pbscommissions - Re: CDP_2019-0034 Caltrans Permit to restore the storm drain crossing Highway One to the Original location.

From: "Glickfeld, Madelyn" <madelyn.glickfeld@ioes.ucla.edu>
To: "pbscommissions@mendocinocounty.org" <pbscommissions@mendocinocounty.org>
Date: 11/15/2021 12:31 PM
Subject: Re: CDP_2019-0034 Caltrans Permit to restore the storm drain crossing Highway One to the Original location.
Cc: "frank.demling@dot.ca.gov" <frank.demling@dot.ca.gov>, Mark Gold <Mark.G...
Attachments: Glickfeld Letter to County on CALTRANS PRoject Albion with attachments_.pdf

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To: JULIA KROG & SCOTT PERKINS (staff planners for this permit) and the Coastal Permit Administrator:

I am the property owner at 28907 Highway One. I am testifying in favor of the project with additional conditions. The permit is for the drainage abutting my property. CALTRANS has asked me to provide a temporary easement for this project. I have done so based on the characteristics of this project and oppose changing any essential characteristic.
I am submitting my written testimony on this project here and in the attached letter to the Coastal Plan Administrator. Please give my letter to the Coastal Permit Administrator to review, and please review it yourself. After I wrote this letter, I also found that an staff addendum with all of the conditions that have been proposed for this project. As the property owner directly impacted by this project, I should have had the time to review this earlier. I had assumed that you were approving the project as submitted. Now I have the document with all of the conditions. I have given it a review and it does not contain the conditions that I am requesting.

I have submitted a request to speak to this permit. I am in favor of the project with additional conditions to add to your list of conditions detailed in my letter. I request that I be given 10 minutes to testify.

This project is supposed to resolve problems that CALTRANS caused in 1998 which have only gotten worse over time, and I am concerned that the existing permit conditions are not sufficient to insure that CALTRANS does what the plans show.

Specifically I see that the Staff has not addressed the bench cut in the slope that is provided for the Coastal Trail, which is as high priority as the ESHA resources that need to be restored here. I document the damage that CALTRANS caused since 1998 that is the reason why this this project is required. They so widened the creek through erosion that there was no feasible way to bridge the creek for the Coastal Trail. The Mendocino Land Trust tried to implement this project and was not able to because of this widening. I asked that CALTRANS provide for a bench row below and separate from Highway One for the Coastal Trail to cross Navarro Creek. I have also asked that they provide right of way below the road to the Coastal Conservancy and/or the Mendocino Land Trust so that they can connect the trail to the Navarro Headlands.

Mr. Demling informed me last week that they don't have enough money for the bench in their budget and might have to drop it . I oppose this is the strongest possible terms. There is no feasible alternative to routing the Coastal Trail.

The damage that CALTRANS caused since 1998 (documented in my letter) has widened and deepened the creek as well as allowing for endangered species to invade. This bench is the only way that the Coastal Trail can be completed in this stretch of the coast.

At the end of last week, Mr. Demling told me that he would be requesting the full budget for the project, including the bench. While I am sure that he will make these efforts, CALTRANS has not made any budget available for previously proposed projects for over twenty years. I would like the Coastal Permit Administrator to *include this bench in the road slope for the trail as an essential feature that must be a part of any project constructed.*

Do you have a map of all of the trees that they propose to eliminate? I have no problem with removing non-native trees except when they provide raptor habitat. I also hope that they will not be removing any cypresses on my property that screen off my neighbor's property to the south(not coastal views).

These comments are additional to the Comments that I include in the attached letter. Please inform me as to whether I will be given the ten minutes that I have requested.

Madelyn Glickfeld
Owner, 2050 Highway One, Albion, CA
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madelynglickfeld@verizon.net

Madelyn and Bruce Glickfeld
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November 14, 2021

Mendocino County Coastal Permit Administrator
Department of Planning and Building Services
120 West Fir Street
Fort Bragg, California 95437

Re: CASE#: CDP_2019-0034
DATE FILED 8/30/2019
OWNER/APPLICANT: CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)
AGENT: FRANK DEMLING

I am writing to support approval of the proposed Navarro Creek restoration project subject to some conditions I list below. My husband and I own the property at 2050 North Highway One. The eastern edge of our property which abuts Caltrans' right of way for the highway. The southern boundary of our property is the Navarro Creek Drainage.

In December 1998, the El Nino Storms hit Mendocino County coastline hard. The Navarro Creek drain under Highway One was compromised. CALTRANS sought and received an emergency permit from the California Coastal Commission to install a new storm drain. They reported it was too dangerous to repair the drain in place. They requested an emergency permit to angle the storm drain away from the natural alignment to the northwest, allow it to daylight on the slope and make a 90 degree turn back to the creek adjoining our property. This was the beginning of major damage to the creek hydrology, its stability and the ESHA west of Highway One. It has threatened d our property for 23 years. I attach some pictures in Exhibit A to this letter taken in 2004 and 2008 to show some of the widening, deepening, rock abutment migration and erosion over time.

In 2004, concerned by the continuing damage, I commissioned a study by Hydrologist Terry Barber and her report is attached in Exhibit B. She documented the damage caused by the relocated storm drain at that time and recommended that the storm drain be realigned back to flow directly into the creek west of the Highway.

It took until 2008 for me to attract the interest of CalTrans personnel in the Eureka Office. However, in 2008, they did a restoration plan, collaborating extensively with me, the Coastal Conservancy and the Mendocino Land Trust. The reason for the Conservancy and Trust involvement was their desire to construct the coastal trail and connect it from a Coastal Conservancy property north of ours to the publically owned Navarro Headlands to the south. When CALTRANS submitted the restoration plan, the budget was denied and all efforts to restore the creek drainage stopped. The damage has continued since that time. The long planned extension of the Coastal Trail by the Mendocino Land Trust was abandoned in 2008 because CALTRANS would not pay for a restoration plan and the creek was then too wide to allow the Trust to bridge it.

Now, stabilization of the creek and road embankment is needed for the. CALTRANS road-widening project also before the County for permit. CALTRANS staff has been working with us again, since 2017, to restore the considerable damage to the creek. They need a permanent and a temporary easement from us and have worked for four years on restoration plans that we could agree to.

My husband and I care greatly about the special habitat on this property and the need for coastal access through the Coastal Trail. I wanted a full restoration with a green infrastructure drainage plan. I wanted the drain buried below the road abutment slope. I wanted them to bridge the creek. They proposed an 8-foot bench on the road slope instead of the more expensive bridge. Then, as engineering proceeded, the needed energy dissipater got longer, further west in the part of the creek in my property. Eventually, Mr. Demling informed me that the storm drainpipe could not be buried, but needed to be on top of the slope for engineering reasons. Furthermore, the slope needed to be protected from groundwater seepage by a special subsurface geotechnical fiber, and that would result in one species of coyote bush allowed on the slope. I think that there are other solutions to address the groundwater seepage.

We have had to compromise with CALTRANS much more than I would have liked to get this project to the permit stage. The CALTRANS staff seemed to be operating in good faith and they tried to compromise with me. However, the project started out to be a model of green stormwater design, ecological restoration and coastal access. Now it is a much grayer infrastructure that is only needed because of CALTRANS own actions and neglect for 23 years.

Last week, I was informed that the project was $800,000 over budget and they would be removing the bench for the Coastal Trail. I am strongly opposed to this. I persuaded them to ask for an additional appropriation to fully fund this project. On Thursday, Mr. Demling told me he would ask for the additional funding, but would need the coastal permit approved by the County to bolster his arguments for funding.

So, I am writing today to ask you approve this permit, <u>subject</u> to

- CALTRANS agreeing to fully fund this project, thus finally mitigating the damage caused by their emergency drainage change 23 years ago.

- Require that the permit will only issue when CALTRANS shows full funding for the project that County planning staff have recommended for approval.
- Make it clear to CALTRANS that they must make it possible for a Coastal Trail to traverse this creek and that approval of the permit is that the bench for the trail now in the plans must be a part of the project.
- Require them to submit a detailed revegetation plan that restores native vegetation for your approval.

Finally, if CALTRANS does not fully fund this project, they should not be allowed to simply abandon this project or modify it to eliminate access or take out any remaining ecological restoration. The County has the legal authority, under the delegated authority from the Coastal Commission, to require that CALTRANS submit a permit in place of the emergency permit issued in 1998. They never finalized their emergency permit with one that meets the requirements of the Coastal Act. I ask that, if CALTRANS does not fully fund this project, that Mendocino County use that authority to require them to do so.

Sincerely

Madelyn Glickfeld

cc: Frank Demling, CALTRANS
Mark Gold, Deputy Secretary for Oceans and Coastal Policy, CNRA
Karyn Gear, State Coastal Conservancy
Peter Jarausch, State Coastal Conservancy
Bob Merrill, North Coast District Director, California Coastal Commission.
Conrad Kramer, Mendocino Land Trust
Julia Krog, Mendocino County Planning Department
Scott Perkins, Mendocino County Planning Department

Attachments: Exhibit A. 2004-2008 photos
Exhibit B. Terry Barber, Hydrological Report on Creek Impacts of Drainage Diversion with recommendations for realignment.

Exhibit A

2004 and 2008 Photos showing Progressive Damage from Realignment of Highway One Stormdrain

2004 photos showing the erosion west of the drainage. Note the location of the CALTRANS white fence.

Note the migration of the rocks off the top of the slope exacerbating erosion and impacting habitat.

Rock revetment failing on road slope after the reconfigured drainage.

Looking from Highway One to show the extent of rock placed on the side slope of the highway. Later pictures show the rocks just sliding into the creek, actually deepening slide slopes and widening creek. Note the elevation of the CALTRANS fenceline.

Extent of erosion by 2008 at the Cal Trans Boundary. Note that the fence shown above is, four years later, hanging in mid-air. Note the Impact on the deepening of the creek, and migration of boulders that had been added to stabilize the highway. Creek slope was eroded on our property and destabilizing the slope adjoining our driveway.

Looking towards southern side back in 2008, also showing erosion, rock migration and steepening of the slope.

2008 showing the outfall of the diverted storm drain under Highway One, the turn to the south, towards the creek and unpermitted rocks that served to direct the flow.

Exhibit B:

2008 Terry Barber Hydrological Report

Site Review: Property of Madelyn Glickfeld Field Survey on 3-4-04 Writeup 4-04-04
2100 Highway 1 at Navarro Ridge Road 10:00-11:45 + 1 hour travel + 2 write up
madelynnglickfeld@verizon.net

Background:
On 3-4-04 I responded to a request by Lee Lette for a Professional Hydrologist to review the stream crossing of Navarro Creek across Highway 1. Client suspects the 1998 stream crossing repair may be subjecting property owned by Madelyn Glickfeld to excessive erosion. The purpose of my visit was to examine the culverted stream crossing as it relates to the stability of adjacent lands owned by Ms. Glickfeld and the health of the stream community of Navarro Creek.

Observations:

- A plastic, double-walled culvert of dimensions 36 inches in diameter by 100 feet in length conveys Navarro Creek across Highway 1 at mile-marker 42.32. Sediments are storing at and above the inlet as they settle due to the shallowing change in grade established by the culvert inlet (photo 1). The outlet of this culvert extends from the upper 1/3 fill of the crossing instead of the base of the fill.
- There is also an exposed downstream end of a buried, rusted 12 inch diameter corrugated metal pipe (length unknown) that appears to be threaded through the base of the crossing fill which may have conveyed all or part of the stream sometime in the past. The inlet for this culvert was not located.
- The drainage area above the crossing contributing to Navarro Creek was calculated at 62.82 acres. The natural soil runoff coefficient assumed for loamy soils vegetated with mixed conifers is 30%, yet with present and planned future developments in 5-acre parcels, disking, paving, and grazing, the runoff coefficient may reasonably be increased to 35% for use in floodflow calculations as impermeable areas increase.
- The gradient of Navarro Creek is approximately 4% immediately upstream of the culvert, then steepens to about 10% for most of the stream length. Immediately downstream of the culvert, the stream gradient is approximately 17% in the rip-rap reach, then eases back to 10% as the rip-rap recedes.
- There is a 5-foot tall knickpoint (waterfall) occupying the streambed about 1/3 of the distance downstream from the culvert outlet to the end of boulder rip-rap. The knickpoint has a native soil substrate surrounded on both the up and downstream ends by rip-rap. The rip-rap on the downstream side of the knickpoint is unstable underfoot (photos 2,4).
- Substrate upstream of the crossing consists solely of gravel, sand, and silt. Immediately downstream of the crossing the substrate coarsens to1-4 ton imported boulder rip-rap for approximately 100 feet of slope distance, beyond which the substrate returns to the gravel, sand, and silt exhibited naturally upstream.

- Natural vegetation upstream includes a variety of aquatic, terrestrial and riparian plants including grasses, sedges, ferns and willow. Downstream aquatic and riparian vegetation is limited until the rip-rap subsides and the native substrate takes over. At that transition, ferns, fir, pines, and wax myrtle begin occupying the riparian zone.
- Streambanks upstream of the Highway 1 crossing are 100% vegetated and stable. Streambanks immediately downstream of the crossing on both sides (property of Ms. Glickfeld) are very unstable with fresh escarpments showing bare soil as well as a series of recovering streambank failures with varying degrees of grass and fern cover (photo 3).
- The fillslope under Highway 1 is perched and unstable with fresh escarpments observed as over-steepened bare soil, as well as conchoidal cracks in the pavement of Highway 1 at the downstream side.

History of the site:
According to information presented by Lee Let on behalf of Ms. Glickman, the plastic culverted crossing was a winter road repair designed by Caltrans Engineer Guy Preston, and installed by Excavator Operator Keith Paulson in the winter of 1998. The crossing was realigned to its present position to the north of the preceding crossing by approximately 25 feet. The repair was required, according to Caltrans officials on site because the prior culvert had failed, and the road was in danger of collapse during the El Nino rains of 1997-98. In the emergency, they didn't think they could replace the culvert in its then present (natural?) alignment due to saturated fill, the need for ongoing traffic control, and perhaps a lack of environmental permits that generally limit construction to the dry season. Since the emergency repair, site conditions have deteriorated (observations described above) and to date no permanent repair has been initiated.

Hydrological and Biological Evaluation:
Culvert diameter
50 and 100-year rainstorms which should be conveyed through the crossing are estimated to shower 0.6 and 0.66 inches of rain per hour over the Navarro Creek drainage area of 62.82 acres upstream of the culvert. Stream length from ridge to Highway 1 crossing was determined to be 0.58 miles from the USGS topographic quadrangle map. Time of runoff concentration required from ridgetop to crossing was calculated at 10-15 minutes. Q50 and Q100 should be considered design flows on this pipe by the formula Q=CIA where Q is streamflow as CFS (cubic feet per second); C is soil runoff coefficient (a constant = 0.3 for loamy forest soils; 0.35 for partially developed loamy forest soils); I is rainfall intensity (0.6 and 0.66 inches per hour). Q50 for a 50-year storm is thus predicted to be 13.19 cfs and Q100 for the 100-year storm to be14.51 cfs. According to my floodflow calculations, the 36" culvert presently on site is barely be capable of conveying the estimated 50-year predicted floodflow for Navarro Creek and is definitely undersized for the 100-year projected floodflow (see attached floodflow and culvert sizing calculations).

Culvert diameters should be increased beyond runoff capacity allotted for streamflow to provide space for passing woody debris (sticks, leaves, logs), and bedload (sand, silt, gravel, cobble). Taking these three elements together suggests that at minimum the culvert diameter should be increased to the next standard pipe diameter (48") or the crossing should be bridged. The pipe's inlet presently shows some erosion indicating water is pooling and/or swirling around the inlet,

one signal that the crossing is undersized even for the relatively mild floods experienced locally since the 1998 New Years Flood.

Culvert alignment

Unless there is a compelling argument against it, stream crossing culverts should be aligned within the natural channel's path or problems like bank failures will commonly occur. This culvert is not in the natural channel's path but realigned approximately 25 feet to the north. As such it is required to make a sweeping 90-degree turn to get from the culvert outlet back into the natural channel. It has potential to destabilize the bank receiving the forceful apex of the flow, even though this bank is presently protected by rip rap. A bank failure of approximately 100 cubic yards is possible there near the Glickfeld gate. Already one of the large boulders that protects that bank has rolled out of position downstream.

The dewatered streamcourse probably still carries some water underground through interstitial pore space within the crossing fill of Highway 1. This may be the cause for the instability noted in the downstream fill face that may be responsible for generating the cracks in the pavement there.

Culvert grade

Instability of the site is caused by the stream adjusting significantly to the changes of gradient imposed on it by the 1998 stream diversion and pipe installation. The gradient of the pipe is far too flat compared to the stream's natural gradient. Ideally, culverts are installed at the base of the fill at the natural stream's gradient. Installing the pipe out of grade (too mild) has caused deposition of bedload gravel, sand, and silt around the inlet of the pipe far in excess of what would have stored there. Instream vegetation has grown up through the deposit and the combination makes the stream gradient upstream of the pipe artificially low and flat. The outlet of the pipe "shotguns" and waterfalls down to rip rap boulders added (approximately 100 cubic yards) at the culvert outlet to build the elevation of the streambed receiving the outlet of the pipe. Presumably, the boulder rip-rap at the outlet and downstream was designed to bring the elevation of the natural streambed artificially up to the elevation of the pipe's outlet. The rip-rap probably did increase resistance of streambank soils to erosion but appears to have had just temporary success.

Ideally this culvert should have been installed at the natural stream gradient (estimated at 10%) so that the bottom of the culvert inlet and its outlet touch the natural stream's bed. Winters since 1998 have acted to move the rip-rap and other streambed bed materials downstream of the culvert to the extent that boulders have been displaced from their original positions in both the bed and the banks of Navarro Creek downstream of the culvert outlet. This is most obvious at the outlet and the knickpoint. Some boulders that once occupied these positions have toppled downstream into a pile and left this area without bed and bank armor. Photos predating the present confirm the original upstream position of certain unique boulders. Knickpoints are an unstable feature which erodes headwardly to the next grade controlling structure upstream. In this case the next grade control structure is the culvert outlet. As the knickpoint migrates upstream, deepening itself in the process, more boulders will tumble down from above, filling

the present knickpoint's void. As the bottom drops out, the banks of Navarro Creek will follow until the knickpoint reaches the culvert outlet and the banks slide into their angle of repose.

Highway 1 Fill Face

Conchoidal cracks in the highway pavement and eroded fill face at the 1998 crossing location suggest the road fill beneath is subsiding. It is reasonable to assume residual streamwaters continue to pipe through the road fill there and are causing the subsidence. This is likely to persist as the stream, the groundwater, and the local hydrology have roots in the natural stream path that are not fully disconnected by a stream diversion. Besides risking the road's drivability and highway safety, the lack of stability there has led to easement restrictions requiring power lines to be relocated around that area instead of being buried through it

Potential resolutions:

Crossing

A) Redesign a bridged crossing over Navarro Creek in the position of the natural stream. This is the best remedy.
B) Design a new crossing with a wider and longer pipe so that the stream is conveyed across Highway 1 at its natural elevation, gradient, and natural path alignment. Ensure the new culvert diameter is at least 48 inches.

Road Fill Under Highway 1

A) Excavate the fill down to the natural streambed
B) Convey the natural stream through its natural path
C) Compact fill in moist 12" lifts to pavement level
D) Ensure sideslopes and fill faces retain a stable 1:1 or 2:1 slope angle

Streambed

The streambed is presently full of unnatural, imported rock rip-rap on the downstream side. On the upstream side finer upstream stored sediments have aggraded. Between the two natural ends is an unnatural, class IV stream diverted out of its natural course and is severely out of equilibrium. Steps to restoring the streambed include

A) reconnecting the natural channel through the road fill in its natural path
B) dewatering the diversion
C) recontouring the hillslopes by removing the boulders and reshaping streambanks
D) installing grade control structures at critical points up and downstream of the crossing to avoid initiating knickpoints into natural areas.

Streambanks

Eroded streambanks are presently nearly vertical and past their natural angle of repose. Continued lateral erosion is likely.

(A) Remove rip rap

(B) rebuild or cut back sideslopes to 2:1 or even 1:1 slope angles and revegetate with native plants.

Conclusion:

The 1998 emergency winter culvert repair on the Navarro Creek stream crossing across Highway 1 has generated a state of disequilibrium. The disequilibrium was imposed on the creek by diverting its path in a northerly direction changing the stream's alignment and natural gradient. Without restorative treatments the Glickman's property will continue to erode as knickpoints and bank failures until Navarro Creek reaches an equilibrium with the new position and gradient imposed by the 1998 repair. A new bridge over the natural stream is the best solution affording a safe highway condition, a natural streambed, stable banks, and a floodable crossing. If a permanent culverted crossing upgrade is planned, then the culvert should be installed in the natural stream path and alignment, at its natural grade, at the base of the fill, with a diameter of 48 inches or greater, and long enough that both upstream and downstream fillslopes atop the pipe are 2:1 or milder to reach a stable angle of repose.

Teri Jo Barber
Professional Hydrologist #1535 Certified by American Institute of Hydrology

PHOTO 1
Culvert inlet at Navarro Creek 3-4-04, upstream side of Highway 1 crossing. Culvert appears undersized based on erosion on both sides of culvert inlet and partial filling. Landscape surrounding inlet is instream stored sediment colonized by grasses, rushes, sedges, forbs. Natural channel is to the south (Right, off photo) and has a dense riparian canopy of willow adjacent to the stream.

PHOTO 2
Knickpoint is seen center photo as a "waterfall" behind large boulder. Note 5-foot tall drop has a bed composed of native soil or fill which is highly erodible (not rip rap). This feature will progress headwardly toward the culvert outlet. This process is deepening of the channel which will become 5' deeper than it is now. The deepening channel will result in the existing banks becoming perched above, and oversteepened. Banks which will then slide into the channel as the stream equilibrates.

PHOTO 3
Existing bank failure on Glickfeld property. Looking downstream from Highway 1, this is on the right.

PHOTO 4
Another look at the knickpoint waterfall. Note bank failure with boulder perched above. Other rip-rap in line to fall as knickpoint migrates upstream. Also note large pile of rip-rap (photo left). Some of these have tumbled in