

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

INITIAL STATEMENT OF REASONS

TITLE 13 CALIFORNIA CODE OF REGULATIONS, DIVISION 2, CHAPTER 6, ARTICLE 2.5
AMEND SECTION 1157.14

Inhalation Hazards Routes – Map 5 (CHP-R-2019-06204)

PURPOSE OF REGULATIONS AND PROPOSED AMENDMENTS

The California Highway Patrol (CHP) proposes to amend regulations in Title 13 of the California Code of Regulations (CCR), Division 2, Chapter 6, Article 2.5, Section 1157.14, regarding designated routes for the transportation of inhalation hazards by commercial vehicles on highways in the Mojave and Barstow-Hinkley areas.

Pursuant to Division 14.3, Transportation of Inhalation Hazards, commencing with Section 32100 of the California Vehicle Code (CVC), the CHP shall adopt regulations specifying routes to be used in the transportation of inhalation hazards by commercial vehicles. The CVC requires the CHP to keep information current in regulations, with maps clearly indicating designated routes and a list of locations for inspection stops, required inspection stops, and safe stopping places. The CHP's field commands conduct annual surveys on the inhalation hazards routes and stops to determine if changes are necessary. The proposed amendments will keep inhalation hazards routes consistent with the recently constructed Mojave Bypass, Barstow Interchange, and Hinkley Expressway along State Route (SR) 58, and enhance public health and safety in these areas. The proposed amendments will also add a map label of a required inspection stop for the newly completed Mountain Pass Joint Point of Entry (JPOE) Commercial Vehicle Enforcement Facility (CVEF) along Interstate (I) 15 near the California/Nevada border.

The proposed amendments have received concurrence from the CHP's Inland Division, Kern County Fire Department (KCFD), Barstow Fire Protection District (BFPD), San Bernardino County Fire Department (SBCFD), California State Fire Marshal (SFM), and California Department of Transportation (Caltrans).

PURPOSE OF AMENDMENTS

The proposed amendments will update and clarify designated routes for transporting inhalation hazards by amending Map 5, specified in Section 1157.14 CCR, due to the recently constructed Mojave Bypass, Barstow Interchange, and Hinkley Expressway along SR-58. Additionally, the proposed amendments will add a map label of a required inspection stop in Map 5 for the newly completed Mountain Pass JPOE CVEF along I-15 near the California/Nevada border.

Title 49 of the Code of Federal Regulations, Section 397.71, authorizes each state to establish, maintain, and enforce routing in order to minimize risks and enhance public safety for the highway transportation of inhalation hazards by examining, reviewing, and evaluating alternate

routes. This routing assessment employs the methodologies outlined in the Highway Routing of Hazardous Materials – Guidelines for Applying Criteria (FHWA-HI-97-003) published by the Federal Highway Administration (FHWA) of the United States (U.S.) Department of Transportation (DOT). The methodologies employed take into consideration items such as driving distance and time, number of schools, population and housing densities, and traffic crash rates along highways. The data is compiled using demographic and spatial data retrieved from the 2010 census survey conducted by the U.S. Census Bureau (CB), the 2012 emergency facility sites composed by the Southern California Earthquake Center (SCEC) at the University of Southern California (USC), the traffic volume counts compiled by Caltrans and the County of San Bernardino (CSB), the collision incidents collected in the CHP's Statewide Integrated Traffic Records System (SWITRS) database, and the highway length and transit time derived from Google Earth and Google Maps. When data is not available for certain segments of local roads, the best estimates on traffic volume counts and/or crash rates are applied. The evaluation of relative risks for each alternative route is conducted using a geographic information system (GIS) with a seven-mile buffer zone of the routes referenced in the 2016 Emergency Response Guidebook (ERG), issued by U.S. DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA).

Due to the recently constructed Mojave Bypass, Barstow Interchange, and Hinkley Expressway along SR-58, the CHP conducted two rulemaking processes in the past years to update routes for transporting explosives. Both regulation amendments were approved by the California Office of Administrative Law, filed with the California Secretary of State, and became effective on July 16, 2018, and March 6, 2019, respectively, for the Barstow-Hinkley area (CHP-R-2018-06) and for the Mojave area (CHP-R-2018-05). Both sets of adopted regulations were also provided to the PHMSA in order to have the national registry of hazardous materials routing updated.

RATIONALE AND ANALYSIS

➤ The Mojave Area

The current inhalation hazards routes near the town of Mojave, as shown in *Figure 1*, were designated and became effective in 1992. One section of the Mojave Bypass, a four-lane expressway, shown as the green line between Points A and D in *Figure 2*, was completed in 2003 on SR-58 near Mojave. The interchange between Points B and C in *Figure 2* was also constructed to link the old SR-58 to the Mojave Bypass, or vice versa, by decommissioning the old SR-58 section between Points A and C in *Figure 2*. The old SR-58 section between Points C and E was then relinquished, and became Business Route (BR) 58. Thus, the CHP would like to propose to remove the 1.1-mile decommissioned section between Points A and C, as shown in *Figure 2*, from the designated routes.

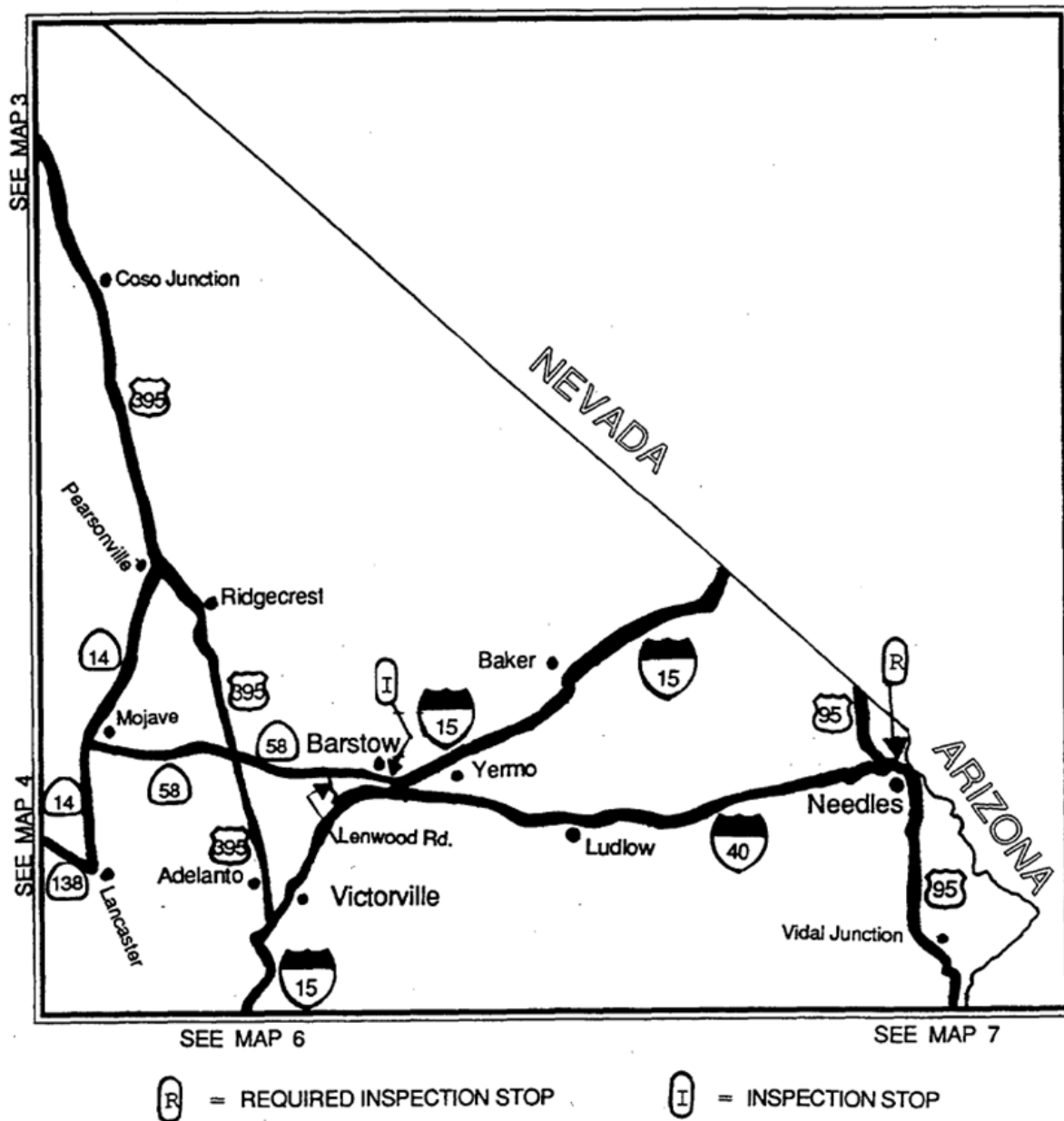


Figure 1: Map 5 Showing the Existing Inhalation Hazards Routes Designated in the Mojave and Barstow Area

The CHP also evaluated whether the Mojave Bypass can be added into the designated routes while considering the risks associated with the transportation of inhalation hazards by commercial vehicles near Mojave. For this purpose, two routes were analyzed for transporting inhalation hazards between Points B and D, as shown in Figure 2. Route 1 takes the existing designated inhalation hazards routes of BR-58 and SR-14 from Point B through Points C, E, and F to Point D (BCEFD); and Route 2 utilizes the Mojave Bypass/SR-58 from Point B to Point D directly (BD).

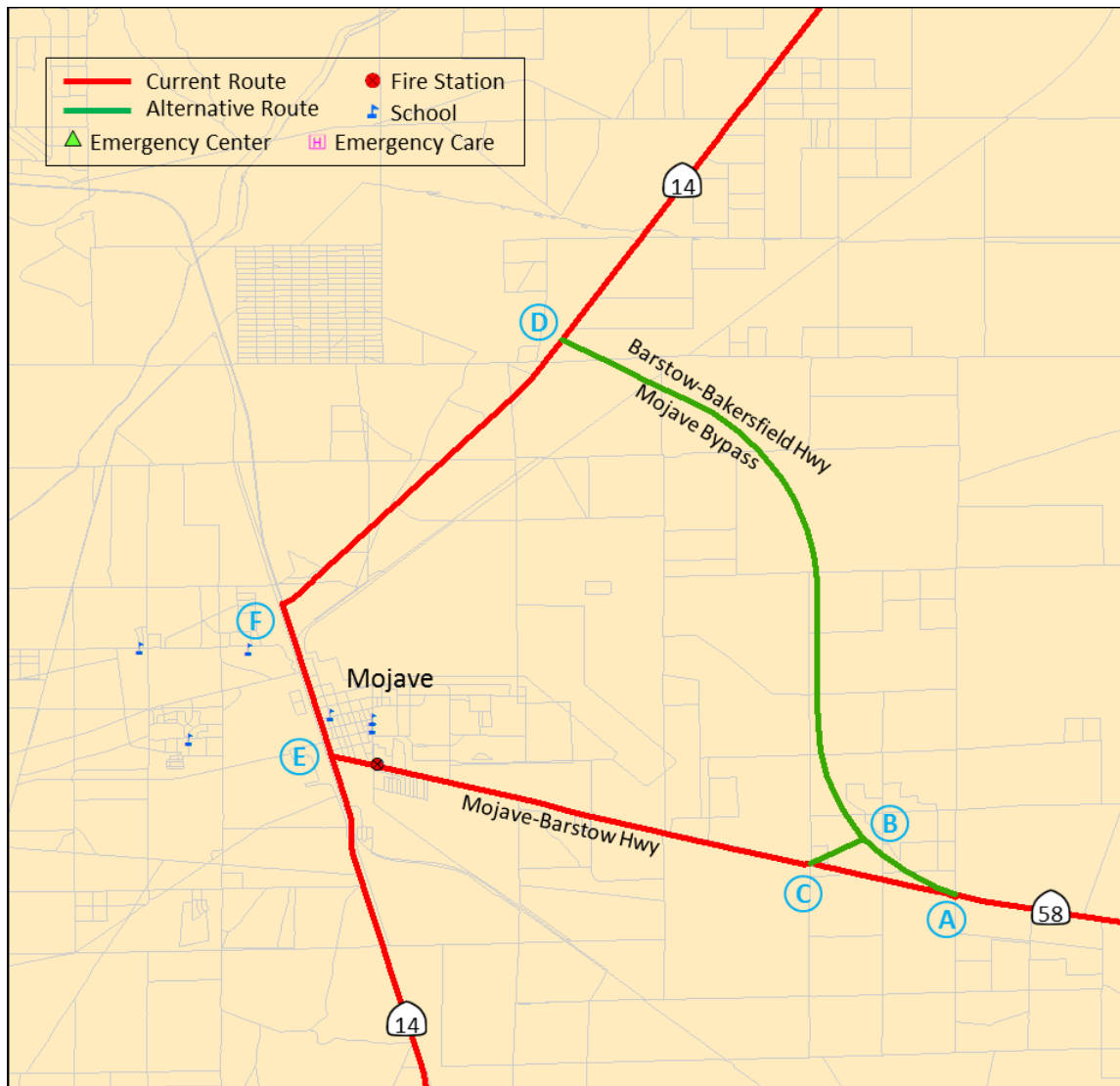


Figure 2: Proposed Alternative Routes Evaluated for Transporting Inhalation Hazards in the Mojave Area

Table 1 presents the derived characteristics of these two routes. Compared to Route 2, Route 1, traversing through the town of Mojave, shows a 61 percent longer road distance, two and a half times increase in drive time, three times higher crash rate, and around four times greater relative population or housing risk. Thus, commercial vehicles utilizing Route 2 may significantly reduce the potential risks associated with the transportation of inhalation hazards between Points B and D in *Figure 2*. In order to enhance public health and safety in this area, the CHP proposes to add 5.9 miles of the Mojave Bypass between Points A and D, as shown in *Figure 2*, into the designated inhalation hazards routes, which includes highway sections of 0.8 mile between Points A and B, and 5.1 miles between Points B and D. Table 1: Routes Evaluated for Transporting Inhalation Hazards in the Mojave Area

Alternate Routes	Route Length (mile)	Length Difference (mile)	Ratio (alternates/ minimum)	Estimated Driving Time (minute)	Ratio (alternates/ minimum)	Potential Population Exposure (<= 7 miles)	Ratio (alternates/ minimum)
Route 1: BCEFD	8.2	3.1	1.61	10	2.50	4,695	1.04
Route 2: BD	5.1	0.0	1.00	4	1.00	4,523	1.00
Route 3: BCE	3.9	0.0	1.00	5	1.00	4,693	1.00
Route 4: BDFE	9.4	5.5	2.41	10	2.00	4,717	1.01

Table 1 (continued)

Alternate Routes	Potential Population Impact (people per mile)	Ratio (alternates/ minimum)	Crash Rate (crashes per million vehicle miles traveled)	Ratio (alternates/ minimum)	Relative Population Risk (people per million vehicle miles traveled per road mile)	Ratio (alternates/ minimum)
Route 1: BCEFD	573	1.00	0.16	3.31	92	2.14
Route 2: BD	887	1.55	0.05	1.00	43	1.00
Route 3: BCE	1,203	2.40	0.16	1.39	193	3.32
Route 4: BDFE	502	1.00	0.12	1.00	58	1.00

Table 1 (continued)

Alternate Routes	Relative Population Risk (people per million vehicle miles traveled along route)	Ratio (alternates/ minimum)	Number of Schools (<= 7 miles)	Ratio (alternates/ minimum)	Potential Housing Exposure (<= 7 miles)	Ratio (alternates/ minimum)	Relative Housing Risk (housing per million vehicle miles traveled along route)	Ratio (alternates/ minimum)
Route 1: BCEFD	755	3.44	5	.00	2,037	1.29	327	4.27
Route 2: BD	219	1.00	6	1.20	1,580	1.00	77	1.00
Route 3: BCE	754	1.38	5	1.00	2,033	1.00	327	1.38
Route 4: BDFE	547	1.00	6	1.20	2,047	1.01	237	1.00

To further evaluate whether BR-58 should be removed from the designated status, Routes 3 and 4 were assessed. Routes 3 and 4 account for the situation when a commercial vehicle transporting inhalation hazards on westbound SR-58 (Point B) needs to travel to southbound SR-14 (Point E) to reach its destination. Comparing Route 3, passing through Point C (BCE), and Route 4, passing through Points D and F (BDFE), Table 1 reveals that Route 4 would take almost two and a half times longer road distance, and twice as much drive time by using the

Mojave Bypass. While emergency buffers are expanded from one mile for transporting explosives to seven miles for transporting inhalation hazards, the differences in their potential population or housing exposures along Route 3 and Route 4 can be reduced significantly. In this situation, crash rates may gain more sensitivity than potential population and housing exposures in calculating relative population and housing risks. With a 39 percent higher crash rate, Route 3 possesses 38 percent greater relative population or housing risk than Route 4. While the differences in these risks are greater than the FHWA's 25 percent threshold and, in addition, BR-58 south of Mojave is no longer in compliance with the federal Surface Transportation Assistance Act (STAA) of 1982, the CHP proposes to remove this 3.4-mile section of BR-58 between Points C and E, as shown in *Figure 2*, from the designation.

➤ **The Barstow-Hinkley Area**

The current inhalation hazards routes in the Barstow area, as shown in *Figure 1*, were designated and became effective in 1992. However, after a new interchange for SR-58, which connects to I-15 near Barstow, was completed in 2004, one previous segment of SR-58 was relinquished and named Old Highway (Hwy.) 58, as shown in *Figure 3*. Another four-lane expressway near Hinkley was also completed in August 2017, and its previous segment of SR-58 was relinquished and retained its name as the Barstow-Bakersfield Hwy. Since these new highway segments are completed, the CHP conducted an analysis to determine whether they might serve as alternative routes for the transportation of inhalation hazards in the Barstow-Hinkley area in order to enhance public health and safety for the surrounding residents and environment. To evaluate their relative risks of these highway sections, this analysis grouped them into individual routes and compared each one of them with the existing routes designated for transporting inhalation hazards in this area. *Figure 3* depicts the proposed alternative routes, which are also outlined in Table 2, along with their route characteristics that are derived from the best available data and estimates by conducting demographic and spatial evaluation on their associated risks for highway transportation of inhalation hazards.

As shown in *Figure 1* and *Figure 3*, for inhalation hazards to be transported from the I-15 junction at Old Hwy. 58 (Point A in *Figure 3*) to the SR-58 junction at Barstow-Bakersfield Hwy. (Point H in *Figure 3*), or vice versa, the shortest trip taken on the currently designated highways can be represented by Route 1 going from Point A to Points E, F, and H (AEFH). Taking advantage of the newly constructed Barstow/SR-58 Interchange and Hinkley Expressway, Route 2 presents an alternative route from Point A to Points B, C, G, and H (ABCGH). Comparing Route 1 to Route 2, Table 2 reveals that, even though Route 2 is 1.4 miles, or 8 percent, longer in road distance, Route 1 may need 7 minutes, or 44 percent, more drive time than Route 2. Crash rate is a function of collision incidents and traffic volumes along a highway, and is closely related to potential risks in this assessment. Since the four-lane expressway south of Hinkley was completed just recently, the traffic and collision counts on SR-58 for 2013-2015, provided by the Caltrans and SWITRS, still represent the counts on the Barstow-Bakersfield Hwy. Thus, the traffic volume and collision counts between Points F and H, as shown in *Figure 3*, are also applied to the new SR-58 segment between Points G and H. Since the highway distance of Lenwood Road (Rd.) between Points E and F is only 0.4 mile, its crash rate is retrieved from the estimates for the highway section of Lenwood Rd. between Points D and G, as shown in *Figure 3*.

With these adjustments and estimates, the crash rate of Route 1 shows more than quadruple the crash rate of Route 2, as revealed in Table 2. The expansion of the emergency buffer, from one mile for transporting explosives to seven miles for transporting inhalation hazards, dilutes the differences in potential population or housing exposures along Routes 3 and 4, and increases the sensitivity of crash rates on relative population or housing risks significantly. Thus, in comparison to Route 2, Route 1 also has more than quadruple relative population and housing risks.

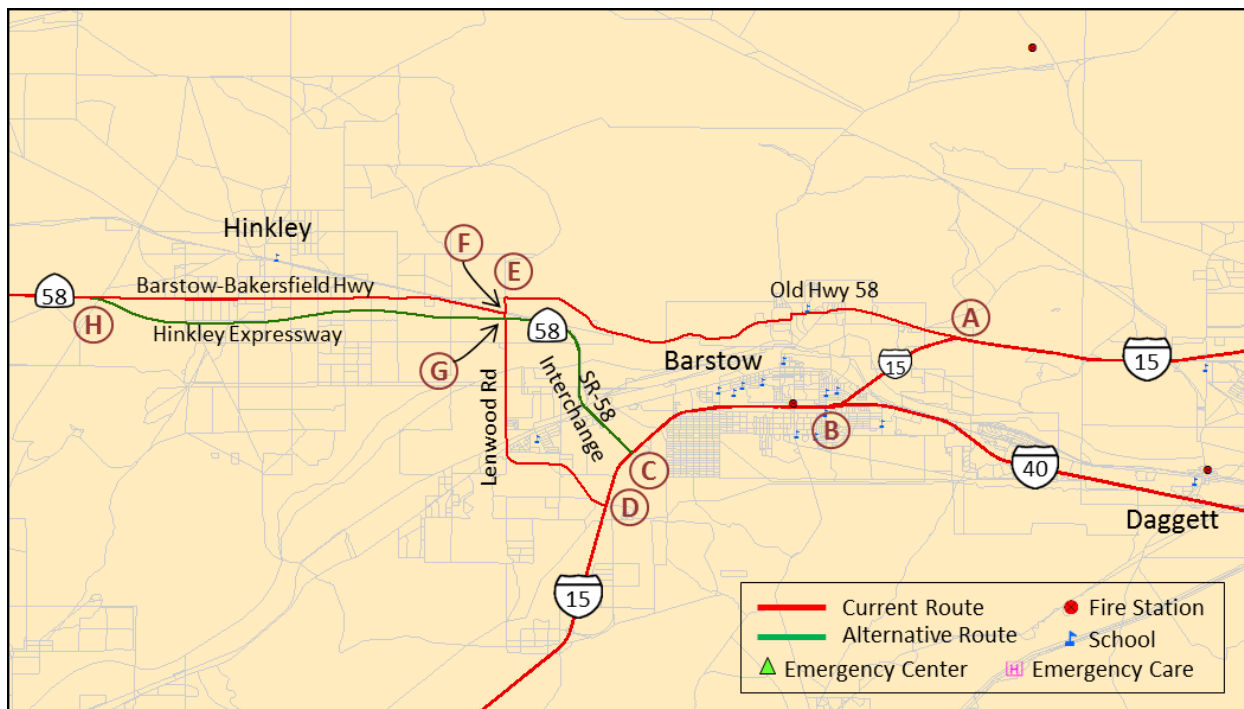


Figure 3: Proposed Alternative Routes Evaluated for Transporting Inhalation Hazards in the Barstow-Hinkley Area

The sections of Old Hwy. 58 and Lenwood Rd. in Route 1 do not meet the STAA requirements. Thus, due to its lower relative population and housing risks and its compliance with the STAA requirements, the CHP proposes to adopt Route 2 which will add 12.1 miles of the Barstow Interchange and Hinkley Expressway of SR-58 into the designated routes for transporting inhalation hazards, and remove 17.5 miles of highway sections specified in Route 1 from the designation.

While the Barstow Interchange is added into the designation, Lenwood Rd., connecting I-15 and SR-58, becomes redundant, as shown in *Figure 3*. To evaluate whether to remove Lenwood Rd. from the designation, Route 3 (DG in *Figure 3*) and Route 4 (CG in *Figure 3*) were compared by considering both northbound and southbound traffic on I-15 to have the I-15 section between Points C and D counterweighted. As presented in Table 2, compared to Route 4, Route 3, which goes along Lenwood Rd., has about 30 times much higher relative population and housing risks due to its higher crash rate. Thus, the CHP proposes to remove 6.0 miles of Lenwood Rd. from the designation, not only because of its higher relative population and housing risks, but also because of its noncompliance with the STAA requirements.

Figure 4 shows the proposed updates in Map 5. These updates include removing:

- Old SR-58 between Points A and C in Figure 2 – 1.1 miles,
- BR-58 between Points C and E in Figure 2 – 3.4 miles,
- Old Hwy. 58 between Points A and E in Figure 3 – 9.4 miles,
- Lenwood Rd. between Points D and E in Figure 3 – 6.0 miles, and
- Barstow-Bakersfield Hwy. between Points F and H in Figure 3 – 7.7 miles;

and extending:

- SR-58 between Points A and D in Figure 2 – 5.9 miles, and
- SR-58 between Points C and H in Figure 3 – 12.1 miles.

Table 2: Routes Evaluated for Transporting Inhalation Hazards in the Barstow-Hinkley Area

Alternate Routes	Route Length (mile)	Length Difference (mile)	Ratio (alternates/ minimum)	Estimated Driving Time (minute)	Ratio (alternates/ minimum)	Potential Population Exposure (<= 7 miles)	Ratio (alternates/ minimum)
Route 1: AEFH	17.5	0.0	1.00	23	1.44	34,370	1.00
Route 2: ABCGH	18.9	1.4	1.08	16	1.00	34,390	1.00
Route 3: DG	5.5	1.1	1.24	8	2.00	33,016	1.00
Route 4: CG	4.4	0.0	1.00	4	1.00	33,231	1.01

Table 2 (continued)

Alternate Routes	Potential Population Impact (people per mile)	Ratio (alternates/ minimum)	Crash Rate (collisions per million vehicle miles traveled)	Ratio (alternates/ minimum)	Relative Population Risk (people per million vehicle miles traveled per road mile)	Ratio (alternates/ minimum)
Route 1: AEFH	1,968	1.08	0.24	4.52	473	4.88
Route 2: ABCGH	1,823	1.00	0.05	1.00	97	1.00
Route 3: DG	6,003	1.00	1.66	30.17	9,946	24.12
Route 4: CG	7,510	1.25	0.05	1.00	412	.00

Table 2 (continued)

Alternate Routes	Relative Population Risk (people per million vehicle miles traveled along route)	Ratio (alternates/ minimum)	Number of Schools (<= 7 miles)	Ratio (alternates/ minimum)	Potential Housing Exposure (<= 7 miles)	Ratio (alternates/ minimum)	Relative Housing Risk (housing per million vehicle miles traveled along route)	Ratio (alternates/ minimum)
Route 1: AEFH	8,251	4.52	16	1.00	14,350	1.00	3,445	4.52
Route 2: ABCGH	1,826	1.00	16	1.00	14,359	1.00	763	1.00
Route 3: DG	54,705	29.97	14	1.00	13,630	1.00	22,584	29.96
Route 4: CG	1,825	1.00	14	1.00	13,726	1.01	754	1.00

In summary, the CHP proposes to add 18.0 miles and remove 27.6 miles of designated routes in the Mojave and Barstow-Hinkley areas for the transportation of inhalation hazards specified in Map 5 under Section 1157.14 CCR.

The proposed amendment will also add a map label of a required inspection stop for the newly completed Mountain Pass JPOE CVEF along I-15 near the California/Nevada border.

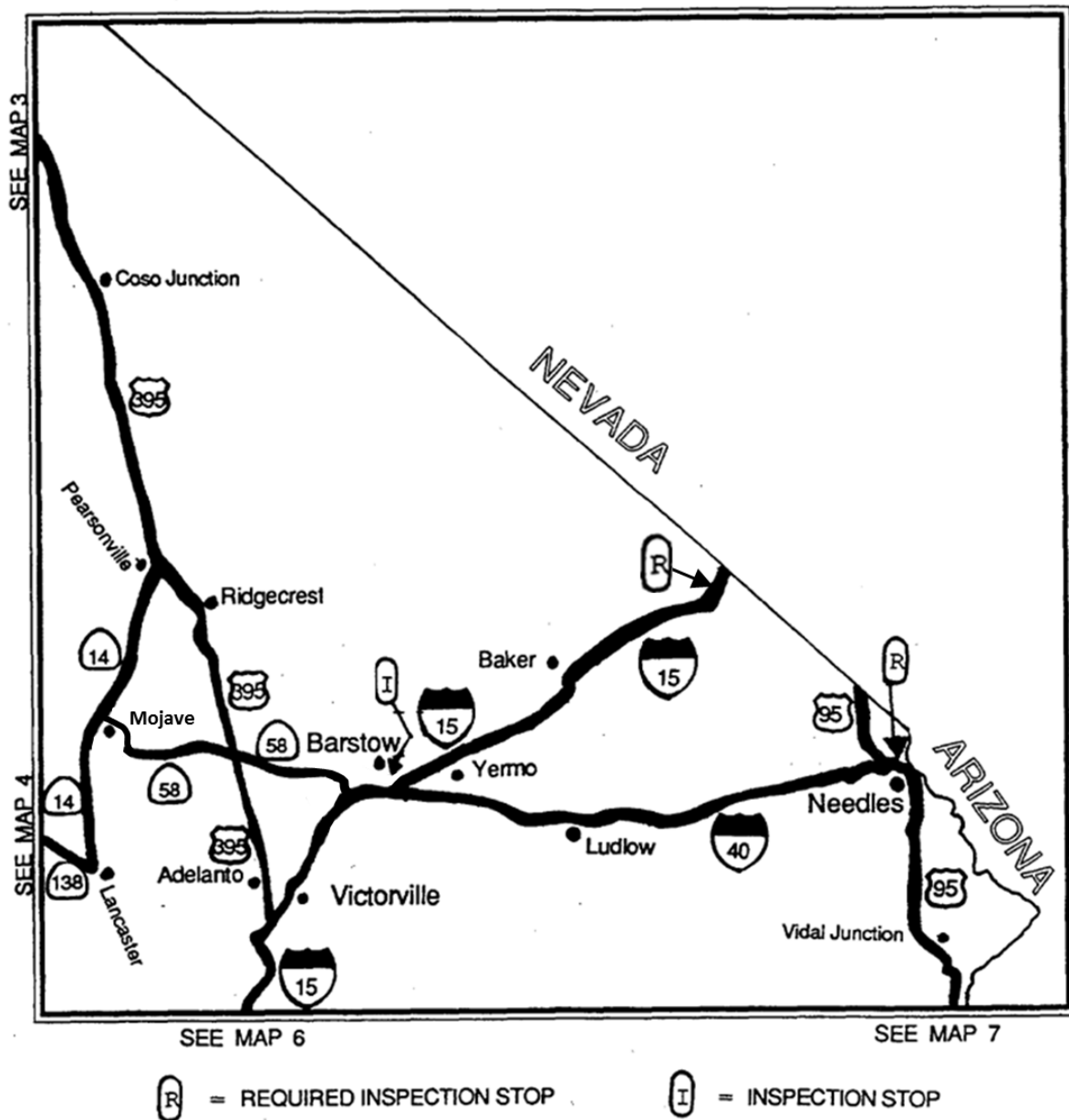


Figure 4: Proposed Map 5 Updating Inhalation Hazards Routes Designated in the Mojave and Barstow Area

STUDIES/RELATED FACTS

The evaluation of possible routes follows the recommended methodologies outlined in the Highway Routing of Hazardous Materials-Guidelines for Applying Criteria (FHWA-HI-97-003) published by the FHWA of the U.S. DOT. The data used for this analysis was obtained from the 2010 census survey conducted by the U.S. CB, the 2012 emergency facility sites composed by the SCEC at the USC, the traffic volume counts compiled by the Caltrans and CSB, the collision incidents collected in CHP's SWITRS, and the highway length and transit time derived from Google Earth and Google Maps. When data is not available for certain segments of local roads, the best estimates on traffic volume counts and/or crash rates are applied. The evaluation was

conducted using a GIS with a seven-mile buffer zone of the routes referenced in the 2016 ERG issued by U.S. DOT's PHMSA. **CONSULTATION WITH OFFICIALS**

The proposed amendments have received concurrence from the CHP's Inland Division, KCFD, BFPD, SBCFD, SFM, and Caltrans.

ALTERNATIVES

Other than the alternatives discussed above, no reasonable alternative considered by the CHP, or otherwise identified and brought to the attention of the CHP, would be more effective in fulfilling the purpose for which the action is proposed, or as effective and less burdensome to affected private persons, than the proposed action. The alternative of making no changes to the existing regulations was rejected because it fails to keep information current in the CCR. Failing to provide updated routes to carriers may increase potential risks of detrimental hazards while transporting inhalation hazards in the Mojave and Barstow-Hinkley areas.

LOCAL MANDATE

These regulations do not impose any new mandates on local agencies or school districts.

ECONOMIC IMPACT ANALYSIS

Creation or Elimination of Jobs

The CHP has made an initial determination that this proposed regulatory action will neither create, nor eliminate, jobs within the State of California because the regulation only removes 27.6 miles and extends 18.0 miles of designated inhalation hazards routes. The transportation of inhalation hazards by commercial vehicles along the discussed routes presents only a very small portion of the total vehicle movement in the state.

Creation of New Business, or Elimination or Expansion of Existing Business

The CHP has not identified any significant adverse impact on the creation of new businesses, or elimination or expansion of existing businesses within the State of California. Businesses involved in the transportation of inhalation hazards will have more consistent and updated information on designated routes in the state. The proposed regulatory action will not create new businesses, or eliminate or expand any existing business by transporting inhalation hazards via the updated routes.

Benefits of the Regulation

This proposed regulatory action will continue to provide a nonmonetary benefit to the protection of the health and welfare of California residents, workers, and the environment. The changes to the application of the regulation are not substantive and bring the regulation in conformance with existing statute. The proposed changes update and clarify safe and efficient routes designated for carriers transporting inhalation hazards, and contribute to transportation safety and public health.

BUSINESS IMPACT TO THE STATE

Based on the economic impact analysis, the CHP has made an initial determination that the proposed regulatory action would have no significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states. The proposed regulatory action updates designated highway routes for commercial vehicle carriers transporting inhalation hazards in California.

FISCAL IMPACT TO THE STATE

The CHP has determined these regulation amendments will result in:

- No significant increased costs for persons or businesses;
- No significant compliance costs for persons or businesses directly affected;
- No discernible adverse impact on the quantity and distribution of goods and services to large and small businesses or the public;
- No impact on the level of employment in the state; and
- No impact on the competitiveness of California to retain businesses.