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TO: Members of the Zoning Board of Appeals
FROM: Alex Mello, Planner
DATE: February 27, 2017
RE: 240 Elm Street (ZBA 2016-143) and 245-249 Elm Street (ZBA 2017-02)

The two medical marijuana dispensaries proposed in Davis Square have generated support and opposition amongst neighborhood stakeholders. There have been a lot of public testimony and comment letters that your Board has received that support the idea of medical marijuana but oppose the possibility of two dispensaries being located across the street from one another in Davis Square. I have spoken to planners of four different cities throughout the country where there are at least two dispensaries either on the same block to see if they have experienced negative impacts that are feared by neighborhood stakeholders. Below is a summary of my conversations with those other cities.

Ann Arbor, MI: Has 11 medical marijuana dispensaries that have lasted longer than six months. There are two MM dispensaries located on the opposite sides of the same block. They are actually all operating illegally and some have been raided and quickly shut down within six months because their owner/operators had criminal ties. There would not be a problem in Massachusetts relative to criminal ties of operators because the state vetting process by DPH in Massachusetts is extensive, and designed to address those issues prior to permitting a dispensary from opening.

The 11 medical marijuana dispensaries that have operated longer than six months have not caused any detrimental impacts on the neighborhood nor have there been any complaints. The City of Ann Arbor will be drafting an ordinance this year and does not see the fact that there are two medical marijuana dispensaries located so closely together as an issue that needs to be addressed in their future ordinance.

Edgewater, CO: Has two medical marijuana dispensaries a few storefronts away from each other and in the three years that the planner has been there she has not heard of any issues resulting from having two dispensaries located so closely together.

Lansing, MI: Has over 70 medical marijuana dispensaries and has not had any criminal issues with any of them particularly those located close together on E. Michigan Ave.

Denver, CO: Has two medical marijuana dispensaries on Wazee Street that are a block away from one another and even some neighborhoods where there are up to 5 in a particular neighborhood. They haven't had any issues with loitering or delinquent activity other than

isolated robbery attempts in some of their already high-crime neighborhoods. They are essentially treating medical marijuana dispensaries the same as liquor stores and regulate them through a licensing process as opposed to zoning. Denver has no data proving an increase or decrease in crime or neighborhood complaints being driven by high concentrations of marijuana storefronts.

Your board has also received comments regarding the effects of medical marijuana on crime and impaired driving. Attached to this memorandum is an article from Journalist Resource, which is a resource run by the Kennedy School at Harvard. The article that sums up research on different effects of medical marijuana from a range of institutions.

Please let me know if I can be of further assistance.

Respectfully,
Alex

Journalist's Resource

Research on today's news topics

DRUG POLICY, HEALTH CARE, HOME, INEQUALITY, PUBLIC HEALTH

Marijuana legalization: Research review on crime and impaired driving

Tags: [alcohol](#), [crime](#), [drunk driving](#), [medical marijuana](#), [suicide](#)



(Pixabay/public domain)

In November 2016, voters in at least nine states will decide whether to legalize marijuana for medical or recreational use, according to a [running tally](#) by *The Cannabist*, a project of *The Denver Post*. Recreational use of the drug is already permitted in a handful of states, and can be prescribed by doctors in over half, though it remains banned under federal law.

Reports on the issue suggest voters are concerned: does marijuana use affect crime rates? A growing body of research addresses the question, tackling arguments used often by opponents and advocates of marijuana liberalization.

Opponents often claim that people who use marijuana are more likely to move on to harder drugs — the “gateway drug” theory — and that users of hard drugs engage in predatory crimes to feed their habits. Critics of legalization also argue that increasing accessibility means more youth will smoke or eat weed, that marijuana shops and growers are attractive targets for criminals, that marijuana use encourages alcohol abuse, and that stoned drivers are a public menace.

On the flip side, advocates for legalization argue it will undercut the black market, which is associated with criminals and violent elements. Crime may fall as police resources are reallocated to other pressing issues, they argue. Researchers have found, moreover, that some people substitute marijuana for alcohol, which means they drink less. And legalization of marijuana may reduce racial disparity in drug arrests. Black men, according to federal data collated by the [American Civil Liberties Union](#) and widely cited by scholars, are almost four times more likely to be arrested for marijuana possession than whites, even though both groups use the drug at roughly the same rate.

Most research on the link between marijuana and crime finds that medical marijuana laws (often abbreviated as MML) cause a general uptick in the use and availability of marijuana — beyond the patients who are prescribed the drug. “The legalization of marijuana for medicinal purposes approaches de facto legalization of marijuana for recreational purposes,” [write](#) D. Mark Anderson of Montana State University and Daniel I. Rees of the University of Colorado Denver in the

Journal of Policy Analysis and Management. By examining pre- and post-legalization in these MML states, they can “make predictions about what will happen in” states that legalize marijuana for recreational use.

Impact on crime

Several studies have found reductions in crime after marijuana is legalized for medical use, demonstrating a relationship, but not necessarily causation.

Showing a “clear connection between medicinal use and reductions in non-drug crime,” Arthur Huber III, Rebecca Newman and Daniel LaFave of Colby College [link](#) medical marijuana to a 4 percent to 12 percent reduction in property crimes such as theft and burglaries. Crime has fallen across the United States in recent years, but in states with MML it has fallen approximately 5 percent more. Contrariwise, Huber and his colleagues find that depenalization — lowering penalties and, thus, the risk of possession — is linked to an increase in such crimes by 6 percent to 11 percent. That effect is similar to the amount crime would rise during an uptick in unemployment of 2 percent to 3 percent.

In widely cited [research](#), Robert G. Morris of the University of Texas and colleagues see crime fall in every state that has introduced MML. Using FBI data on seven types of crime across states with and without MML, they dismiss concerns about rising crime.

“MML is not predictive of higher crime rates and may be related to reductions in rates of homicide and assault,” Morris and colleagues write in the study, published in *PLoS One* in 2014. That may be because people seem to use alcohol less when they have access to pot: “Given the relationship between alcohol and violent crime, it may turn out that substituting marijuana for alcohol leads to minor reductions in violent crimes.”

Moreover, contrary to concerns that marijuana dispensaries become magnets for crime, the shops may diminish crime in their immediate vicinity because of their heightened security, cameras and lights.

Economists Edward M. Shepard and Paul R. Blackley of Le Moyne College [find](#) that medical marijuana is associated with significant drops in violent crime. Looking at crime data from 11 states in the west, seven of which had medical marijuana laws before 2009, they see “no evidence of significant, negative spillover effects from MMLs on crime.” Instead, they suspect a fall in the involvement of criminal organizations after marijuana is legalized for medical use and conclude, “MMLs likely produce net benefits for society.”

Looking at crime data before and after the depenalization of marijuana in the United Kingdom in 2004, Nils Braakmann and Simon Jones of Newcastle University [suggest](#) most types of crime, risky behavior and violence fall. But they observe a 5 percent to 7 percent increase in property crimes among 15- to 17-year-olds.

More/less alcohol consumption

Katarina Guttmannova of the University of Washington and colleagues examined 15 studies on the relationship between alcohol and marijuana use. Their analysis [indicates mixed results](#), suggesting both substitution — when marijuana is more readily available, people use it and drink less — and complementation — people drink more when they use marijuana.

Substitution would have positive public health implications, assuming, as some [researchers do](#), that alcohol is a more destructive drug with higher costs for society.

Driving under the influence

Alcohol accounts for over 30 percent of motor-vehicle fatalities in the U.S. each year — almost 10,000 deaths — according to the [U.S. Centers for Disease Control and Prevention](#).

In the first year after a medical marijuana law comes into effect, traffic fatalities decrease between 8 percent and 11 percent, according to [research](#) published in 2013 in *The Journal of Law & Economics*: “The impact of legalization on traffic fatalities involving alcohol is larger and estimated with more precision than its impact on traffic fatalities that do not involve alcohol. Legalization is also associated with sharp decreases in the price of marijuana and alcohol consumption, which suggests that marijuana and alcohol are substitutes.”

In their *Journal of Policy Analysis and Management* paper, Anderson and Rees [describe](#) the relative dangers of driving while intoxicated or stoned: “While driving under the influence of marijuana is associated with a twofold increase in the risk of being involved in a collision, driving with a blood alcohol concentration (BAC) of 0.08 or greater is associated with a 4- to 27-fold increase in this same risk.” The active ingredient in marijuana, tetrahydrocannabinol (THC), impairs driving ability, but users tend to overcompensate and drive slower, whereas alcohol consumers tend to drive faster and take more risks, they write.

Huber and his colleagues at Colby College also [chart](#) a fall in DUIs in states with MML laws.

A team of researchers at Stanford University is developing a “potalyzer” to detect THC molecules in drivers’ saliva. The portable test could produce results in three minutes, they [reported](#) in *Analytical Chemistry* in July 2016.

More people will use weed

There is growing [evidence](#) that as marijuana is legalized, more people use it. Legal medical marijuana increases both the supply of the drug as well as demand.

Braakmann and Jones [see](#) a 4.6 percent increase in cannabis consumption among 15- to 17-year-olds after depenalization, which they suspect may be partially an increase in the number of first-time users. They do not see an increase among older groups.

Relatedly, a [2014 paper](#) in the *American Journal of Public Health* finds a negative relationship between marijuana and suicide. In states with MML, legalization is associated with a 10.8 percent reduction in the suicide rate of men between ages 20 and 39 — another indication of increased usage, and possibly of decreased alcohol consumption.

Gateway drug

Are teenagers who use pot more likely to begin using harder drugs like cocaine and heroin? Research is largely inconclusive and the issue is addressed in many of the studies listed above.

A related question is how MML affect the use and abuse of opioids for pain. Writing in *JAMA Internal Medicine*, Marcus Bachhuber of the Philadelphia Veterans Affairs Medical Center and colleagues [find](#) “medical cannabis laws are associated with significantly lower state-level opioid overdose mortality rates.” Patients seem to be using these as substitutes, and marijuana is far less addictive and dangerous than drugs derived from the opium poppy. A [2016 study](#) by Columbia University researchers confirmed those findings and observed that states with MML had fewer opioid-related car accidents.

Racial justice

Significant research has shown that young black men are arrested at a much higher rate than white men for the same marijuana-related crimes.

Economists Wesley Austin of the University of Louisiana and Rand W. Ressler of Georgia Southern University [explore](#) the relationship between marijuana crimes and arrest in a 2016 paper for *Applied Economics Letters*. They find arrest much more likely if the offender is poor and black, compared with perpetrators who are either poor or black or poor and a member of another race.

Racial profiling is the topic of a [2016 paper](#) by Frank R. Baumgartner of the University of North Carolina at Chapel Hill and colleagues. They discover black men far more likely than white men to be searched during traffic stops, yet less likely to be found with contraband. "This discrepancy points strongly toward racial bias in the policing of [North Carolina] motorways," where police use their discretion to decide if a search is warranted. "Blacks in North Carolina appear to have good reasons to be mistrustful of the police, and that these trends appear to be growing over time."

Related research:

A 2016 paper [profiled](#) by Journalist's Resource finds the U.S. could reap up to \$12 billion in new tax revenues by regulating recreational marijuana. It also finds that access to marijuana is associated with greater usage.

The number of American cannabis users is rising. According to an [August 2016 Gallup Poll](#), 13 percent of Americans say they use the drug, up from 7 percent in 2007. Slightly older [data](#) from the U.S. Department of Health and Human Services shows that over 22 million Americans aged 12 or older have used marijuana in the past month. That is 8.4 percent of the population.

Bloomberg Businessweek [estimates](#) that edible weed may have made up half the \$5.4 billion in legal marijuana sales in the U.S. in 2015.

The National Institutes of Health (NIH) publishes [research](#) on the health impact of cannabis consumption.

According to the [Marijuana Policy Project](#), an advocacy group, there are over 2 million marijuana patients in the U.S.

[CannabisWire.com](#) and *High Times* magazine are among the news outlets that cover the growing legal marijuana business.

Citations

"Cannabis Control and Crime: Medicinal Use, Depenalization and the War on Drugs"

Huber III, Arthur; Newman, Rebecca; LaFave, Daniel. *The B.E. Journal of Economic Analysis & Policy*, 2016. doi: 10.1515/bejeap-2015-0167.

Abstract: "To date, 27 states and the District of Columbia have passed laws easing marijuana control. This paper examines the relationship between the legalization of medical marijuana, depenalization of possession, and the incidence of non-drug crime. Using state panel data from 1970 to 2012, results show evidence of 4-12 percent reductions in robberies, larcenies, and burglaries due to the legalization of medical marijuana, but that depenalization has little effect and may instead increase crime rates. These effects are supported by null results for crimes unrelated to the cannabis market and are consistent with the supply-side effects of medicinal use that are absent from depenalization laws as well as existing evidence on the substitution between marijuana and alcohol. The findings contribute new evidence to the complex debate surrounding marijuana policy and the war on drugs."

"Cannabis Depenalisation, Drug Consumption and Crime – Evidence from the 2004 Cannabis Declassification in the UK"

Braakmann, Nils; Jones, Simon. *Social Science & Medicine*, 2014. doi: 10.1016/j.socscimed.2014.06.003.

Abstract: "This paper investigates the link between cannabis depenalization and crime using individual-level panel data for England and Wales from 2003 to 2006. We exploit the declassification of cannabis in the UK in 2004 as a natural experiment. Specifically, we use the fact that the declassification changed expected punishments differently in various age groups due to thresholds in British criminal law and employ a difference-in-differences type design using data from the longitudinal version of the Offending, Crime and Justice Survey. Our findings suggest essentially no increases in either cannabis consumption, consumption of other drugs, crime and other forms of risky behavior."

"The Effect of Medical Marijuana Laws on Crime: Evidence from State Panel Data, 1990-2006"

Morris, Robert G.; et al. *PLoS ONE*, 2014. doi: 10.1371/journal.pone.0092816.

Abstract: "Background: Debate has surrounded the legalization of marijuana for medical purposes for decades. Some have argued medical marijuana legalization (MML) poses a threat to public health and safety, perhaps also affecting crime rates. In recent years, some U.S. states have legalized marijuana for medical purposes, reigniting political and public interest in the impact of marijuana legalization on a range of outcomes. Methods: Relying on U.S. state panel data, we analyzed the association between state MML and state crime rates for all Part I offenses collected by the FBI. Findings: Results did not indicate a crime exacerbating effect of MML on any of the Part I offenses. Alternatively, state MML may be correlated with a reduction in homicide and assault rates, net of other covariates. Conclusions: These findings run counter to arguments suggesting the legalization of marijuana for medical purposes poses a danger to public health in terms of exposure to violent crime and property crimes."

"The Legalization of Recreational Marijuana: How Likely Is the Worst-Case Scenario?"

Anderson, D. Mark; Rees, Daniel I. *Journal of Policy Analysis and Management*, 2013. doi: 10.1002/pam.21727.

Summary: This literature review looks at the concerns of those opposing legalization. It concludes that legal recreational marijuana is a net benefit for society because it is associated with a reduction in alcohol-related traffic deaths and alcohol use more generally, and thus also a reduction in crime. The usage of marijuana will increase, though, the authors expect.

"Medical Marijuana and Crime: Further Evidence From the Western States"

Shepard, Edward M.; Blackley, Paul R. *Journal of Drug Issues*, 2016. doi:[10.1177/0022042615623983](https://doi.org/10.1177/0022042615623983).

Abstract: "State medical marijuana programs have proliferated in the United States in recent years. Marijuana sales are now estimated in the billions of dollars per year with over two million patients, yet it remains unlawful under federal law, and there is limited and conflicting evidence about potential effects on society. We present new evidence about potential effects on crime by estimating an economic crime model following the general approach developed by Becker. Data

from 11 states in the western United States are used to estimate the model and test hypotheses about potential effects on rates of violent and property crime. Fixed effects methods are applied to control for state-specific factors, with adjustments for first-order autocorrelation and cross-section heteroskedasticity. There is no evidence of negative spillover effects from medical marijuana laws (MMLs) on violent or property crime. Instead, we find significant drops in rates of violent crime associated with state MMLs."

"Impacts of Changing Marijuana Policies on Alcohol Use in the United States"

Katarina Guttmannova; et al. *Alcoholism: Clinical and Experimental Research*, 2015. doi: 10.1111/acer.12942.

Abstract: "Results: The extant literature provides some evidence for both substitution (i.e., more liberal marijuana policies related to less alcohol use as marijuana becomes a substitute) and complementary (i.e., more liberal marijuana policies related to increases in both marijuana and alcohol use) relationships in the context of liberalization of marijuana policies in the United States. Conclusions: Impact of more liberal marijuana policies on alcohol use is complex, and likely depends on specific aspects of policy implementation, including how long the policy has been in place. Furthermore, evaluation of marijuana policy effects on alcohol use may be sensitive to the age group studied and the margin of alcohol use examined. Design of policy evaluation research requires careful consideration of these issues."

"A Micro-Temporal Geospatial Analysis of Medical Marijuana Dispensaries and Crime in Long Beach, California"

Freisthler, Bridget; et al. *Addiction*, 2016. doi: 10.1111/add.13301.

Abstract: "Aims: To determine whether the density of marijuana dispensaries in California, USA, in 2012-13 was related to violent and property crimes, both locally and in adjacent areas, during a time in which local law enforcement conducted operations to reduce the number of storefront medical marijuana dispensaries. Design: Data on locations of crimes and medical marijuana dispensaries as well as other covariates were collected for a sample of 333 Census block groups. [...] Findings: After adjustment for covariates, density of medical marijuana dispensaries was unrelated to property and violent crimes in local areas but related positively to crime in spatially adjacent areas [incident rate ratio (IRR) = 1.0248, CI (1.0097, 1.0402) for violent crime, IRR = 1.0169, CI (1.0071, 1.0268) for property crime. Conclusions: Using law enforcement to reduce medical marijuana dispensaries in California appears to have reduced crime in residential areas near to, but not in, these locations."

"Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010"

Bachhuber, Marcus A.; et al. *JAMA Internal Medicine*, 2014. doi: 10.1001/jamainternmed.2014.4005.

Conclusions and Relevance: "Medical cannabis laws are associated with significantly lower state-level opioid overdose mortality rates. Further investigation is required to determine how medical cannabis laws may interact with policies aimed at preventing opioid analgesic overdose."

"Medical Marijuana Laws, Traffic Fatalities, and Alcohol Consumption"

Anderson, D. Mark; Hansen, Benjamin; Rees, Daniel I. *The Journal of Law & Economics*, 2013. doi: 10.1086/668812.

Abstract: "To date, 19 states have passed medical marijuana laws, yet very little is known about their effects. The current study examines the relationship between the legalization of medical marijuana and traffic fatalities, the leading cause of death among Americans ages 5-34. The first full year after coming into effect, legalization is associated with an 8-11 percent decrease in traffic fatalities. The impact of legalization on traffic fatalities involving alcohol is larger and estimated with more precision than its impact on traffic fatalities that do not involve alcohol. Legalization is also associated with sharp decreases in the price of marijuana and alcohol consumption, which suggests that marijuana and alcohol are substitutes. Because alternative mechanisms cannot be ruled out, the negative relationship between legalization and alcohol-related traffic fatalities does not necessarily imply that driving under the influence of marijuana is safer than driving under the influence of alcohol."

"Medical Marijuana Laws and Suicides by Gender and Age"

Anderson, D. Mark; Rees, Daniel I.; Sabia, Joseph J. *American Journal of Public Health*, 2014. doi: 10.2105/AJPH.2013.301612.

Conclusions: "Suicides among men aged 20 through 39 years fell after medical marijuana legalization compared with those in states that did not legalize. The negative relationship between legalization and suicides among young men is consistent with the hypothesis that marijuana can be used to cope with stressful life events. However, this relationship may be explained by alcohol consumption. The mechanism through which legalizing medical marijuana reduces suicides among young men remains a topic for future study."

"Who Gets Arrested for Marijuana Use? The Perils of Being Poor and Black"

Austin, Wesley; Ressler, Rand W. *Applied Economics Letters*, 2016. doi: 10.1080/13504851.2016.1178838.

Abstract: "We explore the relationship between income, race and the probability of being arrested. Our data set is comprised of individuals who have all violated federal marijuana laws, some of whom have been arrested. We reason that the cost of arresting a poor individual with diminished social status is lower. Our empiricism reveals that the probability of arrest is higher when the law breaker is poor and African American."

"Targeting Young Men of Color for Search and Arrest During Traffic Stops: Evidence from North Carolina, 2002–2013"

Baumgartner, Frank R.; et al. *Politics, Groups, and Identities*, 2016. doi: 10.1080/21565503.2016.1160413.

Abstract: "North Carolina mandated the first collection of demographic data on all traffic stops during a surge of attention to the phenomenon of 'driving while black' in the late 1990s. Based on analysis of over 18 million traffic stops, we show dramatic disparities in the rates at which black drivers, particularly young males, are searched and arrested as compared to similarly situated whites, women, or older drivers. Further, the degree of racial disparity is growing over time. Finally, the rate at which searches lead to the discovery of contraband is consistently lower

for blacks than for whites, providing strong evidence that the empirical disparities we uncover are in fact evidence of racial bias. The findings are robust to a variety of statistical specifications and consistent with findings in other jurisdictions.”

Keywords: Cannabis, medical marijuana laws, recreational marijuana, crime, anti-social behavior, gateway theory, risk-taking, legalization, weed, pot, dope, edibles

Writer: [David Trilling](#) | Last updated: September 23, 2016

We welcome feedback. Please contact us [here](#).