FEHR PEERS

Memorandum

Date: April 14, 2023

To: Olivia Ervin, M-Group

From: Sam Tabibnia, Fehr & Peers

Subject: Pinole Shores Project – Supplemental Analysis for Warehouse/Distribution Use

OK22-0492

This memorandum summarizes the supplemental analysis conducted by Fehr & Peers for the proposed Pinole Shores Project (the project) in Pinole, CA. Previously, Fehr & Peers submitted a Transportation Impact Analysis (TIA) for this project dated February 22, 2023, which assumed the project use to be research and development (R&D). This supplemental analysis addresses the impacts of the project as a warehouse/distribution center.

Based on the supplemental analysis:

- Warehouse/distribution center use at the project is estimated to generate about 650 daily, 99 AM peak hour, and 86 PM peak hour passenger car equivalent (PCE)[1] trips.
- Warehouse/distribution center use would generate fewer trips than the R&D use assumed in the February 2023 TIA; thus, the conditions evaluated in the TIA represent conservative conditions and the recommendations, which are provided at the end of this memorandum, continue to be applicable to the project.
- Since the project would continue to be an employment-based use, the vehicle miles traveled (VMT) analysis presented in the TIA would remain the same, and the project would continue to have a less than significant impact on VMT.

The remainder of this memorandum provides more detail on the updated trip generation for the project and lists the recommendations from the February 2023 TIA.

[1] Passenger car equivalent (PCE) is used to convert truck and bus trips to passenger car trips to account for trucks and buses being larger and moving slower than passenger cars.

Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*, *Eleventh Edition,* presents trip generation rates for various warehouse/distribution center uses applicable to the project site (see Table 2 in the TIA for details). The highest trip generating warehouse/distribution center use that could occupy the project site is high-cube parcel hub warehouse. Thus, this analysis assumes the project to be a high-cube parcel hub warehouse.

The ITE *Trip Generation Manual* also provides data on truck trip generation for the high-cube parcel hub warehouse use, which is used to estimate the project trip generation. Since trucks are larger and operate slower than passenger vehicles, a PCE of 2.5 is used to convert the truck trips to passenger vehicle trips (each truck is counted as 2.5 passenger vehicles).

Table 1 presents the trip generation for the project assuming a warehouse/distribution center use. The project is estimated to generate about 650 daily, 99 AM peak hour, and 86 PM peak hour PCE trips. Compared to the R&D use, the warehouse/distribution center use would generate about 660 fewer daily, 22 fewer AM peak hour, and 30 fewer PM peak hour trips. Since warehouse/distribution center use would generate fewer trips than R&D use, the results of the TIA which was based on R&D use represent conservative conditions and continue to be applicable to the project.

Table 1: Project Automobile Trip Generation

Land Use	Size[1]	Daily Trips	AM Peak Hour	PM Peak Hour
Warehouse[2]	117.9 KSF	550	83	75
Truck PCE Adjustment[3]		100	16	11
Total PCE Trips		*650*	*99*	*86*
Project Evaluated in TIA (R&D)[4]		1,310	121	119
Net Difference		**-660**	**-22**	**-30**

Notes:
1. KSF = 1,000 square feet.
2. Based on vehicle trip generation rates in ITE *Trip Generation Manual, 11th Edition* land use category 156 (High-Cube Parcel Hub Warehouse) in General Urban/Suburban Setting:
   Daily: T = 4.63 * X
   AM Peak Hour: T = 0. 70 * X
   PM Peak Hour: T = 0.64 * X
3. Based on truck trip generation rates in ITE *Trip Generation Manual, 11th Edition*, land use category 156 (High-Cube Parcel Hub Warehouse) in General Urban/Suburban Setting:
   Daily: T = 0.58 * X
   AM Peak Hour: T = 0.09 * X
   PM Peak Hour: T = 0.06 * X
   This trip generation estimate assumes a PCE of 2.5 for the truck trips.
4. *Pinole Shores Project – Transportation Impact Analysis Memorandum* (dated February 22, 2023), Table 3.

Source: Fehr & Peers, 2023.

Summary of Recommendations

The following recommendations, detailed in the project TIA dated February 22, 2023, continue to be applicable to the warehouse/distribution center project:

- **Recommendation 1:** Prior to the occupancy of the project, convert the Project Driveway and the Meadow Avenue approaches at the San Pablo Avenue/Meadow Avenue/Project Driveway intersection to right-turns only by prohibiting left-turns and through movements via signage and striping. The Project Driveway approach at the intersection shall also be narrowed from two lanes to one lane.
- **Recommendation 2:** Lengthen the eastbound left turn pocket on San Pablo Avenue from 60 to 130 feet, increasing the queue storage for large trucks. The current 60-foot left-turn pocket can accommodate only one WB-67 truck and other vehicles queuing on the eastbound left-turn pocket would spill back onto the through travel lanes on San Pablo Avenue.
- **Recommendation 3:** Relocate the existing crosswalk across the project driveway closer to the intersection to align with the existing sidewalk along the north side of San Pablo Avenue, which would provide additional queue storage for vehicles exiting the project site and improve pedestrian circulation along the project frontage.
- **Recommendation 4:** Install a new stop sign with pavement markings at the private parking lot intersection immediately north of the intersection with San Pablo Avenue, which would minimize queuing within the project site, maintain access to the drive aisle just north of the project driveway, and minimize the inbound project queues spilling back onto San Pablo Avenue.
- **Recommendation 5:** Within one year after the full occupancy of the project, install a traffic signal at the San Pablo Avenue/Meadow Avenue/Project Driveway intersection, unless a full signal warrant study has been completed for the intersection that shows a signal is not needed. If a signal is installed at the intersection, the right-turn only restrictions at the Project Driveway and the Meadow Avenue approaches of the intersection shall be removed and the Project Driveway approach at the intersection shall be widened to two lanes.

Please contact Sam (stabibnia@fehrandpeers.com, 510-835-1943) with questions or comments.