
Keith Higgins

Traffic Engineer

December 8, 2021

Brian Hannegan
RRM Design Group
32332 Camino Capistrano, Suite 205
San Juan Capistrano, CA 92675

Re: Cotoni-Coast Dairies National Monument – Yellow Bank Access Evaluation, Santa Cruz County, California

Dear Brian:

Per your request, this is a preliminary traffic assessment of the schematic plan you prepared dated October 20, 2021, of the proposed Yellow Bank parking lot intersection with Highway 1 (Proposed Driveway Intersection) across from the Santa Cruz Regional Transportation Commission (SCCRTC) Panther Beach parking lot entry intersection with Highway 1. The schematic plan, which does not provide dimensions, is included herein as **Attachment 1**. The Yellow Bank parking lot is being considered by the Bureau of Land Management (BLM) and Trust for Public Land (TPL) as a new option to serve the Cotoni-Coast Dairies National Monument in northern Santa Cruz County, California. It will likely include a pedestrian /bicycle bridge over Highway 1 that will provide pedestrian and bicycle access to Panther Beach and the Monterey Bay Sanctuary Scenic Bike Trail (Scenic Trail).

As you described in your email to me dated 8/23/21, Caltrans has indicated that this alternative is viable assuming the following issues can be addressed.

- (1) a location acceptable to Caltrans;
- (2) a design to Caltrans standards;
- (3) environmental clearance;
- (4) adequate sight distance;
- (5) built with channelization for the ingress and egress movements; and
- (6) stormwater data to ensure no additional flow is conveyed to the State system.

The above are standard encroachment permit conditions. In my brief discussion with John Olejnik, Caltrans Senior Transportation Planner, an additional item that will need to be verified is that there are access rights from the Yellow Bank site onto Caltrans right of way. As you mentioned in your 8/23/21 email, this evaluation only addresses Items 1, 2, 4 and 5 in a preliminary manner. This letter represents my opinion based on my experience working with Caltrans on other projects and compliance with basic

Caltrans Highway Design Manual (HDM) standards and guidelines. I cannot guarantee that Caltrans will agree with my recommendations due to new policies, more conservative interpretations of the HDM or other Caltrans policies and standards in order to provide for horse trailers, environmental considerations, Coastal Commission issues regarding new access points and associated visual impacts.

1. Driveway Location (Caltrans Item 1)

The proposed Yellow Bank parking lot driveway (Proposed Driveway) is proposed to be directly across Highway 1 from the proposed location of the entrance to the Panther Beach parking lot that will be constructed as a part of the Monterey Bay Sanctuary Scenic Bike Trail. This is also the approximate location of the driveways serving the existing unimproved Panther Beach parking lot. The Proposed Driveway would represent the fourth leg of the proposed intersection. To my knowledge, there is no formal restriction to driveway access at this location. The topography in the vicinity of the Proposed Driveway on the inland side of Highway 1 at this location is hilly but the slopes appear to be gradual enough to accommodate an entrance road to the parking lot such that acceptable horizontal and vertical entrance road alignments can be provided. The proposed driveway location should be acceptable to Caltrans subject to non-traffic considerations such as drainage, storm water quality, habitat conservation and endangered species, etc. The California Coastal Commission may have non-traffic issues as well.

2. Sight Distance (Caltrans Item 4)

- a. Sight distance looking south: The proposed driveway intersection location is near the north end of a crest vertical curve that limits sight distance to the south (left) for vehicles that would be exiting the proposed driveway location. A site visit was conducted on Sunday, August 28, 2021, to verify sight distance and field conditions in the Proposed Driveway vicinity. A total of 6 time gap readings were taken, with northbound vehicles approaching from the south visible for between 10.1 seconds and 13.1 seconds as they approached the approximate location of the Proposed Driveway. These exceed the requirement of 9.5 seconds per HDM Table 405.1A – "Corner Sight Distance Time Gap (Tg) for Unsignalized Intersections" to accommodate single unit trucks. This is greater than the typical requirement of 7.5 seconds to accommodate passenger cars but is the recommended criteria to provide for trucks with horse trailers, which would utilize this driveway. Adequate sight distance is provided to the south.
- b. Sight distance looking north: The Proposed Driveway is located about one-fourth mile south of Bonny Doon Road. There is a large radius horizontal curve between Bonny Doon Road and Proposed Driveway location. This does not appear to limit sight distance to the north to observe southbound traffic on Highway 1 approaching the Proposed Driveway Intersection. Adequate sight distance is provided to the north.
- c. The sight lines will be measured from a point 15 feet clear of the southbound travel way, which is the shoulder stripe. The embankment along the east side of Highway 1 in the vicinity of the Project Driveway will need to be designed to avoid encroaching into the sight line. This will need to consider future vegetation in the vicinity of the intersection.

3. Intersection Geometrics (Caltrans Items 2 and 5)

- a. Left turn Deceleration Lane - No left turn channelization is currently provided at the existing Panther Beach parking lot driveway. A northbound left turn lane is proposed to be provided at the Panther Beach parking lot as a part of the Scenic Trail. A southbound left turn lane would be required as shown on Attachment 1. This will need to accommodate a minimum of two vehicles of storage, which would include one passenger car and one passenger car/pickup truck with a trailer. It will also need to accommodate deceleration. The posted speed limit is 55 miles per hour which indicates a design speed of about 60 miles per hour. Caltrans may allow 10 to 20 miles per hour of deceleration in the through lane, with about 40 to 50 miles per hour of deceleration in the left turn lane. Transitions from the existing centerline stripe to the left turn lane median width at the design speed of 60 miles per hour needs to be accommodated as well. The basic layout alternatives are indicated in HDM Chapter 400 – Figure 405.2A through C. These result in substantially different improvement lengths with varying construction costs and environmental effects. Some of the design criteria has likely been established during the design of the Panther Beach left turn lane. Caltrans should be consulted prior to proceeding into detailed channelization design. The California Coastal Commission may also have approval authority and is essential to be included early in the design process.
- b. Left Turn Acceleration Lane – A Left turn median acceleration lane (MAL) is apparently not being proposed for the Panther Beach left turn lane improvement. This component of the intersection would be similar to the MAL provided for eastbound left turns exiting the Wilder Ranch driveway. It does not appear that a MAL will be warranted based on level of service, which would be associated with unacceptable delay for left turns exiting the Proposed Driveway. This feature will need to be evaluated in consultation with Caltrans. It would add 12 feet more to the pavement width and much longer approach tapers with the associated impacts on habitat and construction costs.
- c. Right Turn Deceleration Lane – The northbound right turn volumes to enter the Proposed Driveway will be low and probably will not warrant full right turn deceleration lanes. If required, the deceleration lane would have a similar length to the left turn lane, although there would not be a vehicle storage requirement because right turns would be able to enter the Proposed Driveway without yielding to any conflicting traffic movement. At a minimum, a right turn deceleration flare will be required, conforming with HDM Figure 205.1, “Access Openings on Expressways.”
- d. Right Turn Acceleration Lane – A right turn lane is unlikely to be required due to the low volume delay anticipated of this movement. However, a right turn acceleration flare will be required conforming with HDM Figure 205.1, “Access Openings on Expressways.”
- e. Bike Lane - A bike lane may be required between the right turn lane and northbound travel lane. However, the shoulder width along Highway 1 is as narrow as 3 feet, which is not

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adequate to provide a bike lane elsewhere along Highway 1. In addition, the Scenic Trail will provide a facility for bikes that would remove them from the high speed roadway in this area. This element of the design will need to be verified with Caltrans early in the design process.

- f. Entrance Road Alignment – The entrance horizontal alignment will need to accommodate cars and pickup trucks with horse trailers.

Based on the site visit, the entire Proposed Driveway Intersection channelization and sight distance provisions will be able to be physically accommodated at the proposed location. Caltrans will require much more detailed analysis of sight distance, traffic volumes, traffic operations, crash history as well as improvement plans showing horizontal and vertical alignment and supporting environmental, geotechnical, hydrology and other documents.

If you have any questions, please do not hesitate to contact me at your convenience. Thank you for the opportunity to assist you.

Respectfully submitted,



Keith B. Higgins, PE, TE
Attachments

Attachment 1
Highway 1 / Yellow Bank Trailhead Entrance
Intersection Channelization
Schematic Plan



77 Parking Spaces
3 ADA Parking Spaces
5 Horse Trailer Parking

LEGEND

COTONI-COAST DAIRIES TRAIL

ACCESSIBLE TRAIL (Pedestrians Only)

COTONI-COAST DAIRIES TRAIL

EQUESTRIAN PATH

MONTEREY BAY SANCTUARY

SCEINIC TRAIL

AGRICUTURAL FENCE

CATTLE BARRIER GATE ACCESS

BIOSWALE AND SITE DRAINAGE

Cotoni-Coast Dairies Recreational Management Zone #3

rrm

design group

314555 - Figure 21, Site 103 • San Luis Obispo, CA 93401
www.rmdesign.com
a California corporation • Jerry Ouch, Architect C26791 • Jerry McNeal, PE S4875, LS 5274 • Jeff Fisher, LA 2844

NORTH

0

100'

200'

400'

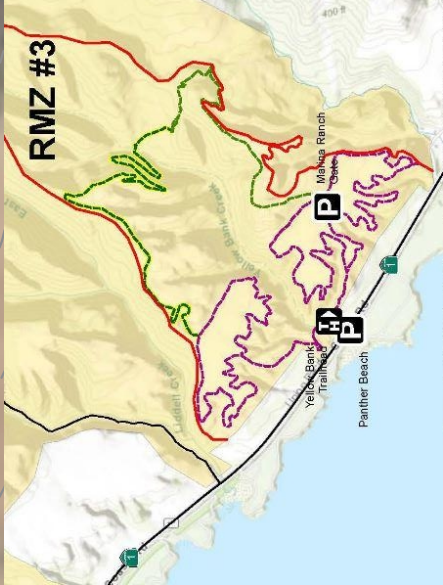
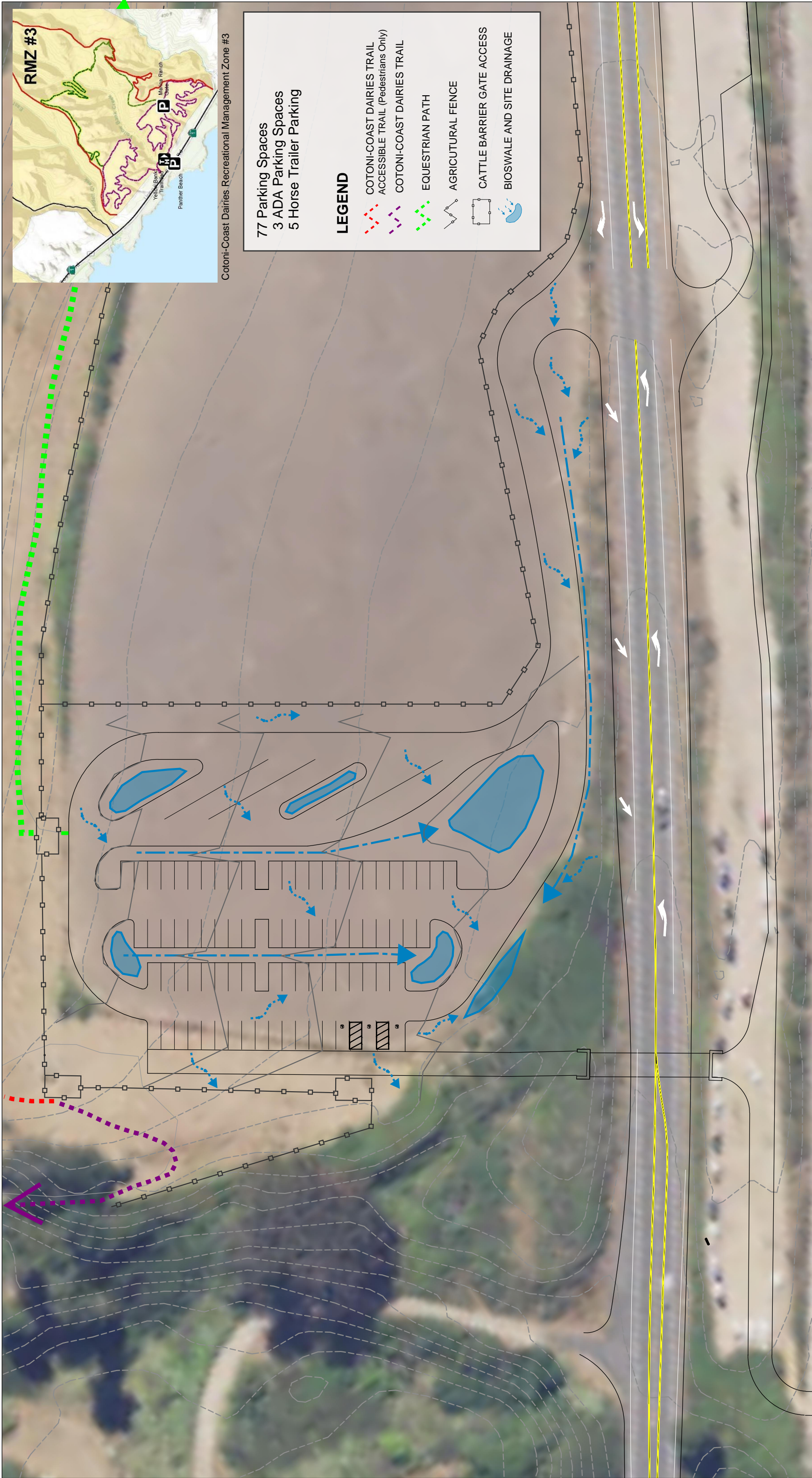
SCALE: 1" = 100'

Trust For Public Land - Preliminary Draft

Cotoni-Coast Dairies Trailhead Feasibility Refinements

YELLOW BANK TRAILHEAD

October 20, 2021



Cotoni-Coast Dairies Recreational Management Zone #3

77 Parking Spaces
3 ADA Parking Spaces
5 Horse Trailer Parking

LEGEND

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