



February 11, 2021

To Whom It May Concern,

In review of the Trinity River Channel Rehabilitation Site Oregon Gulch (River Mile 80.9–81.7) Draft Environmental Assessment/Initial Study (EA/IS), (SCH# 2021010191), dated January 2021, the California Geological Survey (CGS) has the following comments and recommendations.

The Oregon Gulch project level EA/IS is tiered from a 2009 Trinity River Restoration Program (TRRP) Master EIR (Master EIR). At the time the Master EIR was finalized the scope of operations for the proposed Oregon Gulch Channel Rehabilitation project had not been fully developed (Master EIR Page 2-32). Based on our evaluation of the EA/IS and the Master EIR it is tiered from, it appears the proposed operations at the Oregon Gulch site may have expanded beyond the scope of the Master EIR, including placing fill in the active channel and altering the course of a stream or river. For these reasons, additional analysis and mitigations may be required to those proposed in the EA/IS.

### Geology and Geologic Hazards

The EA/IS proposes the placement of about 40,900 cubic yards of fill material across the active channel of the Trinity River to approximate a “constructed landslide deposit” (U-2) (page 17). The placement of U-2 is intended to divert the course of the Trinity River about 50 degrees to the east and onto a restored floodplain before re-entering the existing river channel about 2,000 feet downstream.

Our review of previous rehabilitation projects tiered from the Master EIR did not propose the construction of large quantities of fill with the intent to divert the active channel of the Trinity River.

Naturally occurring landslides regularly fail and temporarily divert or alter the course of the Trinity River. These types of diversions are often washed away and the river re-establishes its original course within 1 to 2 years.

Is it the intent of the U-2 structure to be temporary and allowed to be eventually washed away by fluvial processes, or is it intent for it to be more of an engineered structure, capable of withstanding design level loads that include hydrostatic (effective stresses), hydrodynamic (scour due to impinging flood flows), and potentially dynamic loads due to seismic shaking?

The intended purpose and lifespan of the “constructed landslide deposit” would dictate the proposed design, construction, and potential environmental impacts.

We recommend that the subsequent draft EA/IS include the analysis of anticipated environmental impacts pertinent to Geology and Geologic Hazards and propose mitigations to minimize any potential adverse effects to the environment. The subsequent environmental analysis should, at minimum, include mitigations to address slope stability, scour, and the effects of liquefaction.

### Floodplain Hydrology and Hydraulics

According to the EA/IS the proposed project would not result in an increase in the base flood elevation (page 43). Based on this determination, the EA/IS concludes that the anticipated environmental impacts to hydrology and flooding as a result of the proposed project would be less than significant.

However, according to the Master EIR, a future project would result in a significant impact to flood plain hydrology if the following is proposed (Master EIR page 4.4-11):

- substantial alteration of the existing drainage pattern of a site or area, including the **alteration of the course of a stream or river**, or substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site

Because the EA/IS proposes to divert the course of the Trinity River about 50 degrees to the east and occupy a new channel for a distance of about 2,800 lineal feet, it would appear the proposed channel does not comply with Master EIR.

For this reason, we recommend that the EA/IS should include a more detailed evaluation of potential for impacts to flood plain hydrology and hydraulics to address the apparent discrepancy with the Master EIR.

### Recommendations

The Lead Agency should consider that the EA/IS address and evaluate potential environment and environmental consequences as a result of the proposed project pertaining to the following Resource Topics:

- Geology and Geologic Hazards and
- Floodplain Hydrology and Hydraulics

Geology and Geologic Hazards: We recommend that the EA/IS Geology and Geologic Hazards section include discussion and evaluation of the stability of the proposed “constructed landslide deposit” U-2.

Floodplain Hydrology and Hydraulics: We recommend the Lead Agency consider revisions to the EA/IS to address and evaluate the following significant impacts to Floodplain Hydrology and Hydraulics as defined in the Master EIR:

- substantial alteration of the existing drainage pattern of a site or area, including the alteration of the course of a stream or river, or substantial increase in the rate

or amount of surface runoff in a manner that would result in flooding on- or off-site

Please feel free to contact Jacob Lee at [jacob.lee@conservation.ca.gov](mailto:jacob.lee@conservation.ca.gov) with any question you may have.

Regards,

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