

April 17, 2024

Zachary Ormsby, Field Manager
Bureau of Land Management
Central Coast Field Office
940 2nd Ave., Marina, CA
93933-6009

Subject: **Sight Distance Sufficiency for Intersection with Cement Plant Road
of Proposed Access Road for Knoll Parking for Cotoni-Coast Dairies**

Dear Field Manager Ormsby:

I am a California registered Traffic Engineer and licensed Civil Engineer, in private practice for over 45 years in the local area. In my practice I provide expert consultation as well as litigation support and expert testimony. Before entering private practice I was employed as an Association of Monterey Bay Area Governments Regional Traffic/Transportation Engineer. In private practice I have also worked as a Consulting City Traffic Engineer for the City of Saratoga. A key component of my traffic engineering work on behalf of municipalities has been to ensure adequate safety design.

At the request of Friends of the North Coast, I have been requested to provide an analysis of the sight distance sufficiency for the community-preferred access for knoll parking where such access intersects with Cement Plant Road. BLM's 3/19/2024 Environmental Assessment (EA) for the Northern Parking and Trailhead project states "the location of the driveway for the lower parking area would have insufficient line of sight distance for traffic coming from the left (northbound on Cement Plant Road)." This statement is based on the 12/20/2023 "Updated Focused Traffic Study for the Cotoni-Coast Dairies Project" prepared for BLM by Traffic Engineers employed by W-Trans. I understand this location to be approximately 500 feet north of the Warrenella Road intersection with Cement Plant Road. It is my understanding that in their calculation of the sight distance the exact location of the driveway was not defined.

I have reviewed the Updated Focused Traffic Study for the Cotoni-Coast Dairies Project prepared for BLM by W-Trans, as well as the FINAL Traffic Study for the Cotoni-Coast Dairies Project, W-Trans, July 2020. My conclusion and supporting explanations follow.

Regulatory and Policy Context

Cement Plant Road north of Davenport is a local minor street which is a County-maintained road or right-of-way under the jurisdiction of the County of Santa Cruz. Pursuant to County Code §9.70.380(B):

all encroachment work performed on any County-maintained road or right-of-way under the jurisdiction of the County shall conform to the County of Santa Cruz Design Criteria, and to the construction specifications contained in the current edition of the Standard Specifications of the State of California, issued by the State Department of Transportation, as may be amended by special provisions adopted by the Board of Supervisors.

In order to analyze sufficiency of sight distance for BLM driveways intersecting Cement Plant Road, W-Trans states that it utilized the *Highway Design Manual* published by Caltrans in both its FINAL Traffic Study of July 2020 and the 12/20/2023 Updated Focused Traffic Study. W-Trans explains at page 8 of its FINAL Traffic Study of July 2020 that “recommended sight distances for minor street approaches that are either a private street or a driveway are based on stopping sight distance.” W-Trans goes on to explain that “approach travel speeds” are used “as the basis for determining the recommended sight distances” and follows that with a Table labeled “Intersection Sight Distance Criteria,” specifying the “Source” as “*Highway Design Manual*, 6th Edition [Caltrans].” The left-most column is titled “Speed” and the right-most column is titled “Private Road and Rural Driveway Stopping Sight Distance.” These columns are clearly taken from Table 201.1 of the Caltrans *Highway Design Manual* titled “Sight Distance Standards.” Under that Table the sight distance for a design speed of 25 MPH shows 150 feet, for 20 MPH 125 feet, and for 15 MPH 100 feet.

W-Trans then applies these “Intersection Sight Distance Criteria” to the “Warrenella Road – Gate parking area” which is described as “accessed from Cement Plant Road north of Cement Plant Road/Warrenella Road,” For the “Speed” column W-Trans uses a “more conservative” speed of 25 MPH (even though acknowledging most drivers would be comfortable only at 15-20 MPH) and applies that speed to the “Private Road and Rural Driveway Stopping Distance Column” to conclude that “the sight distance required is 150 feet.”

Sight Distance for Access Driveway Approximately 500 feet North of Warrenella Road

Factual Context

Among the Alternatives which W-Trans reviewed as part of its 12/20/2023 Updated Focused Traffic Study was an Alternative 3 which was eliminated in the 3/19/2024 EA. Alternative 3 includes an additional egress only driveway on Cement Plant Road 500 feet north of Warrenella Road similar to that of the Community-Preferred Alternative driveway for ingress and egress. As defined by BLM, Alternative 3:

includes a parking lot with 76 spaces, an ingress driveway on Warrenella Road 100 feet east of Cement Plant Road, and an egress driveway on Cement Plant Road 100 feet north of Warrenella Road, and an ***additional egress driveway on Cement Plant Road 500 feet north of Warrenella Road.***

This latter highlighted location is the only intersection in a location similar to the Community’s most recent proposed Alternative ingress and egress driveway. Assuming that this is approximately the location of the existing metal gate approximately 500 feet north of Warrenella Road, the **Community’s most recent proposed Alternative** is the one set forth in DNCA Board member John Barnes’ October 30, 2023 email to Field Manager Ormsby. But it **would include both ingress and egress at this point.** In

other words, it would provide a two-way access driveway only (no lower level parking area) around the inland side of the knoll and up the draw to the 68-space knoll-top Parking Lot shown in Alternative 1.¹

At page 25 the 3/19/2024 EA says: “the location of the driveway for the lower parking area would have insufficient line of sight distance for traffic coming from the left (northbound on Cement Plant Road).” I understand this location to be approximately 500 feet north of the Warrenella Road intersection with Cement Plant Road. It is my understanding that in their calculation of the sight distance the location of the driveway was not precisely defined. I note that BLM’s 2020 Final Traffic Study concluded on pages 8-9 that at Warrenella Gate a sight distance of 150 feet was needed for a parking access road to intersect along this stretch of Cement Plant Road using a “more conservative” speed of 25 MPH (even though acknowledging most drivers would be comfortable only at 15-20 MPH). However, the Updated Focused Traffic Study, again using 25 MPH as the design speed “to be conservative,” determined that “the recommended corner sight distance is 240 feet for right turn movements² out of rural driveways.” W-Trans has not stated the Table or Figure of the *Highway Design Manual* they are referring to.

W-Trans states that since the sight distance is only 190 feet at this location, it is “insufficient.” W-Trans reaches this conclusion even though stating at page 3 that “during a field visit in October 2023, six drivers were observed traveling at an average speed of 12 mph, with all traveling under 20 mph”).

In my analysis, I also considered the evidence provided to me by Bob Berlage following directions given by me, as confirmed by me through photographs. Mr. Berlage was assisted by an assistant using the assistant’s vehicle. Mr. Berlage is knowledgeable and experienced in using a laser range finder which he applied to this situation. He found a sight distance of 195 feet from the Community’s proposed intersection with Cement Plant Road. This reasonably agrees with the sight distance previously determined by W-Trans of 190 feet.

With my decades of experience writing sight distance reports for the County of Santa Cruz, I have only used 15-20 MPH for my sight distance design speeds as to the many roads I evaluated for sufficiency of sight distance similar to Cement Plant Road. This was done pursuant to the County Design Criteria as to sight distance for driveways which provides as follows: “Adequate sight distance shall be provided based on the design speed of the road.³” In my opinion utilization of a design speed of 15 MPH or 20 MPH is highly appropriate under the facts stated by W-Trans and the circumstances at hand.

While W-Trans didn’t provide any reference source for their recommendation of a 240 foot sight distance requirement using a design speed of 25 MPH, this Traffic Engineer believes that they are referencing a source different than the Caltrans *Highway Design Manual*. Indeed, the AASHTO⁴ *Policy on Geometric Design of Highways and Streets* (2018 -7th Edition) is a standard road design policy

¹ No parking is proposed at this time on the level below the knoll.

² W-Trans notes that all proposed egress movements from the driveways in each alternative would be restricted to right-turn only; left-turns would be prohibited in order to guide traffic towards SR-1 and away from the residential areas to the south on Cement Plant Road.

³ Sight distances less than 250 ft for minor local streets required a traffic engineering report.

⁴American Association of State Highway and Transportation Officials

throughout the United States, which at p.9-48 contains the below summarized Table 9.9 for Case B2—Right Turn from the Minor Road (Section 9.5.3.2.2)

Table 9-9. Design Intersection Sight Distance—Case B2, Right Turn from Stop

Design Speed (mph)	Intersection Sight Distance for Passenger Cars (Calculated) (ft)	Intersection Sight Distance for Passenger Cars (Design) (ft)
15	143.3	145
20	191.1	195
25	238.9	240

As can be seen, this policy uses 240 feet as a sight distance for a design speed of 25 MPH. Using his laser range finder Mr. Berlage determined the sight distance in question to be 195 feet. Thus, even under this non-*Highway Design Manual* policy, the Community's Alternative satisfies sight distance guidelines at speeds of 20 MPH or 15 MPH, both of which are consistent with W-Trans finding that "during a field visit in October 2023, six drivers were observed traveling at an average speed of 12 mph, with all traveling under 20 mph."

CONCLUSION

In accordance with the analysis above, using design speeds of 15 - 20 MPH, and even in the very unlikely situation that a vehicle were proceeding at 25 MPH, there would be adequate sight distance under the *Caltrans Highway Design Manual*. My conclusion is that there is clearly sufficient sight distance for northbound traffic as to both ingress and right turn only egress as to that driveway. Thank you for your consideration of this analysis.


James C. Jeffery III, P.E., PTOE

Cc: Friends of the North Coast