

California Department of Transportation California Highway Information Network (CHIN)

History

Since the 1960s Caltrans has made available highway condition information to the public. The original "system" was called CHIBN, Caltrans Highway Information Broadcaster's Network and had no direct public exposure. It consisted of typed hourly reports sent via teletype to subscribers interested in having the information for their own use or for re-broadcast. Subscribers included business and government entities such as radio stations, the California Highway Patrol (CHP), the federal Department of Transportation (DOT), The Office of Emergency Services (OES), the American Automobile Association (AAA), and Chambers of Commerce.

To accommodate news broadcasts that occurred on the hour, an hourly summary report was sent 15 minutes before every hour (every hour on the ¾ hour), to give the broadcaster time to receive and preview the information before broadcasting it. Remnants of this process still exist today, with an hourly summary report being posted to the internet every hour on the ¾ hour. The highway condition data came to the HCC via two-way statewide radio communications.

The CHIN, Caltrans Highway Information Network, was the next generation and referred to recorded messages available for the first time to the public, via telephone in the form of a continuous loop recording. Local phone numbers were available with local highway condition information. Dispatchers would continuously record highway conditions in the HQ Communications Center, still located in the same physical location today, but not staffed 24 hours a day.

In 1989, Caltrans purchased a new phone system that enabled District TMCs to record local highway condition information. The result was a patchwork of styles and voices used throughout the state, without consistent standards and the inability to access information outside of the local area without calling another number.

Around 1995, the Broadcaster's Network ceased altogether, replaced by written highway conditions being sent to the internet via the Caltrans home webpage. The phone line became a single statewide toll free 800-number with the HCC tasked with applying statewide standards and being responsible for dissemination of all highway condition information to the traveling public.

CHIN has expanded to provide information using three major platforms, IVR for telephone users, California QuickMap for internet users and the Commercial Wholesale Web Portal (CWWP) for access to data files available to the public and Internet Service Providers (ISPs) such as; Google, Tom-Tom, Garmin, Traffic.com and many others.

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Real-Time System Management Information Program

Traveler Information was provided by Caltrans as a service to help motorists determine the best route selection and as a tool to reduce congestion due to incidents. On November 8, 2010 the Federal Government established the Real-Time System Management Information Program with regulations on the types and timeliness of information that State Departments of Transportation must record. The new requirements are outlined in 23 Code of Federal Regulations (CFR) 511. There are two implementation dates contained in 23CFR511 depending on the classification by the President's Office of Management and Budget for areas with populations greater or less than 1,000,000. The implementation date for areas with population less than 1,000,000 is November 8, 2014. The implementation date for areas with population greater than 1,000,000 is November 8, 2016 with an additional requirement to provide information on routes of significance.

The CHIN currently meets or exceeds the requirements established in 23CFR511 for areas with populations less than 1,000,000. Caltrans is also working with our local partners in areas with populations greater than 1,000,000 to meet the additional requirements for information on routes of significance by November 8, 2016.

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California QuickMap

The California QuickMap webpage provides traffic speed information, lane and road closure due to construction and maintenance activities, incidents on the roadways, Changeable Message Signs (CMS) information, camera snapshots and chain control information for the State Highways. Different types (Layers) of information can be presented through the use of check boxes which enable that information layer to be displayed. Clicking on an icon presents additional information or images in a popup box. All of the information presented by California QuickMaps is pulled from files on the Caltrans public servers as either data or images files.

Base Map

The base map for California QuickMap is the Google Map. All additional information is presented as selectable layers that can be turned on and off as the operator wishes. The base map can also be displayed as a maps and street, terrain or satellite with multiple zoom views.

Traffic Speed

The traffic speed layer data is provided by the Google Traffic information. Using Google Traffic information allows California QuickMap to provide speed data beyond what is available using just Caltrans available data. Google uses Caltrans data as well as other sources of data like Automated Vehicle Location (AVL) from private companies as well as cellular phone data. The traffic layer is updated every time the page is refreshed. The colors represent speeds with the definitions shown below:

- **Green:** more than 50 miles per hour or 80 kilometers per hour
- **Yellow:** 25 - 50 miles per hour or 40 - 80 kilometers per hour
- **Red:** less than 25 miles per hour or 40 kilometers per hour
- **Red/Black:** very slow, stop-and-go traffic
- **Gray:** no data currently available

For more information on the Google Traffic Layer see the following links below.

<http://support.google.com/gmm/bin/answer.py?hl=en&answer=45854>

<http://googleblog.blogspot.com/2009/08/bright-side-of-sitting-in-traffic.html>

<http://google-latlong.blogspot.com/2009/08/arterial-traffic-available-on-google.html>

<http://www.mt-soft.com.ar/2009/08/26/google-maps-mobile-users-send-traffic-data/>

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Lane Closures

Caltrans Construction and Maintenance workzone activity that result in lane and full road closures are shown by activating the Lane Closure layer. Although the data files on the public servers include all active and planned lane closures California QuickMap only shows the active lane closures. Planned Lane closures are found using the "Planned Lane Closures" link on the Department's main webpage. We will be adding a similar link on the California QuickMap in the near future. The Lane Closure data files are updated every 10 minutes on the public server and on California QuickMap.

CHP / CHIN Incidents

Roadway Incidents are presented using the publicly available California Highway Patrol incident feed combined with Caltrans Highway Information messages:

- The CHP incidents use two different icon colors to represent the different severity of the incident, a triangle with an exclamation point in the center with yellow or red background.
- A CHP incident that involves closed lanes or results in a full closure uses a red background icon where all other incidents use a yellow background. Caltrans Highway Information icons always have red backgrounds.
- In the case where there is an incident with both a CHP incident and a Caltrans Highway Information Message a single icon with a red background is used with the Caltrans Information Message shown first and then the CHP incident information shown second in the dialog box.

The Roadway Incident layer is updated every 5 minutes.

Message Signs

Changeable Message Signs layer presents CMS icon only for signs with active messages. California QuickMap does not show icons for signs that are not currently providing message to the motorist. The dialog box presents the message as it is shown on the sign. The CMS layer is updated every 5 minutes.

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Cameras

The Camera layer presents selected still images from cameras throughout the state. Still images were selected instead of providing full motion imagery to insure that the webpage would be able to provide traveler information even during high demand periods. Since the camera images were never intended for use by the public when originally installed, Caltrans is currently working to upgrade and standardize the image quality and information provided. Frequency of a new image will vary between locations depending on the communication technology used. Ultimately, the goal is to provide image updates every 20 minutes or less.

Chain Controls

The Chain Control layer presents the active chain control conditions though out the state. There are two different icons used for chain controls, one is the diamond shape Road Closed sign and the other is the tire with chains for all other conditions. Restrictions are outlined in the dialog box. The different chain controls used in California are shown below.

Level	Description listed in dialog box
ESC	The California Highway Patrol is escorting all traffic due to weather conditions.
HT	All traffic is being held at the chain control check point due to accidents or weather related conditions.
MAX	Truck chain requirements are maximum for all trucks using Donner Summit.
MIN	Truck chain requirements are minimum for all trucks using Donner Summit.
R-0	There are no chain restrictions at this time.
R-1M	R-1M Trucks & vehicles pulling trailers use R-1 restrictions
R-1	R-1 Chains, traction devices or snow tires are required on the drive axle of all vehicles except four wheel drive, all wheel drive vehicles.
R-2	R-2 Chains or traction devices are required on the drive axle of all vehicles except four wheel drive, all wheel drive vehicles with snow-treaded tires on all four wheels.
RC	Currently the road is closed due to accidents or weather related conditions.
TH	All truck trailer combinations are being held at the chain control camper due to accidents or weather related conditions.
TS	All trucks must stop at the chain check point, caltrans is currently screening for chains. Drivers must have maximum chains in their possession in order to proceed. Trucks without chains will be

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	turned around. Permit loads are prohibited over the summit.
TTA	All truck trailer combinations are being turned around at the chain control camper due to traction problems over Donner Summit.
TTS	All single axle drive trucks pulling a trailer are being turned around at the chain control camper due to traction problems over Donner Summit.
TTSD	All single axle drive trucks pulling a set of doubles are being turned around at the chain control camper due to traction problems over Donner Summit.
VM	A traffic control is in effect to meter vehicles at the chain check point in order to reduce traffic congestion in the mountain areas.
W	Turn able black on yellow watch for snow sign

The Chain Control layer is updated every 3 minutes.

Zoom to

California QuickMaps provides some preselected zoom to locations. The user can also save any zoom location as a bookmark on their own browser.

Text Information

California Quickmap also provides a text based webpage also. The text provided is from the 1-800 service provided by Verizon. The information does not include the CHP incidents but does include the lane closures, CHIN messages, and chain controls. To view the text information, enter the highway number in the box half way down the left border and click the "check" box and the text page will be loaded.

Regional 511 Links

In addition to the information presented in the map portion of California QuickMap there are links to the different 511 organizations through out the State that provide more comprehensive traveler, commuter and multi-modal options within their respective areas.