Technical Memorandum

Date: May 01, 2018

To: Dan Weissman
Email: dweissman@gmail.com

Jurisdiction: Marin County

From: Janice Spuller
Project Manager, TJKM
Praveena Samaleti
Project Engineer, TJKM

Subject: Traffic Impact Study for Residential Development located at 455 Panoramic Highway, Marin County, California

The purpose of this technical memorandum is to prepare a focused traffic impact analysis for the proposed Residential Development, which is located at 455 Panoramic Highway, in the unincorporated part of Mill Valley, Marin County, California. The proposed project is to comply with the Marin County permit application requirements. The proposed project consists of one existing dwelling unit and two additional units. The total units on the property is three. Access to the project site would be provided via one full-access driveway on Panoramic Highway. The project is located near the historic Muir Woods, and north of Highway 1. Currently, there is one home on the site. The project site is mostly a vacant lot with one existing residential unit. Figure 1 shows the project site plan.

Existing Conditions

Important roadways adjacent to the project site are discussed below:

State Route 1 (SR-1), also known as the Shoreline Highway is a major north-south state highway that runs along most of the Pacific coastline of California. SR-1, is located south of the project area, and intersects with the southern end of Panoramic Highway. It should be noted that a stretch of Highway 1 between Muir Beach and Stinson Beach closed due to mudslides. Hence, all Highway 1 traffic to Stinson is routed through Panoramic Highway. This route will open in fall 2018.

Panoramic Highway (SR-29) is a north-south, two-lane undivided roadway that connects SR-1 to Stinson Beach. The posted speed limit along Panoramic Highway is 30 miles per hour (mph) within the project vicinity.

Brighton Boulevard is an east-west, two lane undivided roadway that traverses between Panoramic Highway and Fern Lane. The posted speed limit is 25 mph within the project vicinity.
Muir Woods Road is an east-west, two-lane roadway that traverses between Panoramic Highway to State Route 1, where it becomes the Shoreline Highway. This roadway connects to the Muir Woods National Monument and Muir Beach. The speed limit is 25 mph.

PROJECT DESCRIPTION AND TRIP GENERATION

The proposed project is located at a predominantly vacant parcel in unincorporated Marin County near the City of Mill Valley. The area is mainly residential developments located east of the project site. The northern driveway access of the project is at 455 Panoramic Highway which currently has one residential unit on the parcel. The proposed project will add two residential units to this parcel, for a total of three units.

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the Institute of Transportation Engineer’s (ITE) publication Trip Generation (9th Edition). TJKM used published trip rates for Single Family Residential (ITE Land use Code 210). Table 1 shows the trip generation for the proposed project.

Using ITE rates, the project is expected to generate approximately 3 p.m. trips (2 inbound and 1 outbound) during the p.m. peak hour.

Table 1: Proposed Project Trip Generation

<table>
<thead>
<tr>
<th>Land Use (ITE Code)</th>
<th>Size</th>
<th>Daily</th>
<th>P.M. Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rate</td>
<td>Trips</td>
</tr>
<tr>
<td>Single Family</td>
<td>1 Unit</td>
<td>9.52</td>
<td>10</td>
</tr>
<tr>
<td>Residential (210)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family</td>
<td>2 Unit</td>
<td>9.52</td>
<td>19</td>
</tr>
<tr>
<td>Residential (210)-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trips</td>
<td></td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Source- Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition, 2012. ksf=thousand square feet

Due to the minimal increase in peak hour trips, level of service analysis was not necessary for the nearby intersections.
SITE ACCESS AND ON-SITE CIRCULATION

TJKM reviewed site access and internal circulation for vehicles, pedestrians and bicycles based on the site plan. TJKM reviewed internal and external access for the project site for passenger vehicles, trucks, pedestrians, and bicycles.

TJKM reviewed the proposed project site plan, dated November 03, 2017, to evaluate access to the project. The proposed project has one full access driveway on Panoramic Highway, 280 ft from the Brighton Boulevard towards North which serves for three residential units.

Driveway Width: As per the Caltrans Manual (Section 205.3), the width of a double residential driveway such as used for multiple dwellings should be 20 feet minimum and 30 feet maximum. As per the Marin County Uniform Construction Standards, approach width should be 24 feet minimum for High volume driveway. However, the proposed driveway is 28 feet wide, and meets the Caltrans & County standards for minor residential roadways. The minimum driveway centerline radius of 40 feet is provided. All the details are shown in Figure 2.

Turning Design: As per the Marin County Standards, radius of 30 feet to 40 feet was provided, which will be sufficient for turning all types of vehicles including trucks at the proposed driveway. All the details are shown in Figure 3.

Access Openings: As per the Caltrans Manual (Section 205.1), Recessed access openings are desirable at all points where private access is permitted and should be provided. The opening should be located a minimum distance of 75 feet from the nearest edge of the traveled way. However, access opening, radius and taper at the proposed driveway is provided as per the standards. All the details are shown in Figure 4.

Driveway Turnouts: As per the Marin County Fire Department Land Development Standards, Turnouts are provided on the proposed driveway, with a paved traveled way of 20 feet wide, cross slope of 8% in order to serve Parcel 2 and 3. All the details are shown in Figure 4.

Access Control: Stop Control Sign is proposed at unsignalized intersection driveway with Panoramic Highway, with appropriate pavement delineation and signing to enhance traffic safety and operations on the roadways.

SIGHT DISTANCE ANALYSIS

Sight distance was evaluated to determine if drivers will have adequate visibility to enter a roadway safely without resulting in a conflict with traffic already on the roadway. The distance between Brighton Boulevard and Project driveway is approximately 270 feet. The speed limit on Panoramic Highway is 30 mph. According to the Caltrans Highway Design Manual (HDM), Chapter 200, 2014, the required minimum stopping sight distance for a design speed of 30 mph is 200 feet. The lines of sight for vehicles exiting the driveways and vehicles travelling northbound/southbound on Panoramic Highway are clear and visible.

As per the site plan, the line of sight from the center of driveway towards north and south direction is 205 feet. Per the American Association of State Highway and Transportation Officials
(AASHTO) Geometric Design of Highways and Streets, 2004, the recommended “stopping sight distance” is 200 feet with a roadway at 30 mph. Therefore, the findings indicate the visibility is adequate. In addition, there are no sidewalks and limited opportunities for on-street parking on Panoramic Highway on the west side of the road, so parked vehicles would not impede the line of sight.

CONCLUSIONS

The development of the residential project, as proposed, would not result in a significant traffic impacts under Marin County, Caltrans, Marin County Fire Department Standards guidelines.
Figure 205.1
Access Openings on Expressways

Caltrans Highway Design Manual - Table 204.1
Sight Distance Standards for 100' Roadway as Shown

Note:

1. The values in the table are for 100' roadways. For other
2. Roadway lengths, the values should be adjusted proportionally.

---

Source: Ziegler Civil Engineering

Figure 4