

## The Safety-Related Impacts of the Legalization of Recreational Marijuana – Part A

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In addition to the economic and health impacts of marijuana legalization (previous articles at [http://www.uccseconomicforum.com/publications\\_media.shtml](http://www.uccseconomicforum.com/publications_media.shtml)), another important dimension to consider is the safety impacts. This would include traffic-related fatalities and other serious traffic incidents, seizures (or confiscation) of illegal or over-the-limit marijuana product, diversion of Colorado marijuana to other states where it is illegal, property and violent crime rates, and homelessness. Although not an exhaustive list of safety-related metrics, these are good indicators of how our broader community is being affected by the legalization of recreational marijuana. This article will cover the traffic-related metrics and the next and final article will discuss the other safety-related metrics.

Much like the other dimensions related to tracking the effects of legalization, it is important to note that safety data is somewhat compromised by two factors. One, there is typically at least a one to two-year lag in the availability of safety-related data, and recreational marijuana only became legal and available for retail sale in 2014. Two, given that recreational marijuana was previously illegal, our state did not have a robust methodology for systematically collecting information on marijuana-related crime nor methods for testing drivers for tetrahydrocannabinol, or THC, the psychoactive component of marijuana. Nonetheless, some meaningful information is beginning to emerge.

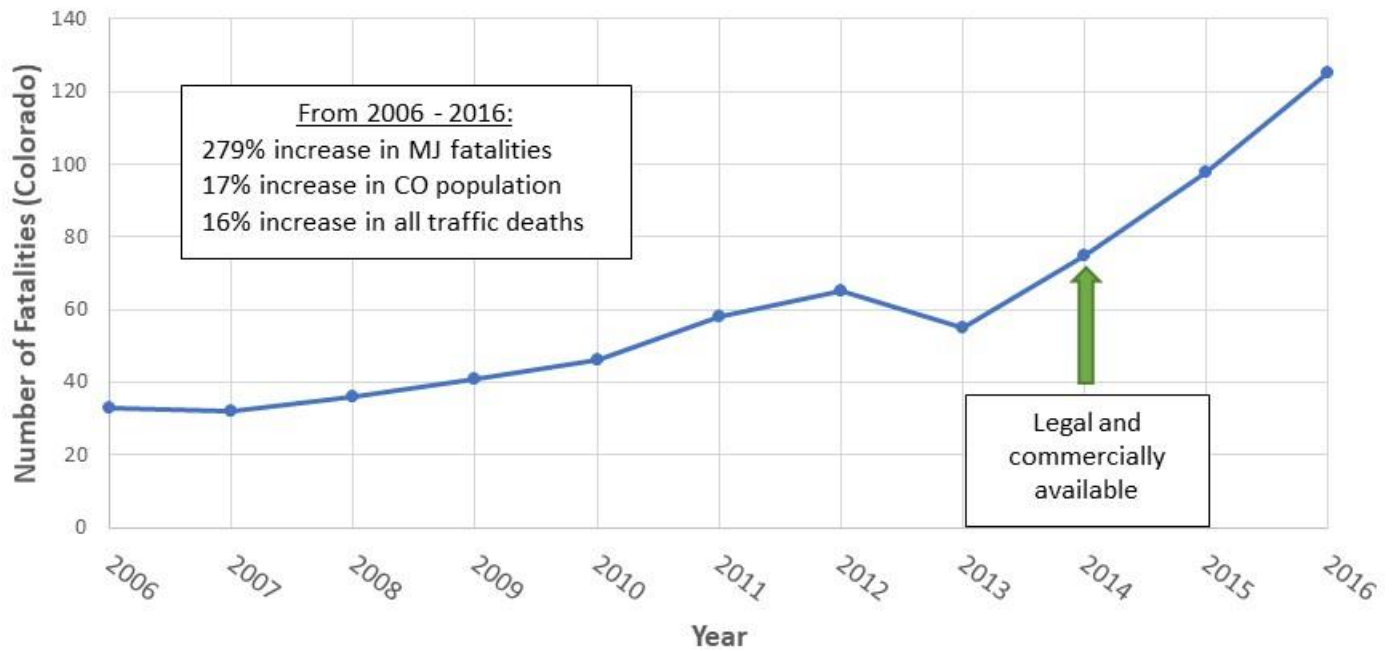
To begin, measuring drivers for THC is challenging because its effects peak very soon after consumption, then begin to fall rather quickly although lower levels of THC stay in the system for quite a while. By the time a crash has happened and a person gets tested, THC levels may be dramatically lower than when the crash occurred. Likewise, a low level of THC can remain in someone's system many hours after consumption complicating a true measure of impairment levels.<sup>1</sup> Further clouding the issue is that marijuana-impaired drivers are often also drinking alcohol. Testing for a DUI is easier and more mainstream, so many officers do not go beyond a positive DUI reading even if they suspect marijuana use. It is noteworthy that 36 percent of all drivers in Colorado involved in a fatal car crash who did test positive for THC had also consumed alcohol (CDOT). As discussed in an earlier article, the cross sensitization of alcohol and marijuana makes the effects of both together greater than the sum of each individually.

The graph on the next page shows the increase in marijuana-related traffic deaths in the past 10 years in Colorado (up 279%). In terms of the proportion of total traffic-related fatalities, in 2009, marijuana impairment was involved in 9% of fatalities; by 2016, 21% of fatalities involved marijuana impairment. This data may seriously underrepresent the attribution of marijuana impairment in traffic deaths, however, because only 44% of cadavers from traffic deaths have toxicology testing for marijuana. It is noteworthy that also in the last 10 years, population has increased 17 percent, and all traffic deaths increased 16 percent. If we examine DUIDs (driving under the influence of drugs), but not fatalities, the number of positive toxicology screens for marijuana rose 63% in the pre-legalization period (2009-2012) compared to the post-legalization period (2013-2016). Out of 1,004 DUIDs in 2016, 76 percent involved marijuana and another substance, and 38 percent involved marijuana only.

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<sup>1</sup> Currently, the legal threshold is 5 nanograms per milliliter of whole blood.

**Graph 1. Traffic Deaths Where Driver Tested Positive for Marijuana (MJ)**



Sources: Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA), National Highway Traffic Safety Administration (NHTSA), Colorado Department of Transportation (CDOT)

A National Highway Traffic Safety Administration (NHTSA) Report of 2010 estimated that the total economic costs for a vehicular fatality were \$1.4 million including property damage, medical costs, insurance costs, lost productivity and other factors. At 125 traffic fatalities in 2016 in the state in which we knew about a positive marijuana toxicology report, the total cost would be approximately \$175 million. The estimated cost of a DUID in the same 2010 NHTSA report was \$10,270. If we conservatively use that dated amount and apply it to the number of *known* DUIDs in 2016, the cost in Colorado was approximately \$7.9 million. If we juxtapose these two traffic-related costs to collected marijuana taxes, the costs outweigh the benefits by several million dollars (see table).

Colorado Marijuana Taxes, 2016	\$ 179,619,617
Estimated Costs of Marijuana Vehicular Fatalities & DUIDs, 2016	\$ 182,741,590
Sources: Colorado Department of Revenue; NHTSA; RMHIDTA	

These rough estimations do not consider the fatalities or other incidents that are marijuana related but that are not captured via toxicology testing. Nor does this one estimate encapsulate the other, various costs associated with safety or health-related impacts. What this data does show us is the importance of comprehensively examining both the revenue and cost implications of legalization. Although we are now almost four full years into (recreational) legalization, and it is not likely that the legal status will change, we can use the information to inform guidelines and mandatory regulations that hopefully curtail the negative ramifications now evident in the emerging data.

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Next month's article will be the final one in this series, and it will cover other safety-related impacts.