

Memorandum

Reference: 509051 JH Ranch
Date: March 30, 2012
To: Rob Hayes-St. Claire
From: Brian Freeman, P.E., T.E.
Subject: Additional Discussions Regarding French Creek Level of Service
Traffic Volumes

This memorandum has been prepared to provide you with additional discussions about the Level of Service (LOS) calculations for French Creek Road, and how our earlier traffic volume study data relates to this system.

Review of Previous Study Data

As noted in our earlier traffic volume studies (8/30/2010, and Revised 8/10/2011), Average Daily Traffic (ADT) and Peak Hour Volume (PHV) were determined. As previously documented, the French Creek ADT is 439 vehicles with a PHV of 104 vehicles during weekdays (morning traffic), which is the highest and most conservative value measured for PHV in the study.

As noted in our study, the Level of Service (LOS) for French Creek Road has been calculated using information from the Siskiyou County General Plan Circulation Element, which shows a "service volume" (the volume of traffic that the roadway can accommodate) for LOS A to be 1,408 ADT or 169 vehicles per hour. Review of the data findings in our report show that current ADT on French Creek road is approximately 3 times lower, than the calculated maximum volume for LOS A. Additionally, the hourly traffic volume (defined as the peak hour, or PHV for this analysis) calculated from the Circulation Element method is 169 vehicles per hour. When compared to the PHV in our study, current PHV is approximately 40% lower than the LOS A vehicle per hour numbers indicated by the County.

Additionally, the Circulation Element notes (page 26, Circulation Element, Improvement Program Review) that on roads where current uses meet or exceed service volume C (LOS C), no zone change substantially increasing use or other developments will be allowed until roads have been improved to handle the future anticipated uses. As such, uses on French Creek Road currently meet the LOS A criteria, and increased traffic volumes would not trigger improvements until they reached the LOS C standards. LOS C volumes are calculated in the following section.

LOS C Calculations

Using information previously collected, a review of data was undertaken to approximate the potential LOS C volume of traffic, in "vehicles per hour" in an effort to show comparisons to the data collected and potential future roadway conditions where improvements would be required by the County's Circulation Element. For this exercise, we have assumed that based on actual conditions on French Creek Road, the entire roadway length (100%) is considered a "no-passing zone" which provides the most restrictive assumptions for calculations. Using this assumption we have utilized data with various factors (percentages of roadway capacity) for roadway terrain. Those are Flat (0.32), Rolling (0.28) and Mountainous (0.16). Those factors are applied to the ideal capacity for the roadway based on the Highway Capacity Manual which is 1,800 vehicles per hour.

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Using the above factors the following data was calculated to determine the LOS C vehicle per hour volumes:

Flat: $0.32 \times 1,800 = 576$ vehicles per hour

Rolling: $0.28 \times 1,800 = 504$ vehicles per hour

Mountainous: $0.16 \times 1,800 = 288$ vehicles per hour

It is our opinion that the portion of French Creek Road under review in this study is a “rolling” terrain segment, and would have a LOS C vehicle per hour volume of 504 vehicles. This is 400 vehicles per hour more than the current measurements of 104 vehicles per hour measured in the peak weekday hour (PHV).

Additionally, we received traffic accident information from the County for French Creek Road and found that there were only 11 reported accidents in about a 40 year time span. This number was so low that it did not change any roadway assumptions in our calculations.

Conclusions

Based on the review of the information above, and discussions about LOS conditions (current and potential future) for French Creek Road, our conclusions from our earlier studies have not changed.

Existing traffic volumes on French Creek Road (measures in both ADT and PHV) are within the LOS A standards for the roadway. Increases in traffic volumes (from both JH Ranch and other non-JH Ranch development and uses) that may occur in the future would need to generate upwards of 504 **vehicles per hour**, to reach the LOS C threshold at which roadway improvements would be required. Using this value (504 vehicles per hour), the estimated ADT at that time would be in the range of 2,500 to 3,300 vehicles per day, an increase in volume of over 5.6 times the current ADT. Even if an extremely conservative approach was taken and the 288 vehicle per hour value was used, this would still be more than double the current traffic volumes and over 4 times the current ADT. From this data, traffic volumes from JH Ranch activities alone, would need to increase significantly to trigger LOS threshold changes.

The other issue is how traffic relates to occupancy and use of the JH Ranch site. As we have discussed with both JH Ranch and the County, increases in occupancy of the JH Ranch has no “direct correlation” with traffic. Since JH Ranch uses a combination of personal vehicles and vans/buses to transport guest to the Ranch, occupancy levels could easily increase without an impact to the LOS designations for French Creek Road. While individuals may notice an increase in traffic, the volumes would not necessarily be in excess of any regulatory limits that would require improvements to the roadway by JH Ranch. It is conceivable that several thousand people could occupy and use JH Ranch without significant increases in traffic on French Creek Road.