for the Project, a trip generation analysis and transportation impact assessment have been performed and are presented in this technical letter.
Project Description

The conceptual site plan for the Project is presented in Figure 2. As shown, the proposed development would consist of the construction of 101 apartment dwelling units on a site that is presently unoccupied. Parking would be provided in accordance with the City’s Municipal Code off-street parking requirements, including those for housing developments seeking a density bonus. The Project would provide 153 total off-street parking spaces (105 carport spaces and 48 tandem spaces).

Project access/egress would be provided via two driveways. The first driveway would intersect the south side of Avenue R near the eastern boundary of the Project site. This driveway is proposed to function as a full-access facility, with all left- and right-turn movements allowed. However, City staff has indicated that turning movements at this driveway may be limited to right-turn entry/exit-only. City staff has also recommended that a right-turn lane be provided for eastbound traffic on Avenue R at the Project driveway. The second driveway would intersect the east side of Division Street near the southern boundary of the Project site. That driveway is proposed as a full-access facility. City staff has recommended that a left-turn pocket be provided for southbound traffic on Division Street at the Project driveway. Both driveways will be equipped with security gates that will be set back approximately 70 to 80 feet from the Project property line.

Project Trip Generation

The latest version of the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017) was used to develop the traffic characteristics of the Project. The trip generation equations and rates in the ITE manual are nationally recognized and are used as the basis for most transportation impact analyses conducted in the City and surrounding region. Information was obtained from the Trip Generation Manual for ITE Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise), given that this land use code represents “apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors).” Although affordable housing projects tend to generate fewer trips than residential projects without income restrictions, the ITE manual has no land use code specifically for affordable multifamily housing.

Table 1 presents the trip generation rates and directional distributions used to generate the weekday daily and peak-hour traffic volumes for the Project. As shown in Table 1, no trip credits were applied to the baseline trip estimates that would account for the affordable housing nature of the Project, thereby resulting in more conservative trip estimates. By
applying the trip rates and directional distributions shown, weekday daily, AM peak-hour, and PM peak-hour trips were calculated for the proposed use. These trip estimates are also summarized in Table 1. As shown, once completed and occupied, the Project is expected to generate approximately 549 daily trips, with 36 AM peak-hour trips (9 inbound, 27 outbound), and 44 PM peak-hour trips (27 inbound, 17 outbound).

**Project Transportation Impacts – City Guidelines**

Per direction from City staff during the Project pre-application meeting on December 12, 2018, a transportation impact study is required when a project is likely to add 100 or more peak-hour trips to the local street system. Given that the Project would add no more than 44 vehicle trips to the local street system during the either weekday peak hour, the Project would not meet the City’s peak-hour threshold for impact analysis and would not be expected to result in a significant transportation impact to any of the surrounding intersections or roadway segments. Therefore, per City guidelines, no further analysis of transportation impacts is required.

**Project Transportation Impacts – County Guidelines**

Per comments provided by the City of Palmdale Office of the Traffic/Transportation Engineer (dated December 19, 2018) as part of the Development Advisory Board Review of Pre-Application 18-030 for the Project, a traffic study should be prepared “in compliance with the Congestion Management Plan.” The current Congestion Management Plan for the City of Palmdale is the 2010 Congestion Management Program (CMP) for Los Angeles County, prepared by the Los Angeles County Metropolitan Transportation Authority (“Metro”). Appendix D of the 2010 CMP outlines its recommended guidelines for CMP transportation impact analysis.

Per Section D.4 of Appendix D, the study area for a project transportation impact analysis must include all CMP arterial monitoring intersections where a project will contribute 50 or more trips during the weekday AM or PM peak hour; CMP arterial segments where a project will add 50 or more trips during the weekday AM or PM peak hour; and freeway mainline monitoring locations where a project will contribute 150 or more trips, in either direction, during the weekday AM or PM peak hour. As shown in Table 1, the Project would contribute no more than 44 vehicle trips to the local street system during the either weekday peak hour. Thus, the Project would not meet any of the abovementioned trip threshold criteria for impact analysis.

The 2010 CMP also requires that all projects consider potential transit impacts. As shown in Table 1, no transit adjustment was applied to the Project trip generation given that there is no
fixed transit service within a comfortable walking distance of the Project site (approximately 0.5 miles). However, per the 2010 CMP guidelines, person transit trips can generally be estimated by multiplying the total vehicle trips by a factor of 1.4 to convert to person trips, then multiplying those trips by 3.5 percent to determine person transit trips. Per this methodology, the number of proposed Project person transit trips would be approximately 27 daily person transit trips, with 2 AM peak-hour and 2 PM peak-hour person transit trips. Based on the most recent available Antelope Valley Transit Authority (AVTA) Line-by-Line Analysis (Dan Boyle & Associates, Revised August 2010), the three bus lines closest to the Project site experience ridership levels well below capacity on weekdays. AVTA Routes 1, 2, and 3 operated on weekdays with average seat utilizations of 42.6 percent, 21.7 percent, and 13.3 percent, respectively. Although the line-by-line analysis was performed in 2010 and these transit lines have been modified in the intervening years, it is reasonable to assume that the local transit system still offers substantial available ridership capacity. The daily and peak-hour levels of Project transit ridership are anticipated to have a minimal impact on transit service in the study area. Thus, no further analysis of transportation impacts is required.

Please contact me if you have any questions.

Sincerely,

Ryan J. Kelly, T.E.
Senior Transportation Engineer
TR 2547
FIGURES
TABLE
### TABLE 1

**JUNIPER GROVE PROJECT**  
**WEEKDAY TRIP GENERATION RATES AND SUMMARY**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>ITE Code</th>
<th>Intensity(^2)</th>
<th>Average Weekday</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>Trip Generation Rates</td>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>Multifamily Housing (Mid-Rise)</td>
<td>221</td>
<td>1 du</td>
<td>5.44</td>
<td>26%</td>
<td>74%</td>
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</tbody>
</table>

**Trip Generation Summary**

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Average Weekday</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>PROPOSED USES</td>
<td></td>
<td>In</td>
<td>Out</td>
<td>Total</td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td>101 du</td>
<td>549</td>
<td>9</td>
</tr>
<tr>
<td>Multifamily Housing (Mid-Rise)</td>
<td></td>
<td>549</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>Proposed Project Trips</td>
<td></td>
<td>549</td>
<td>9</td>
<td>27</td>
</tr>
</tbody>
</table>

**Notes:**

1) **ITE Trip Generation Manual** (10th Edition, 2017) trip generation rates and equations applied for Land Use Code 221 (Multifamily Housing [Mid-Rise]). This land use code was chosen as mid-rise multifamily housing includes "apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors)." The General Urban/Suburban setting was used given that this setting, as opposed to the Dense Multi-Use Urban or Center City Core settings, best represents the project location.

2) du = Dwelling Units.