COLORADO
Department of Transportation
Transportation Systems
Management & Operations

Date: April 29, 2014

To: Transportation Commission

From: Ryan Rice, Director, Division of Transportation Systems Management & Operations

Subject: Response to the Transportation Commission Regarding Closing I-70 West during Peak Periods to Commercial Motor Vehicles

Background
The Transportation Commission requested that CDOT research if the Department has authority to close I-70 West during peak periods to commercial motor vehicles (CMV) as an operational measure to mitigate traffic congestion and improve safety on the heavily-traveled I-70 west corridor. CDOT staff, in coordination with the Attorney General's Office, has reviewed statutes and case law, as well as the practices of the California Department of Transportation (Caltrans) on I-80 at Donner Pass pertaining to this question.

Findings
CDOT has the authority to prohibit CMV during any time periods as a safety measure due to adverse conditions. Any restriction for adverse weather should be narrowly tailored to allow for the shortest amount of time, as reasonable, in order not to burden the vehicles ability to travel and thus not violate the Commerce Clause. Research confirmed that Caltrans does not restrict CMV based on time of day or peak periods and has no FHWA approval to do so. Restricted use and closure of I-80 at Donner Pass to CMV was based entirely on safety during adverse weather conditions. CDOT could request FHWA approval for a permanent peak-period use restriction on CMV; however, it would require a very strong, data based justification for improving safety. The case law that was examined related to providing access and Interstate commerce show that the courts are reluctant to judge in favor of use restrictions. Our research has not found any such use restrictions in place in the country.

Summary
For the winter of 2014-2015, CDOT will study and develop more detailed procedures and criteria for restricting use of I-70 west to any type of vehicle, including CMVs, which create safety hazards during adverse weather conditions. Planning will also focus on improving procedures for chain law implementation and enforcement and other strategies to reduce the impact of CMV and other vehicles on the safety and mobility of traffic on I-70 west.

Applicable Federal Law
- 23 CFR 658.11(d) Deletions and use restrictions. The deletion of, or imposition of use restrictions on, any specific segment of the Interstate-Highway System on the NN, except as otherwise provided in this part, must be approved by FHWA.
- 49 USC 31114 Providing access to NN and terminals and destinations. A state may not enact or enforce a law denying to a CMV reasonable access to the NN and terminals and destinations.
- 23 CFR 658.11 Impact to Interstate commerce. States must show that the burden of truck restrictions is not clearly excessive of the benefits the local governments will experience from the restrictions.

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COLORADO
Department of Transportation
Division of Transportation Development

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DATE: May 15, 2014
TO: Transportation Commission
FROM: Debra Perkins-Smith, DTD Director
RE: Bicycle Friendly State Ranking Update

Purpose

This memo is to share new information regarding Colorado's ranking as the Number 2 Bicycle Friendly State.

Action Requested

None at this time.

Background

In 2013, the League of American Bicyclists (LAB) ranked Colorado as the second most Bicycle Friendly State in the country. CDOT's Transit and Intermodal Committee recently approved five strategies to help Colorado achieve the Number One position. They are:

- Establish a Governor's statewide bicycle advisory committee
- Dedicate funding for the Safe Routes to School program
- Implement AASHTO's US Bike Route System in Colorado
- Add bicycle safety to the State Highway Safety Plan
- Implement Performance Measures for Biking including facility inventory and project costs

Details of each strategy are available in the March Commission packet.

Update

On April 29th, the LAB completed their analysis of 2014 surveys and dropped Colorado's ranking to the Number 6 Bicycle Friendly State (behind Washington, Minnesota, Wisconsin, Delaware and Oregon). Colorado lost points primarily because it did not designate funding for Safe Routes to School. Additionally, it has not yet implemented performance measures such as tracking bicycle mode share and funds spent on bike and ped facilities when they're part of a larger project.

Next Steps

The recommended strategies to moving to Number One are still valid and are further supported by some of the comments. At a future T&I Committee the LAB comments will be discussed to determine if additional strategies should be pursued.

Attachments

None

BICYCLE FRIENDLY STATE

2014 Ranking

Key: Percent of total points available attained by state

80-100%	60-80%	40-60%	20-40%	0-20%

			Points out of 100		Scoring Criteria				
STATE	**2014 Rank**	2013 Rank	**2014 Points**	2013 Points	Legislation & Enforcement	Policies & Programs	Infrastructure & Funding	Education & Encouragement	Evaluation & Planning
Washington	1	1	66.8	66.2					
Minnesota	2	4	62.0	56.6					
Wisconsin	3	8	56.9	52.1					
Delaware	4	5	55.7	53.9					
Oregon	5	3	55.2	57.7					
Colorado	6	2	54.1	60.7					
Maryland	7	11	53.8	50.5					
Utah	8	14	53.72	43.1					
California	9	19	53.68	37.6					
Massachusetts	10	6	53.66	53.7					
Illinois	11	9	53.1	51.9					
New Jersey	12	7	53	53.4					
Maine	13	13	50.6	49.7					
Michigan	14	12	50.1	50					
Arizona	15	10	46.7	51.1					
Ohio	16	32	45.1	28.4					
Vermont	17	23	44.7	36					
Virginia	18	16	41.5	42.7					
Pennsylvania	19	15	41.4	43					
Idaho	20	26	41.1	34.5					
Connecticut	21	18	40	40.9					
Tennessee	22	17	39.7	41.9					
North Carolina	23	28	39.5	33.5					
New Hampshire	24	27	38.7	34					
Iowa	25	21	38.64	37.3					
Georgia	26	24	38.57	35.7					
Rhode Island	27	25	38.5	35.6					
Florida	28	31	35.3	29.4					
New York	29	43	33.9	21.5					
Nevada	30	20	33.8	37.6					
Mississippi	31	36	32.8	26.3					
Louisiana	32	29	32.1	33.3					
Texas	33	22	31	36.2					
Missouri	34	30	30	29.8					
North Dakota	35	50	28.4	7.5					
Wyoming	36	33	28.2	28.1					
Indiana	37	42	27.4	22.6					
Arkansas	38	37	27.1	25.2					
South Dakota	39	46	26.1	18.2					
Hawaii	40	35	26	26.6					
New Mexico	41	48	25.2	15.5					
Oklahoma	42	38	25.1	24.4					
Alaska	43	45	24.5	20.4					
West Virginia	44	44	24	20.4					
Nebraska	45	41	22.23	22.9					
Kansas	46	40	22.16	23					
South Carolina	47	34	22	27.7					
Kentucky	48	47	19.1	16.6					
Montana	49	39	17.9	23.2					
Alabama	50	49	17.4	12.3					

Learn more at bikeleague.org/states

THE DENVER POST

Sit back and relax. This car can handle even tough city traffic all by itself.

Sergey Brin gestures after riding in a driverless car with officials, to a bill signing for driverless cars at Google headquarters in Mountain View, Calif. Eric Risberg/AP

Justin Pritchard,

The Associated Press

Posted Monday Apr. 28, 2014 07:18AM EST

LOS ANGELES (AP) — Google says it has turned a corner in its pursuit of a car that can drive itself.

The tech giant's self-driving cars already can navigate freeways comfortably, albeit with a driver ready to take control. But city driving — with its obstacle course of jaywalkers, bicyclists and blind corners — has been a far greater challenge for the cars' computers.

In a blog entry posted Monday, the project's leader said test cars now can handle thousands of urban situations that would have stumped them a year or two ago.

"We're growing more optimistic that we're heading toward an achievable goal — a vehicle that operates fully without human intervention," project director Chris Urmson wrote.

Urmson's post was the company's first official update since 2012 on progress toward a driverless car, a project within the company's secretive Google X lab.

The company has said its goal is to get the technology to the public by 2017. In initial iterations, human drivers would be expected to take control if the computer fails. The promise is that, eventually, there would be no need for a driver. Passengers could read, daydream, even sleep — or work — while the car drives.

Google maintains that computers will one day drive far more safely than humans, and part of the company's pitch is that robot cars can substantially reduce traffic fatalities.

The basics already are in place. The task for Google — and traditional carmakers, which also are testing driverless cars — is perfecting technology strapped onto its fleet of about two dozen Lexus RX450H SUVs.

Sensors including radar and lasers create 3D maps of a self-driving car's surroundings in real time, while Google's software sorts objects into four categories: moving vehicles, pedestrians, cyclists and static things such as signs, curbs and parked cars.

Initially, those plots were fairly crude. A gaggle of pedestrians on a street corner registered as a single person. Now, the technology can distinguish individuals, according to Google spokeswoman Courtney Hohne, as well as solve other riddles such as construction zones and the likely movements of people riding bicycles.

To deal with cyclists, engineers initially programmed the software to look for hand gestures that indicate an upcoming turn. Then they realized that most cyclists don't use standard gestures — and still others weave down a road the wrong way.

So engineers have taught the software to predict the behavior of cyclists based on thousands of encounters during the approximately 10,000 miles the cars have driven autonomously on city streets, Hohne said. The software projects a cyclist's likely movements and plots the car's path accordingly — then reacts if something unexpected happens.

"A mile of city driving is much more complex than a mile of freeway driving, with hundreds of different objects moving according to different rules of the road in a small area," Urmson wrote.

Before recent breakthroughs, Google had contemplated mapping all the world's stop signs. Now the technology can read stop signs, including those held in the hands of school crossing guards, Hohne said.

While the car knows to stop, just when to start again is still a challenge, partly because the cars are programmed to drive defensively. At a four-way stop, Google's cars have been known to wait in place as people driving in other directions edge out into the intersection — or roll through.

The cars still need work on other predictably common tasks. Among them, understanding the gestures that drivers give one another to signal it's OK to merge or change lanes, turning right on red and driving in rain or fog (which requires more sophisticated sensors).

And when will these and other problems be solved?

"You can count on one hand the number of years until people, ordinary people, can experience this," company co-founder Sergey Brin said in September 2012. He made the remarks at a ceremony where California Gov. Jerry Brown signed legislation legalizing the cars on public roads in the state.

To date, Google's cars have gone about 700,000 miles in self-driving mode, the vast majority on freeways, the company said.

California's Department of Motor Vehicles is in the process of writing regulations to implement that law. Nevada, Florida, Michigan and Washington, D.C., also have written driverless car laws.

Google has not said how it plans to market the technology. Options include collaborating with major carmakers or giving away the software, as the company did with its Android operating system. While Google has the balance sheet to invest in making cars, that likelihood is remote.

Traditional automakers also are developing driverless cars. Renault-Nissan CEO Carlos Ghosn said he hopes to deliver a model to the public by 2020.

MINNESOTA DAILY

We’re on the road to a driverless future

Autonomous vehicles will be commonplace in our lifetime, and we need to plan ahead.

By

Chris Iverson

April 28, 2014

If I still have any loyal readers out there, you are probably getting tired of listening to me talk about non-motorized transportation. I apologize for blabbering about the wondrous world of movement, but I feel like shifting gears for a little while — pun intended. At this point, you know I love transit, biking and walking as viable alternatives to driving. But in rural Minnesota and a majority of the Twin Cities suburbs, it’s pretty hard to get around without having a vehicle. If you do have that magical mobile machine, any destination is reasonably accessible. Taking a drive up north to the cabin by the lake is an easy motion. Want to take that same trip on a bike? Good luck.

In an opposite light, Minneapolis has a myriad of truly viable alternative transportation options, ranging from painted bike lanes to new peer-to-peer car sharing services like Lyft and Uber. At the same time, many places within the city are not well-equipped for vehicles, as battling for parking spaces seems to raise tensions heavier than those seen in the Ukraine nowadays.

Transportation needs an equalizing force, a mode that takes the best of both worlds, provides convenience for riders and increases road safety overall.

I am talking, of course, about autonomous, driverless vehicles.

How it works

Fully autonomous cars are exactly what they sound like: self-driving. These vehicles would be able to drive without a true driver, eliminating all potential human error in the process. Currently, 90 percent of car accidents stem from human error. Essentially, these automobiles would act as taxis, escorting riders from point A to point B, all without the burden of dealing with the taxi driver. In the long term, driverless cars would revolutionize the way we think about and act around roads.

What sounds like a sci-fi fantasy is, surprisingly, coming soon. In 2010, an Audi autonomous TTS with driverless capabilities drove to the top of Pike’s Peak in Colorado. That same year, a fleet of driverless vans accomplished a modern-day version of Marco Polo’s excursion from Italy to China, driving 8,000 miles without human assistance. Google is testing driverless vehicles, and in 2012 its fleet successfully drove more than 300,000 miles without one accident. Google plans to release these vehicles to the market in 2018, and Nissan, Mercedes-Benz, Renault and other car companies are releasing their own versions in 2020.

Driverless car deployment is now a matter of when, not if, and government entities need to be prepared. This vehicle turnover will affect not only roads, but land use.

“You probably don’t need parking garages anymore once you have driverless cars,” Chandra Bhat, director of the Center for Transportation Research at the University of Texas, told the Tampa Bay Times. “You’d just call an autonomous taxi to pick you up in the morning and return you in the afternoon. Somewhere from 20 to 80 percent of urban land area could be repurposed.”

Officials in U.S. states and cities need to be prepared for the next transportation revolution. Technology limitations and social acceptance barriers will likely elongate the majority of autonomous vehicle deployment periods, giving time for government officials to adjust their policies as trends form. However, in order to capitalize on autonomous vehicles’ full potential, we will need to establish proper infrastructure to see the fruition of these modern technologies. Minneapolis can place itself in a favorable position if it adjusts infrastructure to accommodate autonomous vehicles.

What to change

Minneapolis should, first and foremost, compose and pass legislation allowing autonomous movements within city limits. The Minneapolis City Council should establish the city as an autonomous pioneer. More driverless vehicles means fewer conventional vehicles, which will lead to fewer accidents and less burdensome traffic. The precise nature of driverless cars means more roadway space for bikes and pedestrians.

Minneapolis should also encourage its citizens to utilize autonomous car-sharing companies rather than car ownership, which will reduce parking demand over time. This could render parking spaces obsolete within urban areas, opening up the underutilized land for development and an increased tax base.

The city should demonstrate autonomous acceptance by adding driverless vehicles to its fleet. Minneapolis police could deploy autonomous cop vehicles, which would provide a roving, unmanned patrol in areas with high crime rates. The city could release unmanned snow plows with manned vehicles during storms and help maintain road conditions.

A world with driverless cars would be radically different than the world we see today. If we implemented them correctly, driverless vehicles would enhance urban forms and make roads safer for all users. Local, state and national government officials need to establish a foundation for driverless cars to thrive on sooner rather than later.