

# Memorandum

Date: June 7, 2021  
To: Derrick Matano, Project Management Advisors, Inc.  
From: Rob Rees, PE and Gaby Picado-Aguilar, Fehr & Peers  
**Subject: Preliminary Transportation Demand Management Plan**

OK20-0391

The proposed Maple & Main development (Project) is required to prepare a Transportation Demand Management (TDM) Plan per the City of Hayward's Conditions of Approval (COA) from the Hayward City Council Resolution No. 17-013 dated February 7<sup>th</sup>, 2017 approving the project for the previous applicant. This memorandum describes the project and setting, lists the required TDM strategies that the project shall implement to achieve a 20 percent Vehicle Trip Reduction (VTR) as stated in the COA, provides the additional strategies that should be considered if the 20 percent VTR is not achieved, and provides recommendations for monitoring, evaluation, and enforcement of the TDM Plan.

According to our TDM analysis results, the proposed project and required COA TDM measures could achieve a 15 percent VTR under typical conditions and up to 40 percent VTR with a high level of support and marketing. If monitoring shows the Project is below the 20 percent VTR threshold, additional effective TDM strategies are available given the Project specific characteristics.

# Project Context

## Project Description

The Project is a mixed-use project located on McKeever Avenue, between Maple Court and Main Street in Hayward, California. The Project would consist of 314 multi-family residential units, 63 of which are designated as affordable housing. Additionally, it includes 7,100 square feet of retail. The 251 market rate units are located in a 5-story building facing both Main St and Maple Court, while the 63 affordable housing units and 7,100 SF of retail are located in a 4-story building at the corner of McKeever Ave and Maple Court. Additional amenities in the project for the resident use include a club house, a gym, and a leasing center. The Project would provide a total of 426 automobile parking spaces with 375 reserved residential spaces, 32 guest spaces, and 18 retail spaces. Once brought into compliance with minimum requirements, the Project would also provide 79 secure long-term and 31 short-term bicycle parking spaces for the residential units as well as four secure long-term and two short-term bicycle parking spaces for the retail land uses.

## Project Location

The Project is in Downtown Hayward, a moderately dense urban area with regional commuter rail access, multiple bus routes, and good pedestrian connectivity. The Project has a Walk Score of 93<sup>1</sup>, indicating that most daily errands can be achieved without a car. Consistent with this score, the Project is within walking distance of a variety of neighborhood-serving retail and restaurants. It is within 0.5 miles of the Hayward Bay Area Rapid Transit (BART) station, one mile of the Amtrak station and within 0.4 miles of several Alameda-Contra Costa Transit District (AC Transit) lines:

- 20-minute headway: Line 10
- 30-minute headway: Line 801
- 40-minute headway: Lines 60 and 95
- 60-minute headway: Lines 28 and 93

The Project's proximity to both local and regional transit as well neighborhood amenities is likely to result in relatively high rates of walking, bicycling, and transit use by residents and visitors. This is confirmed in part by the travel patterns of the area's existing residents shown in **Table 1**.

---

<sup>1</sup> <https://www.walkscore.com/score/maple-ct-hayward-ca-94541>

According to the U.S. Census American Community Survey (ACS) nearly one third of Downtown Hayward employed residents commute to work without the use of an automobile, almost twice as high as the non-auto commute mode share for all employed Hayward residents. This is largely due to a much higher transit commute mode share at 23% for Downtown Hayward compared to 9% for Hayward as a whole.

**Table 1: Commute Mode for Employed Residents**

Transportation Mode	Mode Share	
	Downtown Hayward	Hayward City
Automobile	69%	83%
Public Transit	23%	9%
Bicycle	1%	1%
Walking	1%	2%
Work from Home	5%	4%

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates, Census Tract 4034, Table B08006.

## TDM Relevant Project Features

In addition to being in an area that supports alternatives to driving, the Project has multiple land use, parking, and bicycle/pedestrian access features that are likely to reduce vehicle trips compared to existing land uses in Downtown Hayward.

### Land Use

The Project contains a mix of complimentary residential and retail land uses that have been shown to capture trips internally to the site that would otherwise leave the site (e.g. ground floor retail and a gym for proposed project residents). Taking the mix of land uses into account reduces estimated automobile travel by up to 3% for daily trips, 3% for AM peak hour trips, and 5% for PM peak hour trips compared to Institute of Transportation Engineers (ITE) Trip Generation Manual rates discussed in more detail in the *Maple & Main Local Transportation Analysis Report*.

The Project also contains 63 affordable housing units. Affordable housing often generates fewer trips than market-rate housing when easily accessible by transit. Suburban low-income multi-family housing generates about 29 percent fewer trips than suburban market-rate single-family

housing, and about 15 percent fewer trips than suburban market-rate multi-family housing.<sup>2</sup> While the research is limited the affordable housing units could reduce automobile trips by up to 4% compared to unadjusted automobile trip generation for the Project. The affordable housing is likely to be an effective TDM measure.

### **Parking**

The Project minimizes the provision of automobile parking while also including preferential parking for shared vehicles and secure long-term residential and retail bicycle parking as well as short-term bicycle parking for resident guests and retail patrons.

### **Bicycle & Pedestrian Access**

Consistent with the City of Hayward Bicycle and Pedestrian Master Plan, the Project includes the following off-site bicycle infrastructure improvements adjacent the project frontage:

- A Class IV bikeway along Main Street between A Street and McKeever Avenue
- A Class III bikeway along McKeever Avenue between Main Street and City Center Drive. Fehr & Peers recommended in the Project's local transportation assessment that this facility be upgraded to Class II bike lanes.

The Project would also provide pedestrian oriented design by continuous building frontage along the perimeter of the site, ground level retail, and multiple pedestrian access points into the Project's buildings. Furthermore, the Project would limit automobile access to one parking garage driveway on Main Street.

# **TDM Analysis**

## **Conditions of Approval TDM Strategies**

The COA dictated that the Project must provide both a Parking Management Plan (PMP) and a TDM Plan. Though some required measures were included as part of the PMP instead of the TDM

---

<sup>2</sup> Howell, A., Currans, K., Norton, G., & Clifton, K., 2018. Transportation impacts of affordable housing: Informing development review with travel behavior analysis. *Journal of Transport and Land Use*, 11(1). doi:10.5198/jtlu.2018.1129. Available at: <https://www.jtlu.org/index.php/jtlu/article/download/1129/986>

Plan, they would have a quantifiable VTR as part of a TDM Plan. All relevant TDM measures from the COA are listed below:

- A **Parking Management Plan** (PMP) that details how on-site parking will be managed and enforced, including how to minimize off-site parking<sup>3</sup>
- **Unbundled parking**, which requires all on-site parking spaces to be provided separate from the lease rates of rental units and retail uses
- **Preferential parking** for electric vehicles and shared vehicles in the parking garage
- **Shuttle service**, either through contribution toward the funding of the City sponsored shuttle or the provision of a private shuttle with 20- to 30-minute headways on weekdays, and on weekends as demand dictates, which would provide shuttle service to and from the Hayward BART station
- **Discounted transit passes** for residents
- **Shared vehicle program** (e.g., Zipcar), comprised of at least two spaces in the garage
- **Bike rental program** that offers at least five bikes for rent to building residents

In addition to the measures listed above, the COA requires TDM reporting on an annual basis for five years. TDM reporting must provide evidence acceptable to the Public Works Director that identifies how TDM measures have reduced project trip generation by 20% compared to the baseline trip generation included as part of the report titled *2021 Local Transportation Assessment for Maple and Main Mixed-Use Development* prepared for the Project.

## TDM+ Results

Fehr & Peers estimated potential trip reduction benefits of the proposed strategies using Fehr & Peers' proprietary TDM+ tool. This tool was created through research and reporting for the California Air Pollution Control Officer's Association (CAPCOA) and the Bay Area Air Quality Management District. The TDM+ tool was validated and recalibrated based on sites in the Bay Area to verify its reliability in providing real world results. This tool has been adopted by the Bay Area Air Quality Management District as its recommended TDM evaluation tool.

**Table 2** lists all mandatory TDM strategies that apply to the Project, as well as the anticipated effectiveness of each strategy based on research compiled in *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association [CAPCOA], August 2010)

---

<sup>3</sup> *Maple and Main Mixed-Use Development – Parking Management Plan Update, 2021.*

and other available sources. The CAPCOA report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies.

The mandatory strategies in **Table 2** are generally targeted at residents. While some of the mandatory strategies would also affect the travel behavior of residential visitors and commercial employees and customers, these groups are not directly targeted with the TDM programs. The number of commercial employees would be small relative to the total number of residents, and visitors and customers would likely not be aware of TDM programs or visit frequently enough to make them cost effective.

**Table 2: TDM Analysis Results**

TDM Strategy	Description	Estimated Vehicle Trip Reduction <sup>1</sup>
Infrastructure Improvements	Off-site bicycle improvements consistent with Hayward Bicycle Pedestrian Master Plan	N/A <sup>2</sup>
Unbundled Parking	Residents are required to pay for a parking space separately from their monthly rent	<16%
Preferential EV & Carpool Parking	Dedicated parking spaces for EVs and carpool vehicles	N/A <sup>2</sup>
Last Mile Shuttle	Shuttle to Hayward BART with at least 30-minute weekday frequency	<23%
Transit Subsidies	Offer to provide a monthly transit subsidy to residents <sup>3</sup>	2% - 5%
Carshare	Dedicate at least two on-site carshare parking spaces	<1%
Bikeshare	Make at least five bicycles available for rent to residents.	<2%
Pedestrian-Oriented Design	Pedestrian-scale design, with direct access to primary approaches for pedestrian traffic	<3%
<b>Required Measures Trip Reduction Estimates</b>		<b>Low 2%, Mid 15%, High 40%</b>

1. The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012).

2. The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that existing literature does not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.

<sup>3</sup>. Assuming a 50% subsidy available to residents that request it.

Source: Fehr & Peers, 2021

VTR results from **Table 2** range from *Planning Low* to *Planning Ambitious* defined as:

- **Planning Low (Low)** – indicates a conservative estimate, suitable for use in environmental documents. Not all strategies provide a reduction suitable for EIR/EIS use.
- **Planning Moderate (Mid)** – indicates an estimated effectiveness under typical conditions, with standard marketing and enforcement.
- **Planning Ambitious (High)** – indicates a potential upper limit to reductions, and requires a high level of support, marketing, and investment in most cases.

Based on the TDM analysis results, the Project can expect a *Planning Moderate* VTR of about 15 percent, and could reach 20 percent with higher support level. The actual VTR reduction would be confirmed through monitoring described in the *TDM Monitoring* section of this memorandum.

## Additional Operational Strategies

If the mandatory measures do not meet the required goal of 20 percent VTR, the Project shall consider implementing some or all the following additional strategies to reduce automobile trips and encourage non-automotive travel. The *Planning Moderate* reduction estimate is listed for each strategy:

- **Residential Ride-match Program (<1%)** – Assist potential carpoolers in finding other individuals with similar travel routes.
- **Carshare Subsidy (<1%)** - Provide residents with free or discounted carshare membership to offset the cost of car sharing programs and reduce the demand for private vehicle ownership.
- **Transit Subsidy Increase (<2%)** - Increase the transit fare subsidy for Project residents and retail employees.
- **Commute Marketing Program (<3%)** - In the form of in-person assistance or as a web tool, provides residents and retail employees with a customized menu of options for commuting. Trip planning reduces the barriers the residents and employees see to making a walk, bike, or transit trip to the site. Transit trip making tools, such as those available from Google Maps or 511.org, could be promoted to inform residents and employees of transit options to/from work.
- **TNC Partnerships (<3%)** – Provide pooled ridesharing options, ideally as a last-mile connection to transit or as an aspect of an Emergency Ride Home Program.
- **Carpool/Vanpool Incentives (<1%)** – Include monetary assistance for fares, gas cost, or parking costs for carpool or vanpool users.

# TDM Monitoring

The City's COA requires regular periodic evaluation to determine if the program goal of reducing automobile trips has been satisfied and to assess the effectiveness of the implemented strategies. Therefore, Fehr & Peers recommends the following strategy. Beginning the first year after the development and 75% occupancy of the Project, the site management shall prepare an annual TDM monitoring report consisting of the following:

- Summary of implemented TDM measures and their effectiveness (e.g. bicycle parking occupancy, number of transit passes issued, car share use, bike rental use, etc.)
- Results of Project resident and employee transportation surveys to monitor the vehicle trip generation and mode share for the Project residents and employees
- Weekday AM and PM peak period and daily traffic volume counts at the Project garage driveway and the internal gate for the secure residential parking

As previously discussed, the goal of the TDM program is to reduce the number of Project generated vehicle trips, relative to the Project's baseline vehicle trip generation estimates, by 20 percent. Based on ITE trip generation calculations in the *2021 Local Transportation Assessment for Maple and Main Mixed-Use Development* the Project would generate 1,980 unadjusted weekday daily automobile trips, 120 AM peak hour trips, and 165 PM peak hour trips. To be successful the TDM program would need to reduce these trips by 20% to 1,584 daily trips, 96 AM peak hour trips, and 132 PM peak hour trips.

The first monitoring report should be prepared one year after 75% occupancy of the residential component of the Project, and subsequent monitoring reports should be prepared annually for a minimum of five years. This program ensures the implementation of the mandatory TDM measures and related requirements through the COA adopted for the Project.

If deemed necessary, the City may elect to have a peer review consultant, paid for by the Project, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the Project has failed to implement the TDM Plan, the Project will be considered in violation of the COA and the City may initiate enforcement action as provided for in the Project COA. Typically, the Project should not be considered in violation of this COA if the TDM Plan is implemented but the VTR goal is not achieved.



If in two successive years the Project's TDM goals are not satisfied, site management should implement additional TDM measures. If in five successive years the project is found to meet the stated TDM goals, additional surveys and monitoring should be suspended until such time as the City deems they are needed.