



# California Traffic Control Devices Committee Agenda Item Report



<b>Meeting Date:</b> February 02, 2023	<b>From:</b> David Man, Principal TE, Caltrans District 4
<b>Item Number:</b> 16-09	
<b>Sponsored By:</b> Yue Wang, PE, Caltrans	<b>Presented By:</b> Robert McNew, Caltrans HQ Safety Programs
<b>Description:</b> Request for Closure of Experiment with Messages and Graphics on Dynamic Message Signs on Freeway.	

**Recommendation:**

Motion by committee to approve closure of this experiment in response to Caltrans' District 4 Traffic Operations' (experimenting agency) letter dated August 8, 2021, addressed to CTCDC Chair, and email dated January 19, 2023, addressed to CTCDC Secretary, requesting immediate closure of experiment.

**Agency Making Request/Sponsor:**

David Man, Caltrans / Yue Wang, CTCDC Member.

**Background:**

Caltrans District 4 requested approval from CTCDC to experiment with messages and graphics on Dynamic Message Signs on the Interstate 80 (I-80) corridor in Alameda and Contra Costa Counties. CTCDC provided approval in CTCDC's March 3, 2016, meeting.

FHWA approved the experiment on December 9, 2016. The status of this experiment continues to be pending due to multiple concerns and issues exchanged between FHWA and Caltrans.

Caltrans' District 4 Traffic Operations (experimenting agency) provided a summary of the activities related to this experiment in the attached letter dated August 8, 2021, addressed to CTCDC Chair. Caltrans requests closure of this experiment, per email dated January 19, 2023, addressed to CTCDC Secretary, as Caltrans plans to conduct new experiments on color CMS after further consultations with FHWA.

**Attachments:**

- Attachment A – Caltrans letter dated August 8, 2021.
- Attachment B – Caltrans email dated January 19, 2023.



# ATTACHMENT A



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## Attachment A – Caltrans letter dated August 8, 2021.

CALIFORNIA STATE TRANSPORTATION AGENCY

GAVIN NEWSOM, GOVERNOR

### California Department of Transportation

DISTRICT 4  
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(510) 286-5900 | FAX (510) 286-6301 | TTY 711  
[www.dot.ca.gov](http://www.dot.ca.gov)



August 8, 2021

Mr. David Fleisch  
California Traffic Control Devices Committee, Chair  
Division of Safety Programs  
P.O. BOX 942873, MS-36  
Sacramento, CA 94273

Dear Mr. Fleisch:

The California Department of Transportation (Caltrans) District 4 would like to provide an update on the progress of the ongoing experimentation that was approved by the California Traffic Control Devices Committee (CTCDC).

Caltrans asked for approval from CTCDC to experiment with messages and graphics on Dynamic Message Signs (16-09) on the Interstate 80 (I-80) corridor in Alameda and Contra Costa Counties. After receiving CTCDC's approval on March 3, 2016, Caltrans subsequently sought approval from the Federal Highway Administration (FHWA).

FHWA approved the experiment on December 9, 2016 after Caltrans agreed to withdraw selected graphical display concepts from the experimentation. Citing potential driver comprehension issues, FHWA requested Caltrans remove the congestion map or graphical route information panels (GRIP), and transit agency logos such as Bay Area Rapid Transit (BART) until human factors studies show potential benefits. Caltrans partnered with UC Berkeley PATH to conduct the requisite studies with the intent to provide a draft report to FHWA demonstrating the GRIP could be safely tested in the field with live traffic on the Information Display Boards (IDB), also known as color changeable message signs.

UC Berkeley PATH developed a multistage lab environment study to measure drivers' interpretation and comprehension of different designs. The experiments and research conducted by UC Berkeley PATH took place in 2018. The experiments include analyzing the comprehension and response to the MUTCD compliant 3-line travel time message (baseline), graphical route information panels (GRIP), and the 5/6-line information messages along with various studies of various non-MUTCD compliant symbols or legends. A driving simulator was also used to more realistically evaluate driver comprehension in a real environment. At the conclusion of the analyzing lab and driving simulator study data in mid-2019, Caltrans Headquarters formally

"Provide a safe and reliable transportation network that serves all people and respects the environment"



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### Attachment A – Caltrans letter dated August 8, 2021. (Continued)

Mr. David Fleisch  
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requested to FHWA that Caltrans be able to move forward with a controlled field evaluation or test of the GRIP and other graphics concepts. Unfortunately, FHWA staff in Washington DC has yet to approve the requests after further exchanges with Caltrans, citing the data in the UC Berkeley human factor study does not justify further field evaluation using the actual message signs along I-80. Therefore, any evaluations involving the GRIP concepts are indefinitely paused and considered incomplete until further notice. If the Department receives support from FHWA, Caltrans will resume the experimentation of the GRIP and other non-compliant graphics provided research resources are still available. A final copy of the extensive research by UC Berkeley PATH, published on 10/30/2020, is attached for your reference.

As Caltrans worked with UC Berkeley PATH on the driver behavior studies, it continued to experiment with the use of text or approved graphic messages up to six lines on the IDBs. The six-line messages were displayed during major incidents along I-80, but not on a regular basis, which minimizes the sample size. Caltrans continues to evaluate the six-line displays and has not completed the processing of analyzing data associated with the instances the Department utilized messages with four or more lines. It plans to do so expediently.

If you have any questions or concerns, please reach out to me via email at david.man@dot.ca.gov.

Sincerely,

*David S. Man*

David Man  
Principal Transportation Engineer

Attachment: Information Display Board for Corridor Management in California

c: Robert Bronkall (Vice-Chair, CTCDC)  
Johnny Bhullar (Secretary, CTCDC)

"Provide a safe and reliable transportation network that serves all people and respects the environment"



# ATTACHMENT B



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Attachment B – Caltrans email dated January 19, 2023.

**From:** Man, David@DOT <david.man@dot.ca.gov>  
**Sent:** Thursday, January 19, 2023 11:32 PM  
**To:** Bhullar, Gurinderpal S@DOT <johnny.bhullar@dot.ca.gov>  
**Cc:** Wang, Yue@DOT <yue.wang@dot.ca.gov>  
**Subject:** Exp. Closure: CTCDC Experiment 16-09 (FHWA 2(09)-124(E)) - Messages and Graphics on Dynamic Message Signs on Freeway (CT District 4)

Johnny:

Please close the following experiment, 16-09 (FHWA 2(09)-124(E)) - Messages and Graphics on Dynamic Message Signs on Freeway (CT District 4), since Caltrans plans to conduct new experiments on color CMS after further consultations with FHWA.

Thanks,

**David Man**  
Acting Division Chief  
Traffic Operations  
(510)314-5335