

Running head: SUBSTANCE ABUSE POLICY ADDRESSING LEGALIZED MARIJUANA
USE

Substance Abuse Policy Addressing the Off-Duty Use of Legalized Recreational Marijuana

Stuart E. Mills

Larkspur Fire Protection District, Larkspur, Colorado

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, idea, expression, or writings of another.

Signed: _____

Abstract

The problem was the Larkspur Fire Protection District (LFPD) did not have a substance abuse policy which adequately addressed the use of legalized marijuana by off-duty employees. The purpose of this descriptive applied research project was to determine the changes needed for the LFPD substance abuse policy to adequately address the use of legalized marijuana by off-duty employees. The three research questions were: a) How does a given group of agencies' leadership personnel view the potential performance impact on employees who may use marijuana while off-duty, b) How does a given group of agencies' leadership personnel view the potential health impact on employees who may use marijuana while off-duty, and c) How does a given group of agencies' substance abuse policies address the potential off-duty use of marijuana by employees? The first procedure consisted of the distribution of a questionnaire to leadership personnel of emergency service organizations nationwide. The second procedure consisted of conducting personal interviews with fire service leadership personnel in states with recreational marijuana legalization and a federal attorney attached to the United States Drug Enforcement Administration. Research results indicated the LFPD should amend its policies to effectively mitigate the potential negative impacts resulting from off-duty marijuana use by employees. The first recommendation was that LFPD should develop and adopt a standalone substance abuse policy which clearly outlines the District's stance on employee marijuana use and all other potential substances of abuse. The second recommendation was that the LFPD should develop and adopt a standalone drug testing policy. The third recommendation was that the LFPD should develop and adopt a stand-alone training and education policy which focuses on the District's substance abuse and drug testing policies, substance abuse recognition and reporting procedures,

Format changes have been made to facilitate reproduction. While these research projects have been selected as outstanding, other NFA EFOP and APA format, style, and procedural issues may exist.

and the services offered by the District's contracted third party Employee Assistance Program service.

Table of Contents

Abstract.....	3
Introduction.....	6
Background and Significance	8
Literature Review.....	13
Procedures.....	21
Results.....	31
Discussion.....	58
Recommendations.....	69
References.....	74

Appendices

Appendix A: Group A, States with No Legal Marijuana Questionnaire Results	78
Appendix B: Group B, States with Only Medical Marijuana Questionnaire Results.....	90
Appendix C: Group C, States with Medical and Recreational Marijuana Questionnaire	96
Appendix D: D. Burke Interview Transcription	109
Appendix E: R. Martin Interview Transcription.....	112
Appendix F: C. Walden Interview Transcription	114

Introduction

For centuries marijuana has been regarded as an effective medicinal and spiritual aid in various cultures. Recorded history shows that as early as 2900 BC, Chinese Emperor Fu regarded cannabis as an effective and accepted medicine. He acknowledged the popular belief of the era that cannabis produced effects on the human body and psyche consistent with the Chinese philosophical concepts of yin and yang, each of which are opposite yet complementary and essential elements necessary for the establishment and maintenance of natural equilibrium. Early Hebrews and Christians are purported to have used holy anointing oil prepared with cannabis. The ancient Egyptians, Persians, Greeks, East Indians, and Romans believed that cannabis to be effective for the treatment of a wide range of medical conditions (Procon.org, 2012).

The spread of the concept by various cultures over the centuries of marijuana being an effective pharmacological agent found its way to general acceptance into early American culture. This general societal tolerance remained until the early 1900's when prohibitionist sentiments resulted in State's pursuing legislative initiatives to ban certain substances, including marijuana, and activities viewed as unhealthy and inconsistent with morally acceptable social practices (Procon.org, 2012). Despite various State's criminalization of marijuana and the subsequent Federal criminalization in the mid to late 1900's, social marijuana use became prevalent among jazz musicians and later with segments of the population as illustrated by the quote, "As the conformity of the postwar era took hold, getting high on marijuana and other drugs emerged as a symbol of the counterculture..." (New York Daily News, 2012, para. 21).

Over the past 15 years, several States' majority voter opinions concerning marijuana use have apparently shifted in favor of its use as a pharmacological agent. Between 1998 and 2013 the majority of voters in 20 states have approved of legislation for the legalization of medical

marijuana. In an even greater display of the pro-marijuana stance, the majority of voters in the States of Washington and Colorado, where medical marijuana has been legal several years, approved of legislation for the recreational use, private and commercial cultivation, and commercial sale of marijuana in 2012 (National Conference of State Legislatures [NCLS], 2013).

In states where medical marijuana use has been legalized, and particularly in the States of Washington and Colorado, it can logically be deduced that the substance has relatively recently become more easily obtainable and its use more socially acceptable. With legalization, increased availability, and reduction of social biases it is probable that members of the population which previously may not have considered using marijuana may now stand a higher probability of using the drug. Those who choose to use State legalized recreational marijuana may base their decision on the popular opinion of the substance as being no more, or even less harmful than alcohol or tobacco (National Organization for the Reform of Marijuana Laws [NORML], 2013). They may however, be unaware of the potential negative physical and psychological effects of the drug on the human body claimed by some researchers. The United States Drug Enforcement Administration (DEA) claims that the high content of tetrahydrocannabinol (THC), the intoxicating component of cannabis, of today's cannabis may cause dependency in users. The administration's data shows THC levels have increased from, "...just under 4% reported in 1983 to 10.1% in recently seized marijuana" (DEA, 2010, p. 18). Other studies cited claim increased occurrences of neurological disorders, respiratory disease, and cancer among marijuana users (DEA, 2010).

The problem was the Larkspur Fire Protection District (LFPD) did not have a substance abuse policy which adequately addressed the potential use of legalized marijuana by off-duty

employees. The purpose of this applied research project was to determine what changes were needed for the LFPD substance abuse policy to adequately address the potential use of legalized marijuana by off-duty employees. The three research questions that were developed to determine the needed changes were: a) How does a given group of agencies' leadership personnel view the potential performance impact on employees who may use marijuana while off-duty, b) How does a given group of agencies' leadership personnel view the potential health impact on employees who may use marijuana while off-duty, and c) How does a given group of agencies' substance abuse policies address the potential off-duty use of marijuana by employees? The primary research methodology used for this applied research project was descriptive.

Background and Significance

The LFPD is a rural 110 square mile special fire protection district located in the southwestern portion of Douglas County, Colorado and is positioned midway between the State's two largest metropolitan areas of Denver and Colorado Springs. Interstate 25 bisects the District from north to south and is the primary commuter and commercial route between Denver and Colorado Springs. The constituency of the District consists of approximately 6,275 district residents according to the Douglas County Assessor's Office demographics division (N. Gideon, personal communication, 2013). The Town of Larkspur, which is the sole incorporated municipality located within the District's boundaries, covers three square miles and has a population of 118 residents according to the town administrator (M. Krimmer, personal communication, 2013). The majority of the District's population resides in unincorporated subdivisions and ranch properties outside of the Town of Larkspur's boundaries.

The agency provides fire prevention, public education, fire suppression, wildland firefighting, and both Basic Life Support (BLS) and Advanced Life Support (ALS) ambulance

transport services to residents of the District and surrounding mutual aid agencies. LFPD operational and administrative staff members utilize three fire stations; Station 161 functions as the District headquarters and is located in the center of the District, Station 162 is located in the northwestern portion of the District, and Station 164 is located in the southwest portion of the District. Operational staffing consists of six volunteer firefighters, 20 volunteer firefighter/emergency medical technicians (FF/EMT's), four volunteer firefighter/paramedics (FF/Paramedics), nine part-time FF/EMT's, 11 career FF/EMT's, and seven career FF/Paramedics. Volunteer and part-time personnel are not assigned a defined work schedule and supplement staffing when available or as needed. Fourteen of the career staff personnel are distributed between three shifts and work a 48 hour on, 96 hour off rotating schedule. The remaining operational staff is assigned to administrative/command positions and works a standard 45 hour work week, Monday through Friday, 8:00 a.m. through 5:00 p.m. The administrative/command staff is augmented by one non-operational full-time administrative assistant who also is assigned a standard 45 hour work week schedule.

As a general practice, all new LFPD members must sign and date an acknowledgment form stating they have received and will abide by District's Administrative Procedures and Standard Operating Guidelines manual (LFPD AP/SOG). Existing members are required to do the same when revisions or additions are made to the LFPD AP/SOG. Upon submission, the signed and dated form is placed in the member's personnel file as record of their acknowledgment of receipt and compliance with the LFPD AP/SOG. The current version of the manual adequately addresses most applicable administrative policy concerns. It does not however, adequately provide guidance on the District's position of state legalized marijuana use or drug testing requirements other than pre-employment drug screening and drug screening

during scheduled physical exams. Furthermore, it does not provide clearly comprehensive disciplinary guidelines to be followed by the agency if a member is found to be using legalized recreational marijuana. Both substance abuse recognition training and rehabilitation guidelines are however, provided by the District's third party employee assistance program on an as-needed basis. Without clear and comprehensive substance abuse policy components, the liabilities relative to employee substance use or abuse the District has been exposed to in the past, or is currently exposed to, is relatively unknown. If more comprehensive policies concerning the matter are not developed and adopted, the uncertainty of liability will continue.

Presently, the topic of substance use and abuse is addressed in the LFPD AP/SOG however, there is no stand-alone policy concerning the issue of the new legalized marijuana status in the State. The first reference to substance use or abuse is contained in the Code of Conduct, General Order 103. In General Order 103, Section 4, Appearance for Duty, it is stated, "The use of illegal substances or the use of legal substances inappropriately is strictly forbidden." In General Order 103, Section 4, Appearance for Duty, it is further stated that on-duty, "Employees must not consume any intoxicants or medications, except for those prescribed by a licensed medical professional and legal under both State and Federal law" (LFPD AP/SOG, 2007, p. 7). Although it is clear that the use intoxicating substances, whether legal or illegal, are discouraged unless legal and prescribed by a licensed medical professional, it could be argued that the prohibition of such substances applies to only on-duty personnel. The second reference to substance use or abuse is contained in General Order 104, Disciplinary Actions, Section 5, Class A Offense. It is made clear in this section that on-duty intoxication, or the proven use of intoxicating substances while on-duty, will most likely result in disciplinary action including possible termination of employment. Additionally, it is adequately stated that, "Arrest,

conviction or concealment of arrest or conviction of a member involving drugs or alcohol” whether on or off-duty will result in disciplinary action including possible termination of employment (LFPD AP/SOG, 2007, p. 15).

As previously mentioned, marijuana use can potentially result in neurological problems, respiratory disease, and cancer (DEA, 2010). If an organization does not have policies which comprehensively address its stance on substance use and abuse by its employees, particularly in Colorado where recreational marijuana use is now legal, the organization and its members could potentially be subject to employee health and productivity issues and employee turnover as a result of health related issues. In the absence of comprehensive substance use and abuse policies, an organization is also at increased risk of suffering costly and destructive sociopolitical and legal circumstances.

LFPD routinely applies for federal grants and has received federal grant awards on numerous occasions. As required by the United States Department of Labor (DOL), organizations which receive federal grant awards, whether private or non-profit organizations, or local, county, state, or federal government agencies, must all comply with the Drug Free Workplace Act of 1988 (DOL, n.d., a). It is therefore important that organizations make a good faith effort in order to ensure their substance abuse policies are comprehensive enough to avoid the perception of non-compliance with the Drug Free Workplace Act of 1988 which potentially could result in difficulties in obtaining federal grant awards. While LFPD’s policies do comply with the requirements of the Drug Free Workplace act of 1988, its overall substance abuse policies are vague; particularly in reference to the issue of legalized medicinal and recreational marijuana. In the absence of clear and concise substance abuse policies not only could problems arise when dealing with federal entities, but the ability of an organization to detect employee

drug use on or off-duty may be diminished. Such situations could result in placing the safety of the organization, its personnel, and the public it serves in jeopardy.

This applied research project (ARP) relates to information presented in Unit 5 of the Executive Fire Officer Program (EFOP) course Executive Leadership student manual (United States Department of Homeland Security [USDHS], 2012). The manual defines public policy as, “...action (or inaction) taken by governmental entities regarding an issue or set of issues that a significant number of people or groups regard as important and in need of solving” which includes “Laws and regulatory measures,” and, “Priorities regarding funding” (p. 7-4). On November 7, 2012 the majority of the voting populace in Colorado was successful in amending the State constitution to allow for the legalization of marijuana for recreational use, private cultivation, and commercial sales. This change in public policy warranted examination of LFPD’s current policies relating to drug use for multiple reasons. First, the legalization of recreational marijuana use and private cultivation is at odds with federal law which still classifies the drug as, “...dangerous with no currently accepted medical use and a high potential for abuse” (DEA, n.d., para. 3). Since the State of Colorado’s laws concerning marijuana use conflicts with federal law, the LFPD’s position in the eyes of federal entities may be at risk if the issue is not adequately addressed in its policies. Secondly, without comprehensive substance abuse policies LFPD could be vulnerable to civil actions related to disciplinary measures dealt to employees related to departmental marijuana or other substance use offenses. Finally, if the District’s substance abuse policies are not sufficiently comprehensive, the safety of the employees of the District, the District itself, and the public may be placed in jeopardy.

Relative to the United States Fire Administration (USFA) goals and objectives outlined in its most recent strategic plan, this applied research project is intended to “Advocate a culture of

health, fitness and behavior that enhances emergency responder safety and survival” and “Maintain a positive work environment to ensure the organization’s well-being and productivity” (USFA, 2010, pp. 20, 22). This research will provide a roadmap for the District to follow in its efforts to create comprehensive substance abuse policies addressing the potential use of legalized recreational marijuana and other substances of potential abuse by its employees. The development of such a policy is likely to result in a greater potential for the District to construct and sustain a safer work environment while simultaneously promoting the physical and mental health of its personnel. Additionally, LFPD will be more adequately compliant with federal laws concerning marijuana. As a result, the District and its personnel will be more capable of providing the service deserved and expected by its constituents.

Literature Review

The literature search for this ARP began at the National Fire Academy (NFA) Learning Resource Center (LRC) in April of 2013 while the researcher attended the EFOP Executive Leadership Course. During the LRC search however, no literature specifically related to State legalization of recreational marijuana was discovered. The literature search resumed at the researcher’s home agency library and extended to the Pikes Peak Regional Library System, as well as internet searches to discover literature related to the subject matter of this ARP. Due, apparently, to the politically charged nature of the legalization of marijuana, numerous articles were found via internet searches concerning the topic; some which denounced the legalization of marijuana, some which promoted its legalization, and some which weighed the benefits and risks of its use and legalization. Other literary material discovered consisted of findings of others related to the history of marijuana use in various societies, its physical and psychological effects on humans, and its socio-political impacts. Additional literature found during the search

discussed legal considerations and potential policy adaptations addressing State legalization of both medical and recreational marijuana use.

According to the Michigan Medical Marijuana Association (MMMA), the most popular way to use the drug is to “...smoke it in a joint (cigarette), a glass pipe, or a type of a water pipe known as a bong” in order for the user to obtain the most rapid therapeutic effects of its THC contents (MMMA, n.d., para. 1). As a result of this claim it can be surmised that most individuals who use choose to use marijuana for recreational purposes will most likely smoke it to take advantage of its optimal psychoactive effects. The MMMA does state however that there are other methods of using marijuana such as ingesting baked edible products, using vaporizers to deliver THC via inhalation, and capsules which can be swallowed to avoid “...an increased risk of bronchitis and other respiratory irritation” (para. 1).

One pertinent article discovered presents the potential performance impact on some athletes who choose to use marijuana as a “...very popular, recreational, ‘let your hair down’ way to party for athletes” (Lemke, 2009, para. 5). Lemke said that the actual effects, whether positive, negative, or neutral, on athletic performance is difficult to directly measure because “there has never been a scientific study on marijuana and athletic performance” (para. 6). Lemke also states there are a number of athletes, both amateur and professional, who use marijuana instead of alcohol or tobacco because they believe it has less impact on their athletic performance. Pittman (2012) however, referred to a study which found workers who frequently used marijuana were more likely to be less productive at work than were workers who never used marijuana. He also stated research showed that marijuana users “...who quit smoking cannabis increase their work commitment”, while those who start smoking show a notable decline in productivity (para. 11). Conversely, in a comparative study evaluating findings

relative to marijuana use and psychomotor performance it is stated, "...studies of chronic cannabis consumers indicate that residual levels of THC may be present in blood without associated impairment of performance for several days past use" (Armentano, 2012, p. 54).

While this data does not specifically address how overall productivity is affected in workers who chronically use marijuana, it does imply that their work performance is not negatively impacted even though active levels of THC remain at detectible levels in their blood. Armentano further points out that the same THC levels noted in the chronic users of the studies who abstained for a period of days and exhibited no signs or symptoms of intoxication were consistent with levels which cause intoxication in occasional users immediately after marijuana use (p. 54). According to Armentano (2012), these findings suggest that using drug testing to prove or disprove cannabis intoxication may be unreliable and that the presence of THC does not necessarily indicate impairment of a person's ability to perform at a normal level.

Although Armentano's perspective suggests differing effects of THC with respect to the occasional user and the chronic user, it does not address the impact of marijuana use on residual mental health issues. One article discovered contains the National Association of Alcoholism and Drug Abuse Counselors viewpoint on the mental health and social impacts of marijuana use (NAADAC [NAADAC], 2012). The article states that, "...research over the past 15 years has suggested that there is a link between regular marijuana use and schizophrenia" and that regular users are, contrary to prevailing pro-marijuana beliefs, prone to cognitive function deficits even after the intoxicating effects of marijuana have worn off (p. 7). The article further indicates that marijuana users view their quality of life to be lower than that of non-marijuana users (NAADAC, 2012). Colley et al (2010) counters the stance of the NAADAC in a study of the neurophysiological and cognitive effects on frequent users of marijuana. They say that although

there have been many past studies on the impact of marijuana on human cognitive functions, there is “...little consensus regarding the neuropsychological consequences of marijuana intoxication” (p. 1).

Other literature discovered relates to the pulmonary, cardiac, and other potential negative health effects resulting from marijuana use. In a report by the British Lung Foundation evidence of studies are presented which indicate smoking marijuana may cause a wide range of pulmonary ailments from chronic productive coughing to lung cancer, quite similar to the ailments caused by cigarette or other smoked tobacco products. In reference to potential impacts on the cardiovascular system, the document refers to research which indicates, “...people who smoke cannabis less than once a week are more than twice as likely to die from a heart attack...” than are non-users, and that the risk of suffering a myocardial infarction is increased 4 times that of non-users. The report also presents evidence which suggests marijuana, whether ingested or smoked, can be addictive and may decrease the effectiveness of the immune system leaving users vulnerable to a host of non-cardiopulmonary diseases and physiological disorders. Despite this evidence, the report claims that “...almost a third of the British population doesn’t think smoking cannabis is harmful to your health” due to a general lack of public education on the dangers of marijuana use (British Lung Foundation [BLF], 2012, pp. 4,10).

In a study by Kalhan et al. (2012) which explored the effects of smoked marijuana on the pulmonary system it was concluded that “occasional” marijuana use, “...one joint per day for seven years, or one joint per week for forty-nine years...” resulted in no substantial pulmonary deficits (p. 177). These findings conflict with the negative pulmonary impacts proposed by BLF (2012). Kalhan et al. (2012) examined speculative evidence by other researchers which indicated moderate marijuana smoking practices may even improve respiratory tidal volume by

increasing the strength of intercostal muscles and elasticity of lung tissue as the result of “...deep inspiratory maneuvers practiced by marijuana smokers...” (p. 180). Kalhan et al. (2012) did stress however that heavy chronic use is not advised because their findings suggested that such use has a higher probability of causing damage to the pulmonary system. Supportive of the advice against heavy use was information in a review by Concato et al. (2007) of thirty-four medical studies between 1966 and 2005 which evaluated the pulmonary effects of smoked marijuana. It was concluded that the cumulative research efforts provided consistent findings which indicated people with a history of chronic inhaled marijuana use were more likely to suffer “...respiratory symptoms consistent with obstructive lung disease” than were infrequent users or non-users (para. 4).

The literature by MMMA (n.d.), Lemke (2012), Pittman (2012), Armentano (2012), NAADAC (2012), Colley et al (2010), BLF (2012), Kalhan (2012), and Concato (2007) combined, contributed to the development of both the first and second research questions. The documents explored potential work performance impacts, possible neurological and cognitive functional deficits, and other physical health implications employees may be susceptible to if they choose to use recreational marijuana. If an employee’s mental health is impacted by marijuana it is probable that his or her work performance will be impacted to some degree. Similarly, if an employee’s cardiovascular, pulmonary, or general health is negatively affected it is reasonable to anticipate a decline in the person’s ability to perform at optimal work capacity, particularly in physically demanding occupations such as firefighting. The perspective study by Armentano (2012) also contributed to the development of the third research question in that it raised questions pertaining the equity and fairness of substance abuse policies which contain drug testing requirements.

According to the United States Department of Labor (DOL, n.d., b) drug testing programs are not required for organizations to be in compliance with the Drug Free Workplace Act of 1988. Although not required to have drug testing programs included in their policies, in most states organizations have the option to drug test employees or prospective employees. DOL (n.d., b) describes the most common drug testing schedules used by organizations as consisting of any combination of the following; pre-employment, reasonable suspicion of illegal drug use, following an accident occurring on-duty, random, periodic, and after an employee returns to duty following rehabilitation for a previous drug policy violation. According to an article by Faust and Gilbreth (2013), When Employment Law Meets Legalized Marijuana, the states of Arizona and Delaware disallow employers from administering discipline to employees who test positive for marijuana without "...evidence of impairment at work, except where the employer would lose a federal license or revenue by continuing to employ a marijuana user" (para. 12). Faust and Gilbreth (2013) also point out that in the states of Connecticut, Maine, and Rhode Island the laws are unclear whether it is permissible to discipline employees who drug test positive for marijuana without signs of intoxication. In all these states however, including Arizona and Delaware, it is unlawful to discipline non-intoxicated employees who possess a valid medical marijuana card and test positive for THC (para. 12).

Faust and Gilbreth (2013) further point out that employees or applicants, even if they may have a valid medical marijuana card, cannot seek protection under the American Disabilities Act because, although they may have a true diagnosed debilitating physical condition, marijuana for the treatment of their condition is illegal under federal law (para. 14). This issue was recently challenged in Washington State where a company refused to hire a prospective employee who, although she had a valid medical marijuana card, was refused employment based on a positive

pre-employment drug test (Tappero, 2013). In reference to drug testing of employees and potential employees, Tappero states, "...in general, employers are not usually testing for impairment, but rather for usage of the substance, and THC remains stored in fat cells for up to 30 days" (para. 11). The form of THC referenced by Tappero that remains in a person's system for as long as 30 days is the inactive metabolite of THC which has no intoxicating properties and is generally detected via urinalysis (Armentano, 2013). According to Armentano, the active form of THC which causes intoxication can only be detected by a blood test which specifically identifies active THC in the blood "...of cannabis consumers for a few hours (though low, residual levels may be detected in chronic smokers for up to 12-24+hours if more sensitive technology is used)" (para. 3).

In a news article by Dominguez (2013) it is made evident that employers in Colorado can maintain zero-tolerance drug policies although both medical and recreational marijuana are legal under State law. Dominguez (2013) states employers have the right to utilize discipline as defined in their policies in cases where employees have a positive drug test, regardless of whether the inactive or active form of THC is detected. This evidence is based on a recent court of appeals decision in Colorado in which it was "...ruled that the law doesn't protect a worker's use of marijuana – even if it's off-duty – because marijuana is still a federally banned substance" (para. 2).

The information presented by Dominguez is supported by Ferguson (2013) who discusses the Colorado Lawful Activity Statute, Colorado Revised Statute 24-34-402.5, as it pertains to employer and employee rights related to off-duty activities. Ferguson states that because, for instance tobacco is not illegal either federally or in the State of Colorado, an employer cannot legally refuse employment to a person or terminate a person on the basis he or she uses the

substance. However, in reference to an appealed case in which an employee was terminated on the grounds of a positive drug test as a result of using medical marijuana, the Colorado Court of Appeals was quoted as saying, "...we can find no legislative intent to extend employment protection to those who engage in activities that violate federal law" and the termination was deemed a legal disciplinary action (Ferguson, 2013, para. 3). Ferguson (2013) implies that under Colorado law, employers have the right to drug test prospective employees and current employees and to refuse employment to applicants or terminate employees on the basis of a drug test with evidence of illegal drug use; whether illegal under state law, federal law, or both. It is stressed however, that the employer's drug policies and policy enforcement must be consistent, and adequate efforts must be made by employers to ensure employees understand the policies and possible consequences to employees if the policies are not adhered to.

Alternatively, Swinhart (2012), a fire chief in Washington State where recreational use of marijuana has been legalized points out that unless use of marijuana causes declines in employee work performance or results in legal issues, his administration has no plans on taking any sort of action concerning policy alterations. Swinhart (2012) views the off-duty use of marijuana by firefighters as an individual right approved by the voters of his state, and that right should not be infringed upon. He states in reference to employee use of marijuana, "We could certainly tell them they can't do it on-duty (just like alcohol), but once they go home they fall under societal laws" (para. 6). The Seattle Washington and Denver Colorado police departments however, view the issue of marijuana use by employees differently than Swinhart. As conveyed by Drugfree.org (2012) both departments have no plans to accommodate recreational off-duty use of marijuana by any of their employees. According to John White, a spokesman for the Denver

Police Department, “Marijuana is still illegal at the federal level, so officers would not under any scenario be allowed to use marijuana” (Drugfree.org, para. 3).

In an article by Tratenberg (2012) which primarily discusses alcohol abuse by firefighters but also refers to other substance abuse, Mike Healy, an addiction specialist with close ties to the fire service was quoted, “To *not* have a zero tolerance policy is stupid...But there’s a lot of tradition in the service, and part of the problem is that we’ll do anything to protect each other” (para. 7). Healy’s quote infers that by protecting fellow employees who may be abusing a substance, whether alcohol or any other drug, is counterproductive and may lead to greater problems for the individual, the organization, the public, and the fire service as a whole.

The literature by DOL (n.d., b), Faust and Gilbreth (2013), Tappero (2013), Armentano (2013), Dominquez (2013), Swinhart (2012), Drugfree.org (2012), and Tratenberg (2012), contributed to the development of the third research question which was created to determine how other agencies policies address off-duty use of marijuana by employees. These documents provided valuable insight related to employee marijuana use and potential policy amendments. The literature also presented potential organizational legal ramifications concerning federal and state laws, employee drug testing, and employee disciplinary actions. Additionally, the literature contained viewpoints of employers in states where both medical and recreational marijuana use have been legalized

Procedures

Questionnaire Development

The first procedure consisted of the development of a questionnaire designed to collect viewpoints of leadership personnel of various agencies on the impacts of off-duty marijuana use on employees and how their agencies substance abuse policies address the use of marijuana.

Specifically, the items in the questionnaire were devised to discover answers to the three research questions; a) How does a given group of agencies' leadership personnel view the potential performance impact on employees who may use marijuana while off-duty, b) How does a given group of agencies' leadership personnel view the potential health impact on employees who may use marijuana while off-duty, and c) How does a given group of agencies substance abuse policies address the off-duty use of marijuana by employees. Information relative to marijuana use and its potential effects on employee performance, health, and policy implications discovered during the literature search were utilized in the creation of the questionnaire items.

The first questionnaire item was developed to provide geographical information. All fifty states of the United States, its territories, and the District of Columbia were provided as possible selections and respondents were limited to only one selection. The selections were provided to identify respondents by populations of geographical locations and associated marijuana law variances. The second questionnaire item was a multiple choice question soliciting general respondent information regarding the nature of the respondents' organizations. The available responses for the second questionnaire item were, a) Fire Protection, b) Emergency Medical Services (EMS), c) Law Enforcement, and d) Other. If the respondent selected "Other," he or she was provided with a text field in which their specific organization type could be manually entered. These available responses for the second questionnaire item were included to identify potential population groupings resulting from response variances or similarities between organization types.

The third and fourth questionnaire items were multiple choice questions related to the first research question. These items solicited respondent's views of how off-duty marijuana use by employees would most likely affect their ability to perform at optimal mental and physical

capacity while on-duty. The fifth and sixth questionnaire items were multiple choice questions related to the second research question by soliciting respondent's views of how off-duty marijuana use by employees would most likely impact their mental and physical health. The available responses for the third, fourth, fifth, and sixth questionnaire items were, a) Yes in both the occasional user and the chronic user, b) No in both the occasional user and the chronic user, c) Yes in the occasional user but no in the chronic user, and d) No in the occasional user but yes in the chronic user. Extensive literature was reviewed in search of information which accurately delineated categories of marijuana users however, there were no consistent categories and associated criteria discovered. The most frequently used terminology discovered was "occasional" user and "chronic" user. Although subjective, the terms "occasional user" and "chronic user" were included in the third, fourth, fifth, and sixth questionnaire item selections to provide a standard scale against which to analyze responses.

The seventh questionnaire item related to second research question and was developed to determine and compare respondent's views of the effects of the use of two distinctly different intoxicating substances, and whether specific groups of agencies viewpoints of the use of the substances tended to conflict. The effects of alcohol, a widely legal substance in the United States under both federal and state laws, and marijuana, which is legal in less than forty percent of the states and only under state laws, were the intoxicating substances addressed in this item. Specific potential effects of these substances included in this questionnaire item were physical, mental, and social health. Physical and mental health effects were related to the second research question in that any health effects, mental, physical, or social resulting from use of either of these substances may result in an impact on an employee's ability to perform at optimal capacity.

Relative to the second research question, health effects resulting from employee use of either of these substances may result in various negative organizational or employee impacts.

The eighth questionnaire item was related to the third research question by soliciting responses specifically related to how respondents' agencies substance abuse policies outlined drug testing requirements. The respondent was able to select multiple answers from a list. The available answers were, a) Pre-employment, b) Random, c) During scheduled physical exams, d) Reasonable suspicion of prohibited drug use, and e) Other. The first four available answers in the list were derived from literature reviewed. If the respondent selected "Other," he or she was provided with a text field in which descriptive information not provided in previous answers could be manually entered.

The ninth questionnaire item related to the third research question in that it was constructed to solicit responder's inputs pertaining to their agencies drug policies with respect to the potential actions against employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication). The four potential responses provided were, a) Zero tolerance (immediate termination of employment), b) Case dependent (disciplinary action which may or may not include termination), c) Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action), and d) Other. If the respondent selected "Other", he or she was provided with a text field in which descriptive information not provided in previous answers could be manually entered.

The tenth questionnaire item was a general request which asked respondents to provide any additional pertinent information or comments they may have concerning the subject matter of the questionnaire. As with any questionnaire, it is possible that respondents may have valuable information which is not possible to discover through distribution of a standardized

questionnaire containing questions with primarily limited multiple choice answers. To facilitate the possibility of respondents sharing information which otherwise could not be gained from the other questionnaire items, a text box was provided for recipients willing to manually enter additional pertinent information.

Questionnaire distribution, data collection, and analysis

SurveyMonkey™, an online company which provides a subscription based robust automated survey and questionnaire application on their website, was utilized to distribute the questionnaire and collect data submitted by respondents. To utilize the company's survey and questionnaire application, a personal subscription to the service was required. After successfully subscribing to the service, the previously described questionnaire items were manually entered by the researcher into the company's survey and questionnaire application.

Upon completion of manually entering and formatting the questionnaire in the SurveyMonkey™ online application, the program automatically created a web link which, when clicked was programmed to open the online questionnaire created by this researcher. The web link to the questionnaire was copied and pasted into a distribution e-mail message which was accompanied with a personal introduction, a brief description of the questionnaire and its relationship to this research project, instructions on how to use the web link to access the questionnaire, and a request that the recipient complete the questionnaire and forward the original e-mail to any of other qualified administrative personnel who may be interested and able to provide pertinent additional data.

Data collection efforts commenced on July 10, 2013 and were concluded on August 30, 2013. On July 9, 2013 the distribution e-mail was sent to 147 leadership personnel of various public service organizations using this researcher's personal e-mail address list. The public

service organizations the recipients were associated with consisted of Fire, EMS, Law Enforcement, Emergency Management, hospital based healthcare, and wildland organizations throughout Colorado and several other states. On July 11, 2013, in an effort to maximize distribution of the questionnaire, a copy of the original distribution e-mail was sent to the Secretary of the National Society of Executive Fire Officers (NSEFO) with a request that it be forwarded to all members contained in the organization's e-mail address list. The NSEFO secretary notified this researcher via e-mail on July 12, 2013 that the request had been received and the distribution e-mail had successfully been forwarded to 898 NSEFO members. Upon questionnaire completion by individual respondents, by design of the online questionnaire application, the data was automatically saved in the SurveyMonkey™ database. The submitted data was easily accessible to this researcher by simply logging onto the company's website and selecting a link directed to the questionnaire's stored data.

Upon review of the data submitted by respondents it became evident that categorizing population groups for this research based on organizational types would not provide balanced group populations because the majority of respondents indicated they were associated with Fire, EMS, and combined Fire and EMS agencies. In comparison, there were very few respondents associated with Law Enforcement, Emergency Management, or other public service agencies. This researcher chose to select three groups from the primary population based on the legal status of marijuana within the respondents' political locals. Although the population sizes differed between these groups, they were of sufficient size to compare and contrast the viewpoints of respondents within individual groups and between the groups. The three groups were; a) States with no marijuana legalization, b) States with medical marijuana legalization, and c) States with both medical and recreational marijuana legalization. These specific groups were

selected to facilitate comparative analysis among respondents from states with differing marijuana laws, and to discover potential similarities or variations in beliefs of the effects of marijuana on employees and organizational policy. The questionnaire items and results for the individual groups can be found in Appendices A, B and C.

There are a number of limitations to consider when conducting research using an online service such as SurveyMonkey™. By distributing the questionnaire link via e-mail in a “shotgun” fashion, there is no guarantee all intended recipients will receive the message. Some recipients e-mail addresses may no longer match the address in the sender’s list which completely negates the possibility of the message reaching its intended destination. Some recipients may not recognize the sender and the message may be manually deleted or the sender of the message not be recognized by the recipients information technology system which may automatically filter the message as spam or junk mail. Still, some recipients who are able to appropriately access the questionnaire may not understand or find interest in the topic of the items in the questionnaire and ultimately abandon completing it, or completing it incorrectly.

Although the “shotgun” method of distributing a questionnaire for the purpose of research has limitations, it also has advantages. By distributing large batches of e-mails one has a greater chance of quickly obtaining a larger body of data from recipients across wide geographical areas and varying socio-political environments. This method of distributing questionnaires is relatively cost effective and easily accomplished. Other additional benefits are that a great deal of time is saved by using online data collection applications, and the task of data organization is greatly simplified by online data applications which feature data filtering utilities.

Interview Procedures

The second procedure consisted of conducting four interviews. Two of the interviews were conducted with career fire service managerial personnel. The first career fire service managerial personnel interviewed consisted of the Fire Chief of Duvall-King County Fire District 45 in Washington State. The second career fire service managerial personnel interviewed was a Battalion Chief from the municipal agency of the Castle Rock Fire Department in Castle Rock, Colorado. The third interview was conducted with a United States Justice Department (DOJ) attorney assigned as a liaison to the Colorado regional DEA headquarters. The DOJ attorney was also a volunteer Division Chief with the LFPD.

The career fire service interviewees were selected because each is located in a state where medical and recreational marijuana use has been legalized. This researcher expected that the relatively new state laws, concerning primarily legalized recreation marijuana, may have affected their policies in some manner, or may have been the catalyst for current planning of policy revisions. The DOJ attorney was selected as an interviewee because his knowledge of federal and state laws concerning legalized marijuana use could be useful in determining LFPD's substance abuse policies effectiveness and potential for necessary revisions. The attorney was also selected as an interviewee because his viewpoints from the perspective of a volunteer Division Chief of the LFPD would most likely be enhanced by his knowledge of the law.

Two interview questions were developed for the two career fire service managerial personnel interviewed. The first question presented was, "How do you believe the legalization of recreational marijuana use in Colorado (or Washington) has affected the potential for employees of your organization to use the drug?" This question was designed simply to determine how the interviewees perceived the potential for use of marijuana by their agencies

employees. The second question presented was, “As a result of the legalization of recreational marijuana use, has your organization amended its substance abuse policy? If so, what changes were made and why? If changes were not made, why?” This question was developed to solicit information regarding potential changes in their organizations policies and why the changes were or were not made. The second interview question was also meant to solicit the interviewee’s opinions on the possible organizational impacts, the potential impacts on employees, and if they perceive the new recreational marijuana laws as a possible concern which may require an organizational adaptive change. These two interview questions related primarily to the third research question which sought to discover how other agencies’ substance abuse policies address the off-duty use of marijuana by employees.

Four interview questions were developed for the DOJ attorney/LFPD Division Chief. The questions were, a) What employer issues or concerns have you observed or, either directly or indirectly, dealt with since Colorado legalized recreational marijuana?, b) What legal ramifications might an employer expect if an employee is terminated on the basis of testing positive for marijuana use without signs of intoxication (i.e.: only the inactive metabolite THC is detected)?, c) As our policies stand now, specifically our substance abuse policy, which you have reviewed, is pretty vague. If we were to terminate an employee today who tested positive for the inactive metabolites of THC, what do you believe would happen if the employee were to legally challenge the termination?, and d) Would you recommend that our fire district amend its substance abuse policy to more effectively address the potential use of marijuana by its employees? If no, why? If yes, how? Each question was developed to determine potential changes to the LFPD substance abuse policies and potential legal ramifications of policy changes. Additionally, each question was related to the third research question by seeking

information concerning marijuana policies of other organizations, current LFPD policy deficits, potential legal ramifications of maintaining LFPD's current policies, and potential legal ramifications of changing LFPD's current policies to address the off-duty use of marijuana by its employees.

Each interviewee was contacted either in person or by telephone and requested to participate in the interview process. The purpose of the interview and the scope of the applied research project were explained. Upon agreement by the prospective interviewee to participate in the interview process, meeting dates and times were scheduled. Two of the interviews occurred in person while one, due to a large geographical separation, was conducted via telephone. Prior to the beginning of the interview, each of the interviewees were asked if they objected to the use of a digital audio recorder by the researcher to record the interview for note taking and transcription purposes only. They were ensured that the recordings would not be distributed or shared in any way other than transcription for inclusion in this research project.

Each of the interviewees indicated that they did not object to the use of a digital audio recorder or the transcription of the recording for use in this research project. After the digital recorder was activated and recording the conversation, the interviewees were again asked if they had any objections to a digital audio record of the interview to which each conveyed no objections while being recorded. At the beginning of the interview, the interviewees were provided with either a digital copy or hard copy of the interview questions. The interviewees were then instructed read the questions aloud and provide their answers with an unrestricted time limit. The interviews were conducted on July 31, August 1, and August 28, 2013. The interviews varied in length between 10 and 20 minutes. After completion of all interviews, the responses to the questions were analyzed for trends in interviewee viewpoints concerning

potential legalized marijuana use by employees, trends in organizational policy contents, trends in policy changes relative to the issue, and potential legal issues which may be encountered as the result of policy changes addressing legalized recreational marijuana use by employees.

Although interviews inherently present scheduling issues and are more time consuming than the previously described questionnaire procedure, conducting interviews for the purpose of this research proved to be beneficial. The ability to contact the interviewees in advance and subsequently obtaining their agreement to an interview indicated they had some level of interest, or were organizational stakeholders in the issue of potential marijuana use by their organization's employees and its potential resultant organizational problems. Additionally, the unrestricted time limit the interviewee's were provided to answer the questions, and the ability for two-way communications provided during an interview facilitated the sharing of more diverse information than could be accomplished using a "shotgun," impersonal e-mail questionnaire distribution method.

Results

Questionnaire Results

From the 147 questionnaire distribution e-mails sent to managerial personnel of organizations using this researcher's personal e-mail address list, 26 were returned as undeliverable. The number of undeliverable messages from the 898 forwarded by the Secretary of the NSEFO was unknown. One-thousand-nineteen of the distribution messages presumably reached the intended recipients but the completed data from only 260 (25%) questionnaires were received and recorded in the online survey and questionnaire application. Questionnaire data was exported from Survey Monkey™ into Microsoft Excel™ for appropriate formatting for inclusion in the appendices of this ARP. Response percentages were rounded to the nearest

whole number using Microsoft Excel™ to simplify in-text documentation and tables. Complete questionnaire responses can be found in Appendices A through C.

Data collected from the primary population of 260 respondents indicated in the first questionnaire item that their agencies were located across 39 different states and one United States territory. The primary population was divided into three groups based on marijuana laws within the State or territory their organizations were located. The first group, Group A consisted of 107 (41%) of the total 260 respondents and were associated with organizations located in states with no laws which legalized medical or recreational marijuana. The second group, Group B consisted of 43 (17%) of the 260 total respondents and were from states or territories with only medical marijuana legalization. The third group, Group C consisted of 110 (42%) of the total 260 respondents and were from states with both medical and recreational marijuana legalization. The grouping as previously described was selected for comparative analysis in this research because grouping by agency type would not yield relatively accurate comparisons due to the widely unbalanced quantity of agencies types.

The second questionnaire item inquired the basic description of the respondents' organizations. 157 (64%) respondents were associated with fire protection agencies, 50 (16%) respondents were associated with EMS agencies, 12 (4%) were associated with law enforcement agencies, while the remaining 41 (16%) were associated with "Other" agencies. Among the "Other" agencies, 33 (13%) respondents listed their organization's primary function as Fire and EMS, four (1.54%) respondents were associated with emergency management agencies, and three (1.15%) were associated with hospital based healthcare. Additionally in the "Other" category, two (0.77%) respondents described their agencies primary function as public safety, one (0.38%) respondent was associated with an agency with the primary function of wildland

fire, and one (0.38%) respondent was associated with an organization whose primary function was EMS education. The combined volume and percentage results of the first and second questionnaire items can be found in Table 1 and Table 2.

Table 1

The combined results of the first and second questionnaire items representing organizations' locations with relationship to marijuana laws, and respondents' agency types expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Fire protection	81	33	43	157
b. EMS	7	2	41	50
c. Law enforcement	1	0	11	12
d. Other	18	8	15	41
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 2

The combined results of the first and second questionnaire items representing organizations' locations with relationship to marijuana laws, and respondents' agency types expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Fire protection	76%	77%	39%	64%
b. EMS	7%	5%	37%	16%
c. Law enforcement	1%	0%	10%	4%
d. Other	17%	19%	14%	16%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Questionnaire research question 1 results

The first research question was developed to discover how a group of agencies' managerial personnel viewed the potential performance impact on employees who may use marijuana while off-duty. The third questionnaire item was a multiple choice question which

solicited respondent's views of how off-duty use of marijuana by employees would most likely affect their ability to perform at optimal mental capacity while on-duty. Based on analysis of each group's responses to the first answer option of the third questionnaire item, it appears that the groups' opinions concerning off-duty marijuana use and its impact on employee's on-duty ability to perform at optimal mental capacity varies incrementally. Eighty-two (77%) of the respondents from states with no marijuana legalization, Group A, believed that both occasional and chronic marijuana use had a relatively high level of impact. Twenty-nine (67%) of respondents from states with only medical marijuana legalization, Group B, indicated both occasional and chronic marijuana use had a significantly less impact on employee optimal mental capacity than indicated by Group A respondents. Fifty-five (50%) of respondents from states with both medical and recreational marijuana legalization, Group C, indicated they believed occasional and chronic off-duty use posed even less danger to an employee's optimal mental capacity while on-duty than did both Group A and Group B.

Group A respondents indicated that four (4%) within the group believed that chronic but not occasional off-duty marijuana use by employees would impact an employee's optimal mental capacity while on-duty. Three (7%) of Group B respondents agreed with Group A respondents. Interestingly, 16 (15%) of Group C respondents indicated they believed chronic but not occasional off-duty marijuana was most likely to impact an employee's optimal mental capacity while on-duty.

No respondents in either Group A or Group B indicated they believed occasional off-duty marijuana use was more detrimental than chronic off-duty marijuana use in terms of an employee's ability to perform at optimal mental capacity while on-duty. However, two (1%) of Group C respondents indicated occasional off-duty marijuana use posed more potential impact

on an employee’s ability to perform at optimal mental capacity while at work than does chronic off-duty marijuana use. Twenty-one (20%) of Group A respondents indicated chronic marijuana use was more likely to affect an employee’s optimal mental capacity than was occasional use. Alternatively, 11 (26%) of Group B respondents, and 37 (34%) of Group B respondents indicated chronic off-duty marijuana use would be more likely to impact an employee’s ability to perform at optimal mental capacity.

The combined responses of all groups showed that 166 (65%) of the original sample population of 260 respondents believed that both occasional and chronic off-duty marijuana use would impact an employee’s ability to perform at optimal mental capacity. Twenty-three (9%) of the combined respondents did not believe neither occasional nor chronic marijuana use would negatively affect an employee’s optimal on-duty optimal mental capacity. Only two (1%) of the combined respondents indicated that only occasional use would affect an employee’s optimal mental capacity, while 69 (26%) believed primarily chronic off-duty use was most likely to impact an employee’s optimal mental capacity. Results can be found in Table 3 and Table 4.

Table 3

Responses to the third questionnaire item, “Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal mental capacity while on-duty” expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Yes in both the occasional user and the chronic user	82	29	55	166
b. No in both the occasional user and the chronic user	4	3	16	23
c. Yes in the occasional user but no in the chronic user	0	0	2	2
d. No in the occasional user but yes in the chronic user	21	11	37	69
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 4

Responses to the third questionnaire item, “Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal mental capacity while on-duty” expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Yes in both the occasional user and the chronic user	77%	67%	50%	65%
b. No in both the occasional user and the chronic user	4%	7%	15%	9%
c. Yes in the occasional user but no in the chronic user	0%	0%	2%	1%
d. No in the occasional user but yes in the chronic user	20%	26%	34%	26%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The fourth questionnaire item was also related to the first research question in that it solicited respondent’s viewpoints of how off-duty marijuana use by employees would most likely affect their ability to perform at optimal physical capacity while on-duty. Seventy-nine (74%) of Group A respondents, which consisted of respondents from states with no marijuana legalization, indicated that both occasional and chronic off-duty marijuana use would negatively impact an employee’s ability to perform at optimal physical capacity while on duty. To a lesser extent, Twenty-seven (63%) of respondents from Group B, where only medical marijuana is legal, indicated they believed that both occasional and chronic marijuana use would affect an employee’s ability to perform at optimal physical capacity while on-duty. Still to a lesser extent, 53 (48%) of respondents of Group C, where both medical and recreational marijuana is legal, believed both occasional and chronic marijuana use would negatively affect an employee’s ability to perform at optimal physical capacity while on duty.

The combined responses of all groups of the primary population of 260 respondents showed that 159 (62%) respondents believed both occasional and chronic off-duty marijuana use

would negatively impact an employee's ability to perform at optimal physical capacity while on duty. Thirty (11%) of the respondents believed that neither occasional nor chronic off-duty marijuana use would have any impact on an employee's ability to perform at optimal physical capacity while on duty. Only one (1%) believed occasional off-duty use was more harmful than was chronic use. Thirty-eight (27%) indicated they believed occasional off-duty marijuana use posed no on-duty physical capability detriments while chronic off-duty marijuana use did.

Group A respondents indicated that seven (7%) believed chronic off-duty marijuana use, as opposed to occasional use, would negatively affect an employee's on-duty physical performance while in Group B, four (9%) had similar beliefs. In Group C however, 19 (17%) indicated they believed chronic marijuana use was more likely to negatively impact an employee's on-duty optimal physical performance than was occasional use. No Group A or Group C respondents indicated they believed occasional use was more likely to impact an employee's on-duty physical performance however, one (1%) Group B respondent indicated occasional marijuana use was more risky than was chronic use relative to employee on-duty optimal physical performance.

In reference to the effects of chronic off-duty marijuana use as opposed to occasional use on the negative impact to employee on-duty optimal physical performance, twenty-one (20%) of Group A respondents believed chronic use was more detrimental. Eleven (26%) of Group B respondents, and 38 (35%) of Group C respondents believed chronic off-duty marijuana use would impact employee on-duty optimal physical performance while occasional use would not.

The combined responses of all groups showed that 159 (62%) of the original sample population of 260 respondents believed that both occasional and chronic off-duty marijuana use would negatively impact an employee's ability to perform at optimal physical performance while

on duty. Thirty (11%) of the respondents believed that neither occasional nor chronic off-duty use would impact an employee’s optimal physical performance while on-duty. Only one (1%) of the respondents believed that the occasional off-duty user was more likely to have a decreased level of on-duty physical performance than was the chronic off-duty user. Seventy (27%) of all respondents believed that the occasional off-duty marijuana user was not susceptible to adverse effects on optimal physical performance while the chronic off-duty user was susceptible. Results can be found on Table 5 and Table 6.

Table 5

Responses to the fourth questionnaire item, “Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal physical capacity while on-duty” expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Yes in both the occasional user and the chronic user	79	27	53	159
b. No in both the occasional user and the chronic user	7	4	19	30
c. Yes in the occasional user but no in the chronic user	0	1	0	1
d. No in the occasional user but yes in the chronic user	21	11	38	70
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 6

Responses to the fourth questionnaire item, “Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal physical capacity while on-duty” expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Yes in both the occasional user and the chronic user	74%	63%	48%	62%
b. No in both the occasional user and the chronic user	7%	9%	17%	11%
c. Yes in the occasional user but no in the chronic user	0%	2%	0%	1%
d. No in the occasional user but yes in the chronic user	20%	26%	35%	27%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The fourth and fifth questionnaire items were developed to provide answers to the first research question, “How does group of agencies’ managerial personnel view the potential performance impact on employees who may use marijuana while off-duty.” The answer for the first research question was obtained via a comparison of the responses for the third and fourth questionnaire items. The comparison indicated Group A, which contained respondents from states with no marijuana legalization, overall viewed employee marijuana use as more detrimental to employee mental and physical work performance than did Group B, which contained respondents from states with medical marijuana legalization. Group C, which was comprised of respondents from states with both medical and recreational marijuana legalization, viewed off-duty marijuana use to be of a lesser impact on employee mental and physical on-duty performance than did the respondents of Groups A and B. These finding suggest that with state legalization of marijuana comes a certain degree of social acceptance of its use, even among emergency service and public service organizations.

Questionnaire research question 2 results

The second research question was developed to discover how a given group of agencies' managerial personnel view the potential health impact on employees who may use marijuana while off-duty. The fifth questionnaire item sought answers to this research question by asking respondents their beliefs of how off-duty marijuana use by employees would significantly increase their susceptibility to mental health and cognitive problems. Eighty-one (76%) of the Group A respondents, 29 (67%) of Group B respondents, and 54 (49%) of Group C respondents indicated that they believed both occasional and chronic marijuana use would significantly increase their susceptibility to mental health and cognitive problems. Four (4%) of Group A respondents, three (7%) of Group B respondents, and 17 (16%) of Group C respondents indicated their belief that occasional off-duty marijuana use would not affect employee mental health or cause cognitive problems while chronic use would. None of the respondents within any of the groups indicated they believed occasional off-duty marijuana users were more susceptible to mental health and cognitive problems than employees who were chronic marijuana users. Twenty-two (21%) of Group A, 11 (26%) of Group B, and 39 (36%) of Group C respondents believed occasional marijuana users were not susceptible to significantly increased mental health and cognitive problems while chronic users were.

The combined responses of all groups showed that 164 (64%) of the original sample population of 260 respondents believed that both occasional and chronic off-duty marijuana use would increase employees susceptibility to mental health and cognitive problems. Twenty-four (9%) of the total respondents believed neither occasional nor chronic off-duty marijuana use would significantly increase a user's susceptibility to mental health or cognitive problems. None of the respondents believed the occasional off-duty user was more susceptible than chronic users

to mental health or cognitive problems. Seventy-two (27%) of the total respondents indicated they believed occasional off-duty use would not cause significant susceptibility to mental health and cognitive problems while chronic off duty use would. Results can be found in Table 7 and Table 8.

Table 7

Responses to the fifth questionnaire item, “Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to mental health/cognitive problems “expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Yes in both the occasional user and the chronic user	81	29	54	164
b. No in both the occasional user and the chronic user	4	3	17	24
c. Yes in the occasional user but no in the chronic user	0	0	0	0
d. No in the occasional user but yes in the chronic user	22	11	39	72
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 8

Responses to the fifth questionnaire item, “Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to mental health/cognitive problems “expressed in percentages.

Answer Options	Group A	Group B	Group C	Totals
a. Yes in both the occasional user and the chronic user	76%	67%	49%	64%
b. No in both the occasional user and the chronic user	4%	7%	16%	9%
c. Yes in the occasional user but no in the chronic user	0%	0%	0%	0%
d. No in the occasional user but yes in the chronic user	21%	26%	36%	27%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The sixth questionnaire item was developed to solicit organizations managerial personnel's opinions of whether the potential for off-duty marijuana use to increase employee susceptibility to physical health problems such as chronic obstructive pulmonary disease, pulmonary infections, cancer, and cardiac problems. Seventy-six (71%) of Group A respondents, 25 (58%) of Group B respondents, and 53 (48%) of Group C respondents indicated they believed employees who use marijuana while off-duty, regardless of whether the use was occasional or chronic, would have increased susceptibility to physical health problems. Six (6%) of Group A respondents, four (9%) of Group B respondents, and 25 (23%) of Group C respondents believed occasional off-duty use would not significantly increase an employee's susceptibility to physical health problems whereas, chronic use would.

One (1%) respondent from Group A and one (2%) from Group B indicated they believed occasional off-duty marijuana use was more likely to significantly affect an employee's susceptibility to physical health problems while chronic use would not. No respondents from Group C indicated the belief that occasional off-duty marijuana use was more hazardous to employee health than chronic use. Twenty-four (22%) of Group A respondents, 13 (30%) Group B respondents, and 32 (29%) Group C respondents did not believe off-duty occasional marijuana use significantly increase an employee's susceptibility to physical health problems however, chronic use would pose a threat to an employee's physical health.

The combined responses of all groups showed that 154 (59%) of the original sample population of 260 respondents believed that both occasional and chronic off-duty marijuana use would increase an employee's susceptibility to physical health problems. Thirty-five (13%) of all respondents indicated they believed both occasional and chronic off-duty marijuana use would not result in significantly increased risk to an employee's physical health. Only two (1%)

of the total respondents indicated occasional off-duty marijuana use placed an employee's physical health at risk while chronic use would not. Sixty-nine (27%) of the respondents indicated occasional off-duty marijuana use posed little threat however; chronic use would significantly increase an employee's susceptibility to physical health problems. Results can be found in Table 9 and Table 10.

Table 9

Responses to the sixth questionnaire item, "Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to physical health problems" expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Yes in both the occasional user and the chronic user	76	25	53	154
b. No in both the occasional user and the chronic user	6	4	25	35
c. Yes in the occasional user but no in the chronic user	1	1	0	2
d. No in the occasional user but yes in the chronic user	24	13	32	69
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 10

Responses to the sixth questionnaire item, "Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to physical health problems" expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Yes in both the occasional user and the chronic user	71%	58%	48%	59%
b. No in both the occasional user and the chronic user	6%	9%	23%	13%
c. Yes in the occasional user but no in the chronic user	1%	2%	0%	1%
d. No in the occasional user but yes in the chronic user	22%	30%	29%	27%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The seventh questionnaire item was related to the second research question which sought to determine how a given group of agencies managerial personnel viewed the possible health impacts that may result from the off-duty use of marijuana by employees. This questionnaire item provided data which would allow this researcher to compare respondent's views of the physical, mental, and social health effects that may potentially occur as the result of the use of one of two distinctly different intoxicating substances, and whether specific groups of agencies viewpoints of the use of the substances tended to conflict. Of course, one of the intoxicating substances was marijuana, which is illegal under federal law and legal in a limited number of states. The second substance was alcohol which is legal under both federal and state laws. Seventy-three (68%) of Group A respondents, 27 (63%) of Group B respondents, and 85 (77%) of Group C respondents indicated they believed alcohol use was more harmful to a person's physical and mental health and was a detriment to social health. Only 34 (32%) of Group A respondents, 16 (37%) of Group B respondents, and 25 (23%) of Group C respondents indicated they felt that marijuana was more harmful than alcohol. Of the total population of 260 respondents, 185 (69%) believed alcohol was more harmful from health perspectives as opposed to 75 (31%) who believed marijuana was more harmful. Results can be found in Table 11 and Table 12.

Table 11

Responses to the seventh questionnaire item, "From purely physical health, mental health, and social health perspectives, which of the following drugs do you believe is the most harmful" expressed in volumes

Answer Options	Group A	Group B	Group C	Totals
a. Alcohol	73	27	85	185
b. Marijuana	34	16	25	75
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 12

Responses to the seventh questionnaire item, “From purely physical health, mental health, and social health perspectives, which of the following drugs do you believe is the most harmful “expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Alcohol	68%	63%	77%	69%
b. Marijuana	32%	37%	23%	31%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The fifth, sixth, and seventh questionnaire items were developed to provide answers to the second research question, “How does a given group of agencies’ managerial personnel view the potential health impact on employees who may use marijuana while off-duty.” Information contributing to the answers for the second research question was obtained via a comparison of the responses for the fifth and sixth questionnaire items. Not surprisingly, the findings of the fifth and sixth questionnaire were similar to the findings of the third and fourth questionnaire items which solicited respondent viewpoints on how off-duty marijuana use would impact an employee’s on-duty optimal mental and physical work capacities. The comparison of the fifth and sixth questionnaire items indicated Group A, which was comprised of respondents from states without marijuana legalization, overall viewed employee marijuana use as more detrimental to employee mental and physical health than did Group B, which contained respondents from states with medical marijuana legalization. Group C, which was comprised of respondents from states with both medical and recreational marijuana legalization, viewed off-duty marijuana use to be of a lesser impact on employee mental and physical health than did the respondents of Groups A and B. Surprisingly, analysis of the seventh questionnaire item appeared to reveal that a majority of all three groups viewed alcohol as a more harmful substance. The findings of fifth and sixth questionnaire items suggested that with state

legalization of marijuana comes a certain degree of social acceptance of its use, even among emergency service and public service organizations. The findings of the seventh questionnaire item are a bit more nebulous. It is apparent that the majority of respondents from all groups believe alcohol is a more dangerous substance than is marijuana relative to mental, physical, and social health. The data does not however, empirically prove that the majority of all three groups actually would approve of marijuana use in lieu of alcohol use by the employees of their organizations.

Questionnaire research question 3 results

The third research question was, “How does a given group of agencies’ substance abuse policies address the off-duty use of marijuana by employees.” Answers to this question were provided via the combined respondent answers of questionnaire items eight and nine. Questionnaire item eight allowed the recipient to select more than one answer and asked respondents how their agencies’ substance abuse policies outlined drug testing requirements. Eighty-nine (83%) of Group A respondents, 35 (81%) of Group B respondents, and 87 (79%) of Group C respondents indicated their organizations conducted pre-employment drug tests. Random drug tests were utilized by 66 (62%) Group A organizations, 12 (28%) Group B organizations, and 44 (40%) Group C organizations. Thirty-six (34%) of Group A organizations include drug testing during scheduled physical exams, while only nine (21%) and 16 (15%) Group B and Group C organizations respectively utilized drug testing during scheduled physical exams. Ninety (84%) of Group A organizations, 40 (93%) of Group B organizations, and 90 (82%) of Group C organizations required drug testing when reasonable suspicion of prohibited drug use exists. Twenty-six (24%) of Group A organizations, eight (19%) of Group B organizations, and 24 (22%) of Group C organizations selected the “Other” option. Almost all

respondents of Groups A and C, and all Group B respondents described “Other” policy requirements as on-duty injuries and following an on-duty motor vehicle accident. Appendices A through C contain additional descriptions provided by respondents who selected the “Other” option. Results can be found in Table 13 and Table 14.

Table 13

Responses to the eighth questionnaire item, “How does your agency’s substance abuse policy outline drug testing requirements” expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Pre-employment	89	35	87	211
b. Random	66	12	44	122
c. During scheduled physical exams	36	9	16	61
d. Reasonable suspicion of prohibited drug use	90	40	90	220
e. Other (please specify)	26	8	24	58

Group totals not applicable due to respondents ability to select multiple answers.

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 14

Responses to the eighth questionnaire item, “How does your agency’s substance abuse policy outline drug testing requirements” expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Pre-employment	83%	81%	79%	81%
b. Random	62%	28%	40%	43%
c. During scheduled physical exams	34%	21%	15%	86%
d. Reasonable suspicion of prohibited drug use	84%	93%	82%	86%
e. Other (please specify)	24%	19%	22%	22%

Group totals not applicable due to respondents ability to select multiple answers.

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The ninth questionnaire item was a multiple choice question which asked respondents how their organization's drug policies dealt with employees who tested positive for the inactive metabolite of THC, which, according to literature reviewed, does not produce intoxicating effects on humans. Zero tolerance with immediate termination of employment was selected by 41 (38%) of Group A respondents, 15 (35%) of Group B respondents, and 40 (36%) of Group C respondents. The respondents who indicated an employee positive drug test finding of the inactive metabolite of THC would be case dependent and would result in disciplinary which may or may not result in termination, consisted of 33 (31%) from Group A, 17 (40%) from Group B, and 43 (39%) from Group C. Others who selected employee rehabilitation in lieu of disciplinary action consisted of 21 (20%) Group A respondents, seven (16%) Group B respondents, and 10 (9%) Group C respondents. A total of 12 (11%) Group A respondents, four (9%) Group B respondents, and 17 (16%) Group C respondents selected the "Other" answer option which indicated their organizations substance abuse policies dealt with employees who tested positive for THC in a different manner than listed in the previous choices of the ninth questionnaire item.

Of the Group A respondents who chose the "Other" answer option of the ninth questionnaire item, the majority claimed some type of drug rehabilitation program was either required or was voluntary with potential subsequent disciplinary measures. Three Group A respondents claimed their organizations did not have policies addressing the issue, while others indicated they were unaware of their policies concerning the matter. One Group A respondent indicated his or her agency had an "inconsistent zero-tolerance" policy and one indicated his or her agency only conducted drug testing for current intoxication. Group B responses to the "Other" answer option, although fewer in number, were similar to the Group A responses. Of the Group C respondents who selected the "Other" option, 14 either claimed they were unsure of

their organizations policy stance on the matter or that no policy existed. One Group C respondent indicated his or her organization only had a policy which addressed legal and illegal drugs, but no policy which specifically addressed employee marijuana use. One Group C respondent indicated his or her organization viewed an employee whose drug tested positive for THC as no differently as an employee who tested positive for nicotine. One Group C respondent indicated his or her organization offered a rehabilitation program for a positive marijuana finding, one indicated his or her organization had a zero-tolerance policy which did not require termination, and one indicated positive THC findings was dealt with on a case by case basis. Individual answers for the “Other” option for questionnaire item can be found in Appendices A through C. Quantitative results can be found on Table 15 and Table 16.

Table 15

Responses to the ninth questionnaire item, “Which of the following best describes your agency’s drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication” expressed in volumes.

Answer Options	Group A	Group B	Group C	Totals
a. Zero tolerance (immediate termination of employment)	41	15	40	96
b. Case dependent (disciplinary action which may or may not include termination)	33	17	43	93
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	21	7	10	38
d. Other (please specify)	12	4	17	33
Totals (N=260)	107	43	110	260

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

Table 16

Responses to the ninth questionnaire item, “Which of the following best describes your agency’s drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication” expressed in percentages.

Answer Options	Group A	Group B	Group C	Average
a. Zero tolerance (immediate termination of employment)	38%	35%	36%	36%
b. Case dependent (disciplinary action which may or may not include termination)	31%	40%	39%	37%
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	20%	16%	9%	15%
d. Other (please specify)	11%	9%	16%	12%
Totals (N=260)	41%	17%	42%	100%

Note. Group A represents responses from states with no marijuana legalization, Group B represents responses from states with medical marijuana legalization, and Group C represents responses from states with both medical and recreational marijuana legalization.

The tenth questionnaire item was a general request which asked respondents to provide any additional pertinent information or comments they may have had concerning the subject matter of the questionnaire which may enhance the contents of this research project. Seventeen Group A respondents, nine Group B respondents, and 25 Group C respondents provided additional comments. The additional comments consisted of a wide array of viewpoints concerning off-duty employee marijuana use. Within each group some respondents viewed any use of marijuana by employees associated with emergency service and public service organizations as unacceptable while others appeared to have viewed the subject as a benign issue provided the use of the substance did not interfere with the organization’s mission. Others, particularly in Group C, viewed marijuana use as a viable option to alcohol use. Other comments provided potential policy options and associated justifications. Other respondents alluded to possible legal concerns which organizations may encounter due to conflicts between federal and state marijuana laws. Due to the length and wide variety of opinions contained in the

comments provided by respondents in the tenth questionnaire item, a comprehensive analysis was not provided in this text in an effort to avoid excess distraction from the research. The original text of the comments however, may be useful to future readers of this ARP and can be found in Appendices A through C.

Interview Results

Three personal interviews were conducted between July 7, 2013 and August 28, 2013. One of the interviews was conducted with the Fire Chief of Duvall-King County Fire Protection District 45. Duvall-King County Fire Protection District is located in Washington State where recreational marijuana use was recently legalized. The second interview was conducted with a Battalion Chief from a municipal fire department in Colorado, the Castle Rock Fire Department. These two interviewees were selected because each is located in a state where medical and recreational marijuana use has been legalized. The first two interviewees were selected because this researcher expected that the relatively new state laws, concerning primarily legalized recreation marijuana, may have affected their policies in some manner, or may have been the catalyst for current planning of policy revisions. The third interview was conducted with a United States DOJ attorney who was assigned as a liaison to the Colorado regional DEA headquarters. The DOJ attorney was also an active Volunteer Division Chief for the LFPD. The DOJ attorney was selected as an interviewee because his knowledge of federal and state laws concerning legalized marijuana use could be useful in determining LFPD's substance abuse policies effectiveness and potential necessary revisions. The attorney was also selected as an interviewee because his viewpoints from the perspective of a volunteer Division Chief of the LFPD would most likely be influenced by his knowledge of the law and existing LFPD policies.

A personal interview was conducted via telephone with Fire Chief David Burke of the Duvall-King County Fire Protection District 45 on July 31, 2013. Burke implied that because his organization's substance abuse policy's zero tolerance stance has not changed since before Washington State legalized recreational marijuana use, the potential for employees to use the substance may have not increased despite its legal status in the State. He said, "...I could be wrong but I don't think we have anybody that has been an active user anyway." It was apparent Burke believed that unless his organization and the local firefighters union agreed to amend policies in such a manner to allow for increased leniency on marijuana use by employees, any potential increase for marijuana use by employees would be tempered by their fear of possible disciplinary measures dictated by current policies (D. Burke, personal communications, July 31, 2013).

Chief Burke expressed he had some concerns which had arisen as the result of the conflicting State and Federal marijuana laws. He questioned what would happen if personnel employed by agencies in states with legalized recreational marijuana were not prohibited by policy from using the substance. His concerns were primarily relative to emergency mobilization of those personnel to provide assistance to other states or the federal government. Burke posed the question, "So, what does that mean if our people are legally doing something in our state and then they go as a part of a federal team or response and they have that (THC) in their system?" He also suggested the possibility that an agency's chances of receiving federal grant funding may be affected if they allow their employees to participate in an activity which is a violation of federal law, regardless of whether or not that activity is legal in the state in which the agency is located. Chief Burke was unable to provide definitive answers to these issues but he did say, "...there's not much help from the federal level because this is all new. The States

brought it upon the Federal government so, when you call and ask those questions there's not much support" (D. Burke, personal communications, July 31, 2013).

In reference to the conflicts between state and federal laws concerning marijuana, Burke used the analogy of alcohol use. He pointed out that during the prohibition of alcohol there was a degree of "social scrutiny" of the use of the substance but after the prohibition of alcohol ended, the degree of social scrutiny of alcohol diminished. Following the prohibition analogy he asked the question "Is it fair to keep scrutinizing marijuana use when it's legal?" He also discussed how some agencies have successfully prohibited the use of tobacco by employees, whether on or off-duty, based on the negative health risks inherent to the use of the product. It could be inferred that if agencies are able to successfully enforce policies against employee use of tobacco, then enforcing a policy prohibiting the use of marijuana should be an easily achievable objective (D. Burke, personal communications, July 31, 2013). A complete transcript of the interview with Chief Burke can be found in Appendix D.

The next interview conducted was a personal interview with Battalion Chief Rich Martin of the Castle Rock Fire Department in Colorado on August 28, 2013. When asked if he believed if the recently legalized use of recreational marijuana has affected the potential for employees of his organization to use the substance he replied, "I believe that the potential for the use of marijuana by employees is going to go up dramatically." He believed that increased access to marijuana by citizens of Colorado resulting from its recreational legalization and increased social acceptance would greatly increase the possibility of employees using the substance "...in the near future." Due to his perceived increased marijuana use by the public, Martin assumed his agency would most likely encounter an increased number of new candidates for employment who would test positive for THC on pre-employment drug screenings. He said that, regardless

of the legal status of recreational marijuana use in the State of Colorado, his agency will continue deny employment to candidates who are found to be marijuana users "...because it's still a federal offense" (R. Martin, personal communication, August 28, 2013).

Battalion Chief Martin said that his municipality has amended its substance abuse policies to stress that, although both medicinal and recreational marijuana use is legal in the State of Colorado, its use by any employee of the municipality will not be tolerated on the basis of existing Federal law which prohibits marijuana use of any kind. He inferred the reason for the policy amendment was apparently because the length of time THC remaining in the body and its intoxicating effects cannot be precisely measured. In support of this inference, Martin said, "With alcohol we have a 10 hour prior to duty limit, but 10 hours with marijuana still isn't going to make a difference, so, it's an issue where that's concerned." Although the municipality of Castle Rock has a zero-tolerance for employees who may use marijuana whether on or off-duty, Chief Martin said that the Town government's human resource department would not condone random drug testing of any of the municipality's employees because they viewed it as an infringement upon employee rights. Although the Town government has a zero tolerance policy for employee marijuana use, it appeared Martin believed its enforcement may be difficult with a policy that prohibits random drug testing. In reference to the Town's human resource department's hesitancy to strengthen its zero tolerance substance abuse policy through the implementation of mandatory random drug testing, he said, "That's the biggest hurdle we've got to try and overcome." Martin also had concerns about the implications for families of employees who may be proven to be marijuana users following a catastrophic debilitating or lethal event while on-duty. He believed that if such an event were to occur, the family of such an employee may no longer be eligible for federally funded programs such as Public Safety Officers Benefits

(PSOB). Also, with the inability to conduct random drug tests, Martin believed that the agencies compliance with the Drug Free Workplace Act of 1998 could be compromised because, "...until we get to a state to where we're able to test people randomly, we won't have an idea (of employee marijuana use)" (R. Martin, personal communications, August 28, 2013). A complete transcription of the interview with Battalion Chief Martin can be found in Appendix E.

On August 3, 2013 a personal interview was conducted with Charles Walden, a United States DOJ attorney who was assigned as a liaison to the Colorado regional DEA headquarters. Walden was also a volunteer Division Chief for the LFPD. When asked what employer issues or concerns he had observed, either directly or indirectly, dealt with since Colorado legalized recreational marijuana, Walden offered three specific circumstances accompanied with a variety of pertinent information. One circumstance he discussed involved a pharmacy company representative who had concerns about the organization's substance abuse policy and its effectiveness relative to the recent Colorado State legalization of recreational marijuana. Due to the nature of the organization's services and products, it's policy had been drafted to protect the company, it's employees, and it's customers from employee drug use in the workplace but "...not residual content in the body." The concern relative to the use of recreational marijuana had apparently arisen as the result of an employee who tested positive for THC during a company sanctioned drug test. According to Walden, the positive finding was consistent with off-duty use of marijuana. Since the organization's policies addressed only pharmaceutical classes of drugs available in the workplace he implied the company had no ground for disciplinary action of any kind in this particular instance. Walden suggested that the only recourse for the company, if it wished to discourage any future off-duty marijuana use by its employees, would be to amend its substance abuse policy to include its desired prohibition of the

off-duty use of marijuana by employees and potential disciplinary measures for employees who choose to partake in activities contrary to the policy. He also discussed the perspective of transportation industry employers whose business relies on licensing through federal departments such as the United States Department of Transportation (DOT) and the Federal Aviation Administration (FAA). Walden said that zero-tolerance policies for such employers, whether they are in the private or government sectors, are easily and unquestionable enforced because licensing, for instance of truck drivers and aircraft pilots, falls under the domain of the federal government which has a strict zero-tolerance policy for marijuana use (C. Walden, personal communications, August 1, 2013).

Walden also discussed concerns presented to him from a representative of a division of a municipality in Colorado which conducts building inspections. He implied the employer's substance abuse policy was lenient towards employee's who were confirmed to abuse drugs by steering those employee's "...into programs of rehabilitation," and were subsequently monitored in the workplace." The employer questioned the potential liability of the municipality by allowing an employee, who is proven to be prone to substance abuse, work in an environment controlled primarily by a private entity which may not have adequate substance abuse policies. Unfortunately, Walden was unable to provide an answer to this specific situation but apparently viewed it as a plausible concern. Walden made it clear however, that particularly in Colorado, there is firm legal precedence for an organization to have a firm policy which prohibits use of marijuana, whether on or off-duty, by its employees. He mentioned two separate occasions in Colorado where employees appealed their termination of employment on the legal basis of marijuana use. Although both medical and recreational marijuana use were legal in the State of Colorado, the termination of the employees was upheld as legal by both the Colorado Court of

Appeals and the Colorado Supreme Court. Walden did however, state that it would be a prudent practice, according to the findings of a case separate from the two cases previously mentioned, to “Consider all other mitigating and aggravating circumstances in addition.” His implication was that, on the basis of a positive drug test, it may not be as fair or beneficial to an organization to terminate a long term employee with an outstanding performance record as it would be to terminate a short term employee with a mediocre or poor performance record (C. Walden, personal communications, August 1, 2013).

After review of the LFPD’s substance abuse policies, Walden was asked, “If we were to terminate an employee today who tested positive for the inactive metabolites of THC, what do you believe would happen if the employee were to legally challenge the termination?” He indicated that LFPD’s current policies provided insufficient content to successfully defend such a challenge. Due to the lack of guidance provided in the District’s current policies, Walden suggested that instead of termination of an employee who tested positive for marijuana use but who was not intoxicated while on-duty, the District would probably be subject to far less potential civil action by requiring the employee to seek treatment through its employee assistance program or a drug rehabilitation program. If the District wishes to have an effective zero-tolerance program, Walden suggested that a comprehensive drug and alcohol abuse policy be adopted and accompanied with a substance abuse recognition and education program. With a drug and alcohol abuse policy that includes mandatory random drug testing, he stressed that it is vital to adhere to testing because if, “...employees are never subject to them, then eventually they’ll think the employer’s stance on no drugs is a joke.” Walden also stressed the importance of ensuring the District’s employee assistance program (EAP) is sufficiently robust to assist employees who may have an increased potential to resort to marijuana, other drug, or alcohol use

in an effort to alleviate their problems. He said, "...you need to ensure the EAP availability for paid visits be at least the industry standard of the 5 to 10 range; if somebody really does have a problem, fewer than that aren't enough" (C. Walden, personal communications, August 1, 2013). A complete transcription of the interview with Charles Walden can be found in Appendix F.

The three interviewee's responses contributed to the answer of the third research question which was created to discover information related to how a given group of agencies substance abuse policies address the use of marijuana by employees. Each interviewee made it evident that the conflicts between state and federal marijuana laws should be an obvious concern for any agency within a state with legalized marijuana. In combination their responses made it apparent that the absence of an adequate and enforceable substance abuse policy addressing off-duty medical marijuana could have negative results on an organization's effectiveness, and the well-being of its customers, employees and their families. Each indicated that a zero-tolerance policy is acceptable and, in the case of the interviewee of the municipal fire department in Colorado and the DOJ attorney, a policy requiring enforced drug testing is desirable if off-duty marijuana use by employees is to be effectively and appropriately discouraged.

Discussion

Marijuana has been used by many societies throughout history primarily for medicinal and spiritual purposes. It's acceptance as a medicinal aid existed in the United States until the early 1900's when the prohibitionist movement spurred changes in legislation which ultimately resulted in the widespread ban of the substance (Procon.org, 2012). For decades, despite its illegal status, marijuana use by the purported American "counter-culture" has remained primarily as a recreational substance (New York Daily News, 2012). Over the last 15 years however, its social acceptance as a medicinal aid has resurfaced to such an extent that 20 states now have

medicinal marijuana laws and two of those states have both medical and recreational marijuana law (NCSL, 2013). Despite the growing acceptance of marijuana use, there was very little discoverable consensus among researchers regarding the substance's benefits versus its harmful effects. Furthermore, literature discussing the risks and benefits of marijuana use, particularly off-duty marijuana use by emergency services workers, was severely limited which dictated the need for this researcher to locate literature concerning generalized potential performance and health effects on employees and potential policy concerns. Regardless of differing consensus between researchers, emergency service agencies should be cognizant of, and focus on the possible detrimental performance and health impacts which could occur from the use of marijuana by employees and institute appropriate policies addressing marijuana use.

According to Lemke (2009) the recreational use of marijuana by athletes has become popular among some in lieu of alcohol or other intoxicating substances which have been proven to be detrimental to health and athletic performance. Similar to athletes, the job requirements of firefighters often require an elevated degree of physical fitness and mental acuity. It is possible that some members of fire service organizations may only be aware of the purported positive or neutral effects of marijuana use. They may also be lulled into the perception of marijuana as a benign substance secondary to its growing social acceptance. The consequence of this acceptance may result in some fire service personnel adopting a viewpoint similar to that of athletes who choose to use recreational marijuana, particularly in states in which recreational marijuana has been legalized. Without adequate policies addressing this issue the potential for marijuana use and the potential for fire service agency employees to experience its possible negative performance and health results may be increased.

Pittman (2012) claimed marijuana use has inherent residual affects which are manifested in decreased employee productivity. The claims by Pittman (2012) of decreased employee productivity were countered by Armentano (2012) whose study implied that in the chronic marijuana user there were no significant performance impairments noted in test subjects even when residual active levels of THC remained in their systems. Armentano (2012) did state however, that THC levels which did not result in notable performance impairment in chronic users were consistent with levels which caused intoxication in occasional users immediately following use. Armentano's study simply implied that chronic use may result in increased tolerance levels similar to other substances of abuse. The NAACAC (2012) however, found that chronic marijuana use is linked to increased incidences of residual psychological disorders such as schizophrenia and decreased cognitive abilities. The NAADAC also noted that many marijuana users view their quality of life as lower than non-marijuana users. Regardless of the opposing findings of Armentano, the use of any substance which potentially could result in a decline of employee productivity, mental health, and general sense of well-being would be detrimental to the mission of any organization.

In addition to potential employee performance impacts due to the residual mental health issues resulting from marijuana use, employers should be concerned with the possible physical health impacts of its use. As previously stated, the job requirements of firefighters often require an elevated degree of physical fitness and mental acuity. The literature search revealed documents which indicated marijuana use could potentially affect not only a person's mental health but physical health as well. The BLF (2012) indicated smoking marijuana could be the cause of a variety of disorders ranging from immune system deficiencies, to chronic productive cough, to lung cancer. The findings of Cancato et al (2007) and Kalhan et al. (2012) were

similar with those of the BLF regarding the possible pulmonary effects of chronic marijuana use. These physical conditions could debilitate an employee to the extent, particularly employees in professions which require a high degree of physical fitness, that he or she eventually may no longer be capable of effectively and safely performing work requirements. BLF (2012) also indicated smoking marijuana can significantly double risk of heart attack. This finding in particular should be of concern to fire service agencies because cardiac arrest has long been known as the most common cause of death among firefighters in the United States. By ignoring this finding and not appropriately addressing the use of legalized recreational marijuana through policy, agencies may inadvertently contribute to increasing the occurrences of firefighter death due to cardiac arrest.

The questionnaire data collected indicated the majority of the 206 emergency service leadership personnel respondents believed that off-duty use of marijuana, whether occasional or chronic, would negatively affect an employee's ability to function at both optimal and physical capacities while on-duty. The percentages of respondents with this belief was highest in states with no marijuana legalization (Group A), mid-range in states with only medicinal marijuana legalization (Group B), and lowest in states with both medicinal and recreational marijuana legalization (Group C). For instance; eighty-two (77%) of Group A respondents, 29 (67%) or Group B respondents, and 55(50%) of the Group C respondents believed off-duty marijuana use by employees would most likely to affect their ability to perform at optimal mental capacity while on-duty. All of these trends appeared to be indicative of incremental levels of social acceptance by emergency service leadership personnel of marijuana use relative to incremental leniency of state marijuana laws.

Similar trends were noted in respondent's beliefs of how off-duty marijuana use would most likely affect an employee's ability to perform at optimal physical capacity, how it may increase an employee's susceptibility to mental health and cognitive problems, and how it may increase an employee's susceptibility to physical health problems. If emergency service leadership personnel have more liberal beliefs of marijuana use in states where it has been legalized, it can be assumed that there is an increased possibility that their organizations may eventually adopt policies which are more lenient regarding employee off-duty marijuana use. These previously mentioned trends were the most indicative of incremental levels of social acceptance of marijuana use relative to incremental leniency of state marijuana laws. Each of the additional trends can be found in the results section or Appendices A through C. Interestingly, 73 (68%) Group A respondents, 27 (63%) Group B respondents and 85 (69%) Group C respondents viewed alcohol as a more harmful than marijuana from a physical health, mental health, and social health perspective. While these results could be construed to indicate the majority of the respondents would prefer that employees of their organizations use marijuana as a safer alternative to alcohol, this simply may not necessarily be the case. Another plausible explanation of these results may be that there is greater evidence of the negative impacts of alcohol since it has been a federally legal substance for many decades as opposed to marijuana, which has relatively recently received an increase of social and legal acceptance.

According to DOL (n.d., b), most agencies which conduct drug testing do so for pre-employment screening, reasonable suspicion of illegal drug use by employees, after an on-duty accident, random and periodic screenings, and after an employee returns to work following a substance abuse rehabilitation program. The questionnaire data suggested that the bulk of respondent's agencies were concerned to some degree with not only employee marijuana use but

use of other substances by employees. Eighty-nine (83%) of Group A agencies, 35 (81%) of Group B agencies, and 87 (79%) Group C agencies conduct pre-employment drug screening of candidates. The percentages of agencies in all three groups were even higher in cases where a reasonable suspicion of prohibited drug use by an employee was present. Alternatively, the use of random drug testing required by policy was significantly lower in all three groups. Sixty-six (62%) Group A agencies, 12 (28%) Group B agencies, and 44 (40%) Group C agencies conducted random drug screenings of their employees. The lower number of agencies which conducted random drug testing could be because some respondent's agencies were located in a limited number of states with legalized medical marijuana where, according to Faust and Gilbreth (2013), it is unlawful to discipline non-intoxicated employees who possess a valid medical marijuana card and test positive for THC (para. 12). However, according to Dominguez (2013) and Ferguson (2013), employers in Colorado have the legal right to administer disciplinary action against an employee who tests positive for any substance which is illegal under federal law, whether or not intoxication is present. The respondent data of all three groups indicated a relatively low number of policy requirements for drug testing during scheduled physical exams. This data may reflect that either a large number of the recipient's agencies do not require regular physical exams or, if they do, drug testing during such exams is perceived not to be useful or is prohibitive in some way. In the case of the LFPD, scheduled physical exams and pre-employment physical exams have always included drug screening primarily because the District's current policies, however, although perfectly legal in Colorado, have no requirement for random drug testing. The philosophy is that at least there is some effort to detect potential use of illicit substances by its employees. Among the majority of respondents within each group who indicated their agencies had "other" reasons for drug testing, most defined on-duty injuries

and involvement of on-duty motor vehicle accidents as a policy requirement for drug testing. Although LFPD has never required drug testing following on-duty injuries or on-duty motor vehicle accidents, such a policy requirement could prove to be beneficial in protecting the District and the public from potential future liabilities and incidents resulting from employee use of intoxicating substances.

According to Tratenberg (2012), all fire service agencies should have a firm zero-tolerance policy because without one it may be possible for agency employees to protect fellow employees who may be abusing substances which ultimately could lead to increased problems for the individual, the agency, the customers of the agency, and the fire service as a whole. According to respondent data of the total 260 primary population, 227 (87%) of the agencies drug policies dealt with employees who test positive for THC differently. Ninety-six (36%) had zero-tolerance policies which required the immediate termination of employment of any employee with a positive finding, regardless of whether or not intoxication was present. Ninety-three (37%) of the respondents indicated their agencies had what could be considered zero-tolerance policies however, employees who were found to have THC in their systems were handled on a case-by-case basis which may or may not include termination. Thirty-eight (15%) of the respondents indicated their agencies policies required a voluntary drug abuse treatment program in lieu of disciplinary actions.

The remaining respondents indicated their agencies dealt with employees who tested positive for the inactive metabolite of THC in a variety of different ways. One respondent specifically indicated that his agency viewed an employee who tested positive for THC without intoxication would be treated no differently than an employee who tested positive for tobacco use which is legal under federal law. This response was contrary to viewpoint of Tratenberg

(2012) concerning the implications of not having a zero-tolerance policy and the viewpoints presented in the majority of the respondent data. It was however, consistent with the views of Swinhart (2012) who indicated that since both medical and recreational marijuana were legal in his state, his agency viewed off-duty marijuana use as an individual right and, provided the use of the substance did not interfere with an employee's work performance or cause legal issues, his agency had no plans to discipline employees who may be found to have the inactive metabolite of THC in their systems while on-duty. Although both medical and recreational marijuana are legal in Colorado, this researcher does not believe the off-duty use of marijuana should be tolerated by the LFPD partially based on the potential for its use to result in residual effects on employees such as declines in productivity as discussed by Pittman (2012), the potential for increased susceptibility to mental disorders and cognitive function deficits as presented by NAADAC (2012), and the increased potential for pulmonary, cardiac, and other negative health effects as presented by BLF (2012) and Concato et al. (2007).

In an interview with Fire Chief David Burke, he indicated his agency's zero-tolerance substance abuse policy was apparently effective in discouraging recreational marijuana use by employees even though its use is legal in his agency's State (D. Burke, personal communications, July 31, 2013). Burke expressed concerns an agency should have regarding the legal implications of not discouraging its employees from using a substance that is classified by the federal government as, "...dangerous with no currently accepted medical use and a high potential for abuse" (DEA, n.d., para. 3). Although Burke was not able to provide specific examples of potential legal implications he provided questions concerning intergovernmental activities, possibly with other states and the federal government where any use of marijuana by responders is illegal.

The LFPD participates in national deployments for wildland fires on a regular basis. If the policies of the District are not adequate concerning employee recreational marijuana use, could that possibly affect its ability to participate in such activities in the future, or could it possibly affect the District's ability to acquire federal grant funding? Presently, answers to those questions are not completely clear due to the relatively new concept of state legalization of recreational marijuana. However, it is undeniable that not having adequate policies which discourage the employees of the LFPD to use state legalized recreational marijuana puts the organization at odds with federal laws which in the future could possibly place the organization in an undesirable political situation.

Similar to Chief Burke, Battalion Chief Martin of Castle Rock Fire Department in Colorado stated his agency had a zero-tolerance policy. Due to the recent legalization of recreational marijuana in Colorado he expressed concerns that "...the potential for use of marijuana by employees is going to go up dramatically" (R. Martin, personal communications, August 28, 2013). He stated his organization's policies have been amended to stress that both medicinal and recreational marijuana use will not be tolerated because it remains illegal under federal law. Despite the zero-tolerance policy, Martin believed a zero-tolerance policy will be difficult to enforce because his organization's human resources department does not require random drug testing on the basis they feel it is an infringement on employee's rights. Martin said, "...until we get to a state to where we're able to test people randomly, we won't have an idea (of employee marijuana use)" (R. Martin, personal communications, August 28, 2013). According to Dominguez (2013) however, employers in Colorado do have the right to utilize disciplinary measures as defined in their policies in cases where employees have a positive drug test whether the inactive or active form of THC is detected. The information presented by

Dominguez was supported by Ferguson (2013) who described Colorado statutes regarding disciplinary actions against employees who test positive for prohibited drug use. Ferguson (2013) implied that under Colorado law, employers have the right to drug test prospective employees and current employees and to refuse employment to applicants or terminate current employees who test positive for substances illegal under state or federal laws. Since organizations in Colorado have no apparent restrictions on drug testing employees and administering disciplinary actions to those who are found to have used prohibited substances, it would be in the best interest of the LFPD to include specific drug testing guidelines in its policies if the District wishes to have the capability of effectively enforcing a substance abuse policy. Enforcing a policy which requires drug testing to discourage off-duty marijuana use by employees may be easily achieved even though intoxication is not present because, according to Tappero (2013), the inactive metabolite of THC remains stored in the body and is easily detectible via urinalysis for up to 30 days after use.

In an interview with Charles Walden, a United States DOJ attorney assigned as a liaison to the Colorado regional DEA headquarters and a Volunteer Division Chief with the LFPD, he expressed concerns that the current LFPD substance abuse policy was inadequate in addressing the potential use of legalized marijuana by off-duty employees. He did however state that in Colorado there is a well-defined legal precedence for employers to have a substance abuse policy which prohibits the use of marijuana by its employees whether the use is on-duty or off-duty (C. Walden, personal communications, August 1, 2013). One of the legal precedencies he referred to was presented by Ferguson (2013) in which a Colorado employer terminated an employee on the basis of a drug test which resulted in evidence of marijuana use. The employee challenged the legality of the termination however the employee's appeal was ultimately found by the State of

Colorado to be legal since marijuana use is illegal under federal law. The recognition of this legal precedence was reflected in an article by Drugfree.org (2012), in which the Denver Police Department stated it would not, under any circumstances, tolerate marijuana use by any of its employees. Walden suggested that a standalone comprehensive drug and alcohol abuse policy, a standalone drug testing policy, well established substance abuse recognition and education programs for both executive and line staff, and appropriate rehabilitation guidelines were all vital components. He said, “To terminate an employee without all of these things in place is not only unfair, it’s not defensible” (C. Walden, personal communications, August 1, 2013). In reference to the standalone drug testing policy, Walden stressed that adhering to a drug testing policy is essential because without this policy, “...employees are never subject to them, then eventually they’ll think the employers stance on no drugs is a joke” (C. Walden, personal communications, August 1, 2013).

The overall results of this research indicated that the majority of the questionnaire respondents viewed off-duty marijuana use as a potential detriment to employee performance and health. In groups of respondents from states with legalized marijuana however, particularly Group C which contained recipients from states with both legalized medicinal and recreational marijuana, appeared to view off-duty marijuana use as less of a detriment to employee performance and health than did respondents from states with more stringent marijuana laws. Although these results were not empirically conclusive, it could be determined that where legalization of marijuana occurs, a proportionate level of increased social acceptance also occurs, even among leadership personnel of the emergency service industry. This assumption was contrasted however by the fact that the vast majority of the respondents indicated their

organizations currently utilized policies which addressed the use of off-duty marijuana in a variety of fashions.

The use of such policies makes it evident there is still a considerable amount of organizational concern over controlling the use of marijuana by employees. The results of the interviews conducted for this research presented a variety of legitimate concerns organizations should consider with regard to the potential impacts of employee marijuana use on an organization and prospective policy options for an organization to consider. Similarly, the literature reviewed offered information regarding policy considerations as well as performance and health impacts of employee marijuana use which should be of concern to organizations.

In summary, the LFPD's substance abuse policies could be amended to more effectively discourage the off-duty use of legalized recreational marijuana by its employees. Although past history has not presented the District with the problem of dealing with an employee who may have used marijuana or other state or federally illegal substances, it is possible that such issues may merely not have been detected. If LFPD were to simply accept the State of Colorado's majority voting populace's opinion of recreational marijuana use and not amend its policies to discourage employee marijuana use, the possibility of detrimental effects to its employees may increase and its ability to provide the level of service its constituents deserve may be negatively affected. Additionally, by not appropriately addressing the use of recreational marijuana in its policies, the District would place itself at odds with federal entities which view marijuana as an illegal and harmful substance.

Recommendations

The recommendations derived from research conducted for this ARP were based on inadequate LFPD policies addressing the potential off-duty use of recreational marijuana by

employees of the District. Due to Colorado's recent legalization of marijuana's recreational use, private and commercial cultivation, and commercial sales, it is obvious that the substance will be more widely available and more socially acceptable in the State than it was prior to its legalization. With the increased availability of marijuana and its increased social acceptance, the possibility of employee off-duty use of the substance will also increase, particularly in the absence of organizational policies which adequately enforce the prohibition of its use. The literature reviewed showed that marijuana use has potential residual negative employee performance impacts, negative employee health impacts, and potential negative political and legal impacts since the substance is still illegal under federal law. The majority of the questionnaire responses indicated most organizations policies addressed marijuana use and their individual beliefs appeared to have reflected the potential harmful effects of marijuana use discovered in the literature. All organizations, particularly those in states which have legalized marijuana, should consider the possible personnel and organizational impacts of employee marijuana use and amend their policies accordingly.

The first recommendation is that LFPD should develop and adopt a standalone substance abuse policy which clearly outlines the District's stance on not only employee and volunteer member marijuana use, but on all potential substances of abuse. Such a policy would assist the District in avoiding the potential detrimental performance, health, and organizational impacts associated with employee marijuana use. Since the recreational use of marijuana is legal in the State of Colorado, the new policy should implicitly address the reasons for the organization's prohibition of its use to avoid potential employee confusion between policy requirements and state and federal marijuana laws. The policy should include specific disciplinary actions applicable to employees who have been found to use marijuana or other prohibited substances. It

should also specify that the District will adhere to a strict zero-tolerance policy for marijuana and other prohibited substance use, and that equitable disciplinary measures will be administered to employees who have violated the policy.

The second recommendation is that LFPD should develop and adopt a standalone drug testing policy which specifies the purpose and frequencies of testing. The historical general practice of LFPD has been to conduct only pre-employment drug testing, drug testing when reasonable suspicion of on-duty intoxication is suspected, and drug testing during scheduled physical exams. Pre-employment drug testing should remain a policy inclusion because it will benefit the District by identifying potential employees who may use prohibited substances thereby enabling the organization to refuse employment to such individuals who may continue to use prohibited substances after accepting an offer of employment. The testing of employees who present the agency with a reasonable suspicion of intoxication while on-duty should remain in the policy because it can either prove or disprove the suspicion provide protection to the District and its employees, and the public. According to the questionnaire results, some of the respondent's agencies policies required random drug testing and testing of drivers of official vehicles following on-duty motor vehicle crashes. The testing of drivers involved in on-duty motor vehicle crashes should be included in the policy as a due diligence investigative effort and to potentially avert the possibility of future accidents if the driver was proven to have used prohibited substances. Random drug testing should be an inclusion of the policy because it will serve as a deterrent to potential employee use of prohibited substances and may assist in identifying personnel who choose to use prohibited substances regardless of policy requirements. If pre-employment, reasonable suspicion of on-duty intoxication, post-motor vehicle crash, and random drug testing requirements are included in the policy there should be no need for the

inclusion of drug testing during scheduled physical exams. If the schedule for drug testing is known by potential users they may have the opportunity to avoid detection by temporarily abstaining from prohibited substance use for a sufficient amount of time prior to the test.

The third recommendation is that LFPD should create an additional standalone policy which mandates regularly scheduled training covering the District's substance abuse policy, its drug testing policy, substance abuse recognition and reporting procedures, and the services offered by the District's contracted third party EAP service. Reinforcing employee's knowledge of the District's policies through regularly scheduled training will assist in enhancing employee compliance. Required regularly scheduled training of employees on substance abuse recognition and reporting procedures by a professional qualified in the field would help employees to more accurately identify others who may be abusing prohibited substances thereby mitigating potential risks to coworkers, the District, and the public. By delivering regularly scheduled trainings of the services offered by the District's contracted third party EAP service, employees who may have undetected substance abuse problems or other personal issues which may compromise their work performance would be provided an avenue to confidentially resolve their problems and avoid administrative disciplinary actions. In the words of the DOJ attorney interviewed for this ARP, "You can't have the world's toughest policy and not have the other stuff. You've got to have the training and you've got to have the programs to help the people who may have fallen off to the side because of whatever's going on in their lives" (C. Walden, personal communications, August 1, 2013).

With the increase of social acceptance of marijuana use which, in many states, has resulted in legislation legalizing its use over the past 15 years, it would be prudent for future readers of this ARP to consider the potential negative impacts the use of the drug may cause. As

the result of the legalization of marijuana, particularly in states such as Colorado and Washington, where both its medicinal and recreational use are now legal, it is conceivable that more people will be exposed to marijuana and more people may be prone to its use due to its increased availability, increased social acceptance, and the removal of the criminal factor previously associated with the drug. Since much of the literature currently available is conflicting or inconclusive, leaders in the emergency service industry should err on the side of caution. They should ensure their organization's policies reflect mitigation efforts of the potential negative impacts caused by employee marijuana use by discouraging both the medicinal and recreational use of the substance, and by providing appropriate training for all members of their organizations to increase the probability of policy compliance.

References

- Armentano, P. (2012, July 3). Cannabis and psychomotor performance: A rational review of the evidence and implications for public policy. *Drug Testing and Analysis*, 5, 52-56. doi: 10.1002/dta.1404
- Armentano, P. (2013). The abc's of marijuana and drug testing. *National Organization for Reform of Marijuana Laws Website*. Retrieved July 15, 2013 from <http://norml.org/legal/drug-testing/item/the-abcs-of-marijuana-and-drug-testing>
- British Lung Foundation (BLF) (2012). *The impact of cannabis on your lungs*. Retrieved June 15, 2013 from <http://www.blf.org.uk/Page/Special-Reports>
- Colley, J., Foltin, R.W., Gunderson, E. W., Hart, C. L., Gevins, A., Ilan, A. B, et al. (2010). Neurophysiological and cognitive effects of smoked marijuana in frequent users. *Journal of the American Medical Association*. 307 (2), 173-181. doi: 10.1001/jama.2011.1961
- Concato, J., Crothers, K., Fiellin, D. A., Mehra, R., Moore, B. A., Tetrault, J. M. (2007). Effects of marijuana smoking on pulmonary function and respiratory complications, a systematic review. *Journal of the American Medical Association*. 167 (3), 221-228. doi: 10.1001/archinte.167.3.221
- Dominguez, J. (2013, April 25). Courts side with employers on zero-tolerance drug policies. *KRDO News Website*. Retrieved July 8, 2013 from <http://www.krdo.com/news/courts-side-with-employers-on-zerotolerance-drug-policies/-/417220/19902980/-/t38s1x/-/index.html>
- Drugfree.org (2012, December 12). *Employers in colorado, washington review drug testing policies*. Retrieved June 28, 2013 from <http://www.drugfree.org/join-together/community-related/employers-in-colorado-washington-review-drug-testing-policies>

- Faust, A. & Gilbreth, D. (2013, May 9). When employment law meets legalized marijuana. *The Law.com Network Website*. Retrieved June 10, 2013 from <http://m.law.com/module/alm/app/cc.do#!/article/965634784>
- Ferguson, M. (2013, August 1). Marijuana and the new legal landscape for colorado employers. *The Ireland Stapleton Website*. Retrieved August 28, 2013 from <http://www.irelandstapleton.com/news/marijuana-and-the-new-legal-landscape-for-colorado-employers/>
- Kalhan, R., Kertesz, S., Lin, F., Pletcher, M. J., Richman, J., Safford, M., et al. (2012). Association between marijuana exposure and pulmonary function over 20 years. *Pharmacology, Biochemistry and Behavior*. Advance online publication. doi: 10.1016/j.pbb.2010.06.003
- Larkspur Fire Protection District (2007). *Administrative procedures and standard operating guidelines*. Larkspur, CO: Board of Directors and Administrative Staff
- Lemke, T. (2009, February 19). Smoke yet to clear on marijuana effects. *Washington Times Website*. Retrieved June 16, 2013 from <http://www.washingtontimes.com/news/2009/feb/19/smoke-yet-to-clear-on-marijuana-effects/print/>
- Michigan Medical Marijuana Association (MMMA) (n.d.). *Methods of ingestion*. Retrieved July 20, 2013 from <http://michiganmedicalmarijuana.org/page/articles/health/ingestion-methods>
- National Association of Alcoholism and Drug Abuse Counselors (NAADAC) (2012, August 27). Internet and research give different pictures of marijuana risks. *Alcoholism and Drug Abuse Weekly*, 24, 7. doi: 10.1002/adaw

- National Conference of State Legislatures (2013). *State Medical Marijuana Laws*. Retrieved May 24, 2013 from <http://www.ncsl.org/issues-research/health/state-medical-marijuana-laws.aspx>
- National Organization for the Reform of Marijuana Laws (NORML) (2013). *Frequently asked questions*. Retrieved June 8, 2013 from <http://norml.org/faq>
- New York Daily News. (2012, December 6). As pot goes proper, a history of weed. *New York Daily News Website*. Retrieved June 20, 2013 from <http://www.nydailynews.com/news/national/pot-proper-history-weed-article-1.1214613>
- Pittman, G. (2012, February 23). For optimal work commitment, skip the pot. *Reuters Website*. Retrieved June 16, 2013 from <http://www.reuters.com/article/2012/02/23/us-work-pot-idUSTRE81M1Y020120223>
- Procon.org (2012, July 7). *History of marijuana as medicine – 2900 B.C. to present*. Retrieved June 20, 2013 from <http://medicalmarijuana.procon.org/view.resource.php?resourceID=000143>
- Swinhart, D. (2012, November 19). How recent marijuana legislation could affect fire department policy. *Firehouse Magazine Website, Mutual Aid Blog*. Retrieved June 28, 2013 from <http://firechief.com/blog/how-recent-marijuana-legislation-could-affect-fire-department-policy>
- Tappero, J., (2013, January 7). Legalized marijuana and workplace drug testing. *Kitsap Peninsula Business Journal Website*. Retrieved July 12, 2013 from http://kpbj.com/headlines/human_resources/2013-01-07/legalized_marijuana_and_workplace_drug_testing
- Tratenberg, A. (2012, July 11). Alcohol abuse among firefighters. *Treatment Solutions Website*. Retrieved July 27, 2013 from <http://www.treatmentsolutions.com/alcohol-abuse-firefighters/>

United States Department of Homeland Security. (2012). *Executive leadership: Student manual* (6th ed). Emmitsburg, MD: United States Fire Administration

United States Department of Labor (n.d., a). *Drug free workplace advisor: determining coverage*. Retrieved June 24, 2013 from <http://www.dol.gov/elaws/asp/drugfree/howto.htm>

United States Department of Labor (n.d., b). *Drug free workplace advisor: workplace drug testing*. Retrieved June 24, 2013 from <http://www.dol.gov/elaws/asp/drugfree/drugs/dt.asp#q1>

United States Drug Enforcement Administration. (2010). *Speaking out against drug legalization*. Retrieved June 18, 2013 from http://www.justice.gov/dea/pr/multimedia-library/publications/speaking_out.pdf

United States Drug Enforcement Administration. (n.d.). *Drug scheduling*. Retrieved June 18, 2013 from <http://www.justice.gov/dea/druginfo/ds.shtml>

United States Fire Administration. (2010). *United States strategic plan fiscal years 2010 - 2014*. Retrieved June 18, 2013 from http://www.usfa.fema.gov/downloads/pdf/strategic_plan.pdf

Appendix A: Group A, States with No Legal Marijuana

Item 1: What U.S. state or U.S. territory is your organization located in? (Please select from the dropdown menu)		
Answer Options	Response Percent	Response Count
AL	2%	2
FL	21%	22
GA	3%	3
GU (Guam)	2%	2
ID	4%	4
IN	1%	1
IA	2%	2
KS	4%	4
KY	1%	1
LA	3%	3
MN	4%	4
MS	1%	1
MO	2%	2
NY	2%	2
NC	11%	12
ND	1%	1
OH	6%	6
OK	1%	1
PA	5%	5
SC	1%	1
SD	3%	3
TX	4%	4
UT	2%	2
VA	10%	11
WV	1%	1
WI	6%	6
WY	1%	1
	<i>answered question</i>	107
	<i>skipped question</i>	0

Item 2: Which of the following best describes your organization's primary function?

Answer Options		Response Percent	Response Count
a. Fire protection		75.7%	81
b. EMS		6.5%	7
c. Law enforcement		0.9%	1
d. Other		16.8%	18
If you selected "Other" please specify in the text box below:			20
<i>answered question</i>			107
<i>skipped question</i>			0
Number	Response Date	If you selected "Other" please specify in the text box below:	
1	Aug 9, 2013 6:13 PM	Nursing	
2	Jul 20, 2013 1:51 PM	both Fire and EMS	
3	Jul 17, 2013 10:59 PM	fire and EMS	
4	Jul 16, 2013 12:32 PM	We run both fire and EMS.	
5	Jul 16, 2013 11:13 AM	Fire/EMS	
6	Jul 15, 2013 4:59 PM	Fire-Rescue (ALS Ambulance)	
7	Jul 15, 2013 1:07 PM	Fire and EMS	
8	Jul 15, 2013 12:06 PM	Fire & EMS	
9	Jul 15, 2013 11:48 AM	Fire and EMS	
10	Jul 15, 2013 11:38 AM	Fire/EMS	
11	Jul 15, 2013 2:03 AM	Fire and EMS	
12	Jul 14, 2013 2:54 PM	Both fire and EMS. Statistically we run +70% EMS calls	
13	Jul 14, 2013 2:54 PM	Fire, EMS, Special Operations	
14	Jul 13, 2013 8:28 PM	Fire & EMS	
15	Jul 13, 2013 3:09 PM	Public Safety	
16	Jul 13, 2013 3:08 PM	Fire/EMS	
17	Jul 13, 2013 11:34 AM	Fire and EMS	
18	Jul 13, 2013 10:05 AM	EMT's	
19	Jul 13, 2013 3:25 AM	A and B	
20	Jul 12, 2013 8:19 PM	Fire and EMS	

Item 3: Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal mental capacity while on-duty?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	76.6%	82
b. No in both the occasional user and the chronic user	3.7%	4
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	19.6%	21
<i>answered question</i>		107
<i>skipped question</i>		0

Item 4: Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal physical capacity while on-duty?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	73.8%	79
b. No in both the occasional user and the chronic user	6.5%	7
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	19.6%	21
<i>answered question</i>		107
<i>skipped question</i>		0

Item 5: Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to mental health/cognitive problems (i.e.; short-term/long term memory deficits, decreased problem solving abilities, attention deficit disorders, depression, anxiety, decreased motivation, personality disturbances)?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	75.7%	81
b. No in both the occasional user and the chronic user	3.7%	4
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	20.6%	22
<i>answered question</i>		107
<i>skipped question</i>		0

Item 6: Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to physical health problems (i.e.; COPD, frequent pulmonary infections, cancer, cardiac problems)?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	71.0%	76
b. No in both the occasional user and the chronic user	5.6%	6
c. Yes in the occasional user but no in the chronic user	0.9%	1
d. No in the occasional user but yes in the chronic user	22.4%	24
<i>answered question</i>		107
<i>skipped question</i>		0

Item 7: From purely physical health, mental health, and social health perspectives, which of the following drugs do you believe is the most harmful?

Answer Options	Response Percent	Response Count
a. Alcohol	68.2%	73
b. Marijuana	31.8%	34
<i>answered question</i>		107
<i>skipped question</i>		0

Item 8: How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	83.2%	89
b. Random	61.7%	66
c. During scheduled physical exams	33.6%	36
d. Reasonable suspicion of prohibited drug use	84.1%	90
e. Other (please specify)	24.3%	26
If you selected "Other" please specify in the text box below		27
<i>answered question</i>		107
<i>skipped question</i>		0

Number	Response Date	If you selected "Other" please specify in the text box below
1	Jul 20, 2013 1:51 PM	any on duty injury with treatment, and any fire department vehicle accident
2	Jul 17, 2013 10:02 PM	don't have a policy

Item 8 (continued): How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options		Response Percent	Response Count
a. Pre-employment		83.2%	89
b. Random		61.7%	66
c. During scheduled physical exams		33.6%	36
d. Reasonable suspicion of prohibited drug use		84.1%	90
e. Other (please specify)		24.3%	26
If you selected "Other" please specify in the text box below			27
answered question			107
skipped question			0
Number	Response Date	If you selected "Other" please specify in the text box below	
3	Jul 16, 2013 12:32 PM	All personnel undergo a drug test shortly after being promoted, at a random time.	
4	Jul 15, 2013 6:15 PM	Accidents involving FD vehicles with set dollar amount \$2000.00 or more. Breakages of narcotics of more than two vile in a certain time period or lost narcotics and accidental needle sticks.	
5	Jul 15, 2013 4:59 PM	Post Vehicle Accident	
6	Jul 15, 2013 3:41 PM	Accident/Injury	
7	Jul 15, 2013 2:44 PM	When injured on the job.	
8	Jul 15, 2013 1:13 PM	The use of drugs is prohibited by our rules and is in the labor agreement. We use drug testing on a regular basis and it is pretty standard in the area. It assure me that our personnel are 'drug free.' With Washington just legalizing it, it is still prohibited.	
9	Jul 15, 2013 12:08 PM	Required for accidents involving department apparatus or vehicles.	
10	Jul 15, 2013 11:48 AM	following any injury accident or property damage accident exceeding \$2000 in damage	
11	Jul 15, 2013 11:11 AM	The driver is tested after any motor vehicle crash.	

Item 8 (continued): How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	83.2%	89
b. Random	61.7%	66
c. During scheduled physical exams	33.6%	36
d. Reasonable suspicion of prohibited drug use	84.1%	90
e. Other (please specify)	24.3%	26
If you selected "Other" please specify in the text box below		27
<i>answered question</i>		107
<i>skipped question</i>		0
Number	Response Date	If you selected "Other" please specify in the text box below
12	Jul 14, 2013 11:49 PM	none
13	Jul 14, 2013 2:54 PM	Post vehicular accident if injury occurred or if a vehicle needed to be towed.
14	Jul 13, 2013 8:50 PM	On the job injury, and on duty driver/engineer involved in crashes with assigned city vehicles
15	Jul 13, 2013 6:06 PM	After any on-duty incident causing personal or property damage.
16	Jul 13, 2013 4:26 PM	No policy or program in writing
17	Jul 13, 2013 3:08 PM	Pre-employment, annual screenings during scheduled physical exams, and random screenings after an employee has proven positive during a screening. Also, after a MVC with injury, death, or significant damage, an employee is tested.
18	Jul 13, 2013 2:05 PM	accidents
19	Jul 13, 2013 10:05 AM	After accidents
20	Jul 13, 2013 4:17 AM	Any accident involving equipment or apparatus.
21	Jul 13, 2013 3:25 AM	Motor vehicle accident official vehicle
22	Jul 13, 2013 3:10 AM	For driver post accident
23	Jul 13, 2013 1:44 AM	Post-Accident/Injury

Item 8 (continued): How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	83.2%	89
b. Random	61.7%	66
c. During scheduled physical exams	33.6%	36
d. Reasonable suspicion of prohibited drug use	84.1%	90
e. Other (please specify)	24.3%	26
If you selected "Other" please specify in the text box below		27
<i>answered question</i>		107
<i>skipped question</i>		0
Number	Response Date	If you selected "Other" please specify in the text box below
24	Jul 13, 2013 1:36 AM	After an accident
25	Jul 12, 2013 10:04 PM	Post Accident
26	Jul 12, 2013 9:16 PM	On duty driver of fire apparatus involved in traffic incident.
27	Jul 12, 2013 8:19 PM	MVA Accidents and Work related Injuries on the job

Item 9: Which of the following best describes your agency's drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication)?

Answer Options	Response Percent	Response Count
a. Zero tolerance (immediate termination of employment)	38.3%	41
b. Case dependent (disciplinary action which may or may not include termination)	30.8%	33
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	19.6%	21
d. Other (please specify)	11.2%	12
If you selected "Other" please specify in the text box below:		12
<i>answered question</i>		107
<i>skipped question</i>		0
1	Jul 17, 2013 10:59 PM	2 strike - the first equals 90 days off with treatment but 2nd strike termination
2	Jul 17, 2013 10:02 PM	don't have a policy

Item 9: Which of the following best describes your agency's drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication)?

Answer Options	Response Percent	Response Count
a. Zero tolerance (immediate termination of employment)	38.3%	41
b. Case dependent (disciplinary action which may or may not include termination)	30.8%	33
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	19.6%	21
d. Other (please specify)	11.2%	12
If you selected "Other" please specify in the text box below:		12
answered question		107
skipped question		0
3	Jul 16, 2013 11:13 AM	C is a close answer but in our organization and even with mandatory rehab the employee might still face disciplinary action i.e., demotion, again depending upon the facts of the case.
4	Jul 15, 2013 4:59 PM	Suppose to be Zero Tolerance, but they have been unconsistant in the past
5	Jul 15, 2013 3:41 PM	Only test for current intoxication
6	Jul 15, 2013 3:29 PM	For 1st time positive test. Otherwise (b).
7	Jul 15, 2013 2:44 PM	Rehabilitation, required random testing up to two years, demotion if an officer.
8	Jul 15, 2013 2:28 PM	Mandatory drug abuse treatment or termination. Radom drug testing after cleared by treatment second offense termination.
9	Jul 14, 2013 11:49 PM	none
10	Jul 13, 2013 4:26 PM	No policy or program in writing
11	Jul 13, 2013 3:08 PM	Offered a voluntary drug treatment program, if refused, disciplinary action is utilized up to and including termination.N

Item 9: Which of the following best describes your agency's drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication)?

Answer Options	Response Percent	Response Count
a. Zero tolerance (immediate termination of employment)	38.3%	41
b. Case dependent (disciplinary action which may or may not include termination)	30.8%	33
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	19.6%	21
d. Other (please specify)	11.2%	12
If you selected "Other" please specify in the text box below:		12
<i>answered question</i>		107
<i>skipped question</i>		0
12	Jul 13, 2013 11:34 AM	two strike-first time counseling, discipline and additional random testing, 2nd-terminantion

Item 10: Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options	Response Count	
	17	
<i>answered question</i>	17	
<i>skipped question</i>	90	
Number	Response Date	Response Text
1	Aug 9, 2013 6:13 PM	I generally think of marijuana use as less significant yet similar to alcohol use. Used in moderation, it is not an issue and has no effect on job performance. However, just as in the case of chronic alcohol use, chronic marijuana use can lead to cognitive impairment and physical deconditioning. This observation is solely based off of my experience knowing and working with various people over the years who use recreational drugs and alcohol. As a rule of thumb, I think employers have no business in their employees extra curricular activities as long as it does affect job performance. The mere threat of alcohol or drug use causing issues on the job is not enough to warrant investigation or action against any employee by their employer.

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		17
<i>answered question</i>		17
<i>skipped question</i>		90
Number	Response Date	Response Text
2	Jul 26, 2013 1:33 PM	With the alcohol vs marijuana question I believe abuse of either makes them the worst of the two. recreational use of either is not harmful where abuse of either is.
3	Jul 17, 2013 10:59 PM	the worst thing about this is that people can crush and snort prescription pain killers and have a doctors excuse if its found in their blood, they can snort coke and its gone in 24 hrs, but one joint can still show up 30 days later, i knowa company that does hair testing, so 6 months later it can still be found - the public perception is the biggest factor, as for recreational use - more focus needs to be given on workplace morale - depressed and unhappy people are the ones that look for relief legal or illegal chronic or recreation - zero tolerance is the only solution
4	Jul 15, 2013 3:03 PM	N/A
5	Jul 15, 2013 2:44 PM	The DOT has policies do not allow you to use certian types of drugs and drive even if they are prescribed by a doctor. Even if marijuana is legal in your state truck drivers may not have it in their systems. I do not know if you are looking to prohibit or control the use, but If you are looking at policies to prohibit the use adopting the DOT policy would do the job. Good luck with your project.
6	Jul 15, 2013 1:13 PM	The fire service must stay firm on no use of marijuana. We just can't afford any negative impacts to our service and we have to be sure all of our personnel are as safe as we can.
7	Jul 15, 2013 11:38 AM	While the intent of this survey is for firefighters in Colorado, I am intrested in seeing opinions of agencies who have firefighters travel to Colorado and legaly partake of the substance and return home to be tested positive. How are agecies going to handle this event as well.
8	Jul 14, 2013 11:49 PM	No drug or alcohol testing, clicked on Guam but organisation is in Australia

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.		
Answer Options		Response Count
		17
<i>answered question</i>		17
<i>skipped question</i>		90
Number	Response Date	Response Text
9	Jul 14, 2013 2:54 PM	I have never researched marijuana use. Some of my answers are intuitive and could possibly change with further information. I would be curious to know what the long term negative effects are. Congrats on reaching year four and good luck with the paper.
10	Jul 13, 2013 8:50 PM	Florida has a zero tolerance rule on Firefighters with blood levels detecting tobacco products, and "recreational drugs" at any time which when detected will result in termination of the offending employee. Any employee under the influence of alcohol while on duty or 4 hours prior to their report to duty may be terminated depending on the municipality civil service guidelines. To date, The Florida Governor, State Senate, and State Legislature has no intention on following suit with other states that allow for recreational use of marijuana. It has been discussed by the State Fire Marshal that Fire, Police, EMS and Florida National Guard personnel will NOT be permitted to
11	Jul 13, 2013 4:26 PM	My responses to questions #3 through #7 are only based on my opinion without doing any research on the subjects. Hopefully your paper will provide the audience with enough background through the literature review to substantiate your findings.
12	Jul 13, 2013 3:08 PM	None at this time.
13	Jul 13, 2013 3:26 AM	2.0 good to go. Typical of 4th year projects - little regard for the advancement of professionalism in the fire service and more effort to promote social agenda. I was a pot head when I was younger and it took years to get my edge & focus back
14	Jul 13, 2013 3:25 AM	2.0 good to go. Typical of 4th year projects - little regard for the advancement of professionalism in the fire service and more effort to promote social agenda. I was a pot head when I was younger and it took years to get my edge & focus back

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		17
<i>answered question</i>		17
<i>skipped question</i>		90
Number	Response Date	Response Text
15	Jul 13, 2013 3:10 AM	NA
16	Jul 12, 2013 9:16 PM	None.
17	Jul 12, 2013 8:19 PM	Pot has gotten a bad wrap because the government can't regulate it. It is NOT an addictive....I know plenty of people who have done it everyday since they were kids and quit cold turkey for a job with no side effects.....the one's who have the side effects are the ones who drink and take other prescription drugs (illegal too) along with the pot and then they blame on the pot for being the addictive drug.....totally false! LEGALIZE WACKY WEED!!!!!!!!!!

Appendix B: Group B, States with Only Medical Marijuana

Item 1: What U.S. state or U.S. territory is your organization located in? (Please select from the dropdown menu)

Answer Options	Response Percent	Response Count
AZ	20.9%	9
CA	20.9%	9
CT	7.0%	3
HI	2.3%	1
IL	16.3%	7
MD	2.3%	1
MA	2.3%	1
MI	9.3%	4
NJ	4.7%	2
NM	2.3%	1
OR	11.6%	5
<i>answered question</i>		43
<i>skipped question</i>		0

Item 2: Which of the following best describes your organization's primary function?

Answer Options	Response Percent	Response Count	
a. Fire protection	77.8%	35	
b. EMS	4.4%	2	
c. Law enforcement	0.0%	0	
d. Other	17.8%	8	
If you selected "Other" please specify in the text box below:		10	
<i>answered question</i>		45	
<i>skipped question</i>		0	
Number	Response Date	If you selected "Other" please specify in the text box below:	Categories
1	Jul 15, 2013 10:46 PM	Fire/EMS All Risk	
2	Jul 15, 2013 3:06 PM	both fire and EMS	
3	Jul 15, 2013 2:35 PM	Fire and EMS	
4	Jul 15, 2013 1:25 PM	Fire/EMS	
5	Jul 14, 2013 12:25 PM	Both fire protection & EMS	
6	Jul 14, 2013 10:30 AM	Offer both fire and EMS (ALS)	
7	Jul 13, 2013 11:32 AM	Fire/EMS	
8	Jul 13, 2013 3:15 AM	Fire and Ems	

Item 3: Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal mental capacity while on-duty?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	67.4%	29
b. No in both the occasional user and the chronic user	7.0%	3
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	25.6%	11
<i>answered question</i>		43
<i>skipped question</i>		0

Item 4: Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal physical capacity while on-duty?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	62.8%	27
b. No in both the occasional user and the chronic user	9.3%	4
c. Yes in the occasional user but no in the chronic user	2.3%	1
d. No in the occasional user but yes in the chronic user	25.6%	11
<i>answered question</i>		43
<i>skipped question</i>		0

Item 5: Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to mental health/cognitive problems (i.e.; short-term/long term memory deficits, decreased problem solving abilities, attention deficit disorders, depression, anxiety, decreased motivation, personality disturbances)?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	67.4%	29
b. No in both the occasional user and the chronic user	7.0%	3
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	25.6%	11
<i>answered question</i>		43
<i>skipped question</i>		0

Item 6: Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to physical health problems (i.e.; COPD, frequent pulmonary infections, cancer, cardiac problems)?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	58.1%	25
b. No in both the occasional user and the chronic user	9.3%	4
c. Yes in the occasional user but no in the chronic user	2.3%	1
d. No in the occasional user but yes in the chronic user	30.2%	13
<i>answered question</i>		43
<i>skipped question</i>		0

Item 7: From purely physical health, mental health, and social health perspectives, which of the following drugs do you believe is the most harmful?

Answer Options	Response Percent	Response Count
a. Alcohol	62.8%	27
b. Marijuana	37.2%	16
<i>answered question</i>		43
<i>skipped question</i>		0

Item 8: How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	81.4%	35
b. Random	27.9%	12
c. During scheduled physical exams	20.9%	9
d. Reasonable suspicion of prohibited drug use	93.0%	40
e. Other (please specify)	18.6%	8
If you selected "Other" please specify in the text box below		9
<i>answered question</i>		43
<i>skipped question</i>		0

Number	Response Date	If you selected "Other" please specify in the text box below
1	Jul 21, 2013 2:18 PM	drug testing is mandatory following an injury or vehicle accident.
2	Jul 16, 2013 5:44 PM	Post accident damage in excess of \$5000

Item 8 (continued): How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options		Response Percent	Response Count
a. Pre-employment		81.4%	35
b. Random		27.9%	12
c. During scheduled physical exams		20.9%	9
d. Reasonable suspicion of prohibited drug use		93.0%	40
e. Other (please specify)		18.6%	8
If you selected "Other" please specify in the text box below			9
<i>answered question</i>			43
<i>skipped question</i>			0
Number	Response Date	If you selected "Other" please specify in the text box below	
3	Jul 15, 2013 11:11 PM	post incident	
4	Jul 14, 2013 5:38 PM	After a vehicle accident when they were driving.	
5	Jul 14, 2013 10:30 AM	Antime an employee is injured or has an incident with a fire department vehicle.	
6	Jul 13, 2013 8:37 PM	After a vehicle accident involving injury or death.	
7	Jul 13, 2013 11:32 AM	Accident	
8	Jul 13, 2013 2:02 AM	Post accident investigation	
9	Jul 12, 2013 8:46 PM	Post motor vehicle collision	

Item 9: Which of the following best describes your agency's drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication)?

Answer Options	Response Percent	Response Count
a. Zero tolerance (immediate termination of employment)	34.9%	15
b. Case dependent (disciplinary action which may or may not include termination)	39.5%	17
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	16.3%	7
d. Other (please specify)	9.3%	4
If you selected "Other" please specify in the text box below:		5
answered question		43
skipped question		0

Number	Response Date	If you selected "Other" please specify in the text box below:
1	Jul 17, 2013 1:37 AM	The employee will still be disciplined if a positive test occurred.
2	Jul 15, 2013 2:56 PM	We have no policy in place at this time.
3	Jul 13, 2013 8:37 PM	Progressive discipline. First time=rehab second=suspension Third=termination
4	Jul 13, 2013 2:24 AM	First time they enter last chance program . They must under go rehab then random drug testing for 18 months if caught again they are terminated regardless of the time
5	Jul 12, 2013 10:07 PM	not addressed in current policy

Item 10: Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		9
<i>answered question</i>		9
<i>skipped question</i>		34

Number	Response Date	Response Text
1	Jul 21, 2013 2:18 PM	We currently cover marijuana use under the same policy as alcohol. The policy prohibits coming to work with "detectable levels of alcohol or drugs in their systems". This wording has some potential problems but has not been challenged.
2	Jul 20, 2013 3:08 AM	We we discover that the employee is under the influence, then they will most likely be terminated. If they ask for help, we will get them help.
3	Jul 16, 2013 5:44 PM	The inherent problem with marijuana is that there are not current tests that test for impairment and you can test positive for THC for up to 30 days after use. I don't know how you get around this and the liability associated with an employee testing positive after an accident whether impaired or not.
4	Jul 15, 2013 7:57 PM	The questions seem to be outside the clinical expertise of the average Fire Chief. Good luck with your ARP.
5	Jul 14, 2013 5:38 PM	Nothing to add.
6	Jul 14, 2013 12:25 PM	I honestly beleive that there is no significant difference in the occasional user of both marijuana and alcohol. Both present problems in chronic users and if both are used in conjunction. There should be a zero tolerance if tested and found to be positive in on-duty personnel. Additionally, alcoholism is treated as a disease where, I believe, marijuana would get much more as it's an illegal substance. Though I beleive, as stated, that there is no significant difference between the two, the fact that marijuana is illegal deserves the attention it's given.
7	Jul 14, 2013 1:38 AM	Does that all make sense?
8	Jul 13, 2013 8:37 PM	This is a subject that's demands more discussion regarding the impact on emergency workers.
9	Jul 13, 2013 4:20 PM	Interesting topic. Good luck.
		VERY interesting topic to tackle.

Appendix C: Group C, States with Medical and Recreational Marijuana

Item 1: What U.S. state or U.S. territory is your organization located in? (Please select from the dropdown menu)		
Answer Options	Response Percent	Response Count
CO	89.1%	98
WA	10.9%	12
<i>answered question</i>		110
<i>skipped question</i>		0

Item 2: Which of the following best describes your organization's primary function?		
Answer Options	Response Percent	Response Count
a. Fire protection	39.1%	43
b. EMS	37.3%	41
c. Law enforcement	10.0%	11
d. Other	13.6%	15
If you selected "Other" please specify in the text box below:		16
<i>answered question</i>		110
<i>skipped question</i>		0

Number	Response Date	If you selected "Other" please specify in the text box below:
1	Aug 9, 2013 4:30 PM	EMS Education
2	Aug 7, 2013 10:01 PM	Fire protection district with separate fire & EMS divisions
3	Aug 7, 2013 6:53 PM	public safety
4	Aug 7, 2013 5:27 PM	Fire/EMS
5	Aug 7, 2013 3:43 PM	Hospital ED
6	Aug 7, 2013 3:24 PM	RN in ED
7	Jul 18, 2013 5:54 PM	Emergency Management
8	Jul 18, 2013 5:18 PM	Emergency Management
9	Jul 18, 2013 4:44 PM	Emergency Management
10	Jul 18, 2013 4:40 PM	Emergency Manager
11	Jul 15, 2013 9:42 PM	We are an ALS transporting fire agency
12	Jul 15, 2013 8:25 PM	fire and ems
13	Jul 13, 2013 6:44 PM	Fire & EMS
14	Jul 13, 2013 1:48 PM	Fire Protection and EMS
15	Jul 12, 2013 9:22 PM	Fire-based EMS with ALS Transport
16	Jul 12, 2013 8:40 PM	Municipal Fire Department that is also responsible for EMS

Item 3: Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal mental capacity while on-duty?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	50.0%	55
b. No in both the occasional user and the chronic user	14.5%	16
c. Yes in the occasional user but no in the chronic user	1.8%	2
d. No in the occasional user but yes in the chronic user	33.6%	37
<i>answered question</i>		110
<i>skipped question</i>		0

Item 4: Do you believe off-duty marijuana use by employees would most likely affect their ability to perform at optimal physical capacity while on-duty?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	48.2%	53
b. No in both the occasional user and the chronic user	17.3%	19
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	34.5%	38
<i>answered question</i>		110
<i>skipped question</i>		0

Item 5: Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to mental health/cognitive problems (i.e.; short-term/long term memory deficits, decreased problem solving abilities, attention deficit disorders, depression, anxiety, decreased motivation, personality disturbances)?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	49.1%	54
b. No in both the occasional user and the chronic user	15.5%	17
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	35.5%	39
<i>answered question</i>		110
<i>skipped question</i>		0

Item 6: Do you believe off-duty marijuana use by employees would significantly increase their susceptibility to physical health problems (i.e.; COPD, frequent pulmonary infections, cancer, cardiac problems)?

Answer Options	Response Percent	Response Count
a. Yes in both the occasional user and the chronic user	48.2%	53
b. No in both the occasional user and the chronic user	22.7%	25
c. Yes in the occasional user but no in the chronic user	0.0%	0
d. No in the occasional user but yes in the chronic user	29.1%	32
<i>answered question</i>		110
<i>skipped question</i>		0

Item 7: From purely physical health, mental health, and social health perspectives, which of the following drugs do you believe is the most harmful?

Answer Options	Response Percent	Response Count
a. Alcohol	77.3%	85
b. Marijuana	22.7%	25
<i>answered question</i>		110
<i>skipped question</i>		0

Item 8: How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	79.1%	87
b. Random	40.0%	44
c. During scheduled physical exams	14.5%	16
d. Reasonable suspicion of prohibited drug use	81.8%	90
e. Other (please specify)	21.8%	24
If you selected "Other" please specify in the text box below		26
<i>answered question</i>		110
<i>skipped question</i>		0

Number	Response Date	If you selected "Other" please specify in the text box below
1	Aug 26, 2013 3:35 AM	motor vehicle accident resulting in >\$500 damages any work comp claim
2	Aug 22, 2013 8:26 PM	If involved in a motor vehicle accident.

Item 8 (continued): How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	79.1%	87
b. Random	40.0%	44
c. During scheduled physical exams	14.5%	16
d. Reasonable suspicion of prohibited drug use	81.8%	90
e. Other (please specify)	21.8%	24
If you selected "Other" please specify in the text box below		26
answered question		110
skipped question		0
Number	Response Date	If you selected "Other" please specify in the text box below
3	Aug 15, 2013 5:13 PM	they don't have any
4	Aug 15, 2013 5:41 AM	A traffic accident involving an EMS vehicle, or an incident where patient safety is compromised.
5	Aug 10, 2013 9:17 PM	Any vehicle incident resulting in damage or injury
6	Aug 8, 2013 9:50 PM	Post incident
7	Aug 8, 2013 8:22 PM	MVA
8	Aug 8, 2013 6:15 PM	Post-incident (wrecking an ambulance, narcotics unaccounted for)
9	Aug 8, 2013 4:36 PM	If an accident or incident occurs.
10	Aug 8, 2013 4:26 AM	Work related injuries
11	Aug 8, 2013 4:06 AM	After any accident or exposure
12	Aug 7, 2013 11:47 PM	Officer and driver are tested after an injury MVA.
13	Aug 7, 2013 10:31 PM	After on-duty MVAs
14	Aug 7, 2013 10:01 PM	No drug testing
15	Aug 7, 2013 6:32 PM	Policy is written to address above, however, Pre-employment is the only one ever utilized.
16	Aug 7, 2013 4:18 PM	Following accident or injury.
17	Aug 7, 2013 3:24 PM	On the job injury
18	Aug 5, 2013 10:21 PM	following an vehicle accident

Item 8 (continued): How does your agency's substance abuse policy outline drug testing requirements? (Please select all that apply)

Answer Options	Response Percent	Response Count
a. Pre-employment	79.1%	87
b. Random	40.0%	44
c. During scheduled physical exams	14.5%	16
d. Reasonable suspicion of prohibited drug use	81.8%	90
e. Other (please specify)	21.8%	24
If you selected "Other" please specify in the text box below		26
answered question		110
skipped question		0

Number	Response Date	If you selected "Other" please specify in the text box below
19	Jul 18, 2013 6:05 PM	Any accident or issue causing physical harm, inability to perform duties or compromised decision making capability observed by other members of the department
20	Jul 18, 2013 5:28 PM	Upon an accident.
21	Jul 18, 2013 4:33 PM	Vehicle Accidents
22	Jul 15, 2013 1:25 PM	After an accident involving fire apparatus.
23	Jul 13, 2013 4:56 AM	Traffic accident involving Department vehicle.
24	Jul 13, 2013 4:15 AM	1) Random testing is used only for those who hold a CO P2 (bus) endorsement. 2) Testing is completed after an accident occurs.
25	Jul 12, 2013 9:45 PM	Can be required following a motor vehicle accident involving department apparatus
26	Jul 12, 2013 8:39 PM	For C - Only when promoted.

Item 9: Which of the following best describes your agency's drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication)?

Answer Options	Response Percent	Response Count
a. Zero tolerance (immediate termination of employment)	36.4%	40
b. Case dependent (disciplinary action which may or may not include termination)	39.1%	43
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	9.1%	10
d. Other (please specify)	15.5%	17
If you selected "Other" please specify in the text box below:		18
answered question		110
skipped question		0
Number	Response Date	If you selected "Other" please specify in the text box below:
1	Aug 23, 2013 11:07 PM	Don't know
2	Aug 22, 2013 8:26 PM	I am not sure.
3	Aug 15, 2013 5:13 PM	no policy in place
4	Aug 12, 2013 1:30 AM	Don't know
5	Aug 9, 2013 12:26 PM	Not certain
6	Aug 8, 2013 10:47 PM	No policy
7	Aug 7, 2013 10:01 PM	No drug testing
8	Aug 7, 2013 7:06 PM	No clue
9	Aug 7, 2013 5:27 PM	I'm not sure, but I'm assuming it is either case dependent or zero tolerance.
10	Aug 7, 2013 4:30 PM	Employee rehab.
11	Aug 7, 2013 3:07 PM	No policy yet.
12	Aug 7, 2013 3:06 PM	Not sure
13	Jul 18, 2013 5:28 PM	At this time our policies only address legal vs illegal drugs. We do not have policies addressing marijuana specifically at this time.
14	Jul 18, 2013 4:48 PM	Zero tolerance at this time but not necessarily termination.
15	Jul 18, 2013 4:26 PM	Unknown. No one has come up hot.
16	Jul 17, 2013 4:43 PM	I do not know.

Item 9 (continued): Which of the following best describes your agency's drug policy with respect to employees who test positive for the inactive metabolite of THC (proof of marijuana exposure but with no current intoxication)?

Answer Options	Response Percent	Response Count
a. Zero tolerance (immediate termination of employment)	36.4%	40
b. Case dependent (disciplinary action which may or may not include termination)	39.1%	43
c. Employee rehabilitation (voluntary drug abuse treatment program attendance in lieu of disciplinary action)	9.1%	10
d. Other (please specify)	15.5%	17
If you selected "Other" please specify in the text box below:		18
<i>answered question</i>		110
<i>skipped question</i>		0
Number	Response Date	If you selected "Other" please specify in the text box below:
17	Jul 15, 2013 9:42 PM	We are in Washington, where marijuana possession and usage is now considered legal. Staff who would be found to have an inactive metabolite of THC would not be treated any differently than if they tested positive for tobacco use.
18	Jul 13, 2013 4:15 AM	It is situational and could be any of the three options above.

Item 10: Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options	Response Count	
	25	
<i>answered question</i>	25	
<i>skipped question</i>	85	
Number	Response Date	Response Text
1	Aug 23, 2013 11:07 PM	Personally I don't know how any employer can regulate off duty use of anything. I think it is up to individuals to be responsible and for all of us to police each other through positive "peer pressure", so to speak. Assuming there is any benign drug, legal or not, is irresponsible if it is something that could effect your ability to think clearly or make decisions that impact others and their well being.

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		25
<i>answered question</i>		25
<i>skipped question</i>		85
Number	Response Date	Response Text
2	Aug 15, 2013 5:41 AM	This is going to be a very interesting and contested topic in the next few years as Colorado and Washington struggle to lay the foundation for legalized marijuana and its use. I am interested to see how employers in these states will handle this without violating privacy or intruding on individuals' rights. I've seen too many firemen and EMS personnel indulge in over consumption of alcohol, then think that they can get up and go to work and function just fine. In my opinion, alcohol causes much more trouble and damage to people's lives than marijuana ever could, especially in professions like EMS and Fire where self-medication with any substance seems more common. Thank you for this pertinent and timely questionnaire; I hope this helps with your research and your ability to establish a win-win policy for everyone concerned.
3	Aug 8, 2013 6:15 PM	Alcohol causes indisputable impairments in cognitive function, causes serious long-term health problems, and has been linked to incidences of extreme depression. Marijuana is a viable recreational alternative while off duty.
4	Aug 8, 2013 4:36 PM	Has not been a problem yet, but people have been counseled prior to hire about drug use.
5	Aug 8, 2013 4:26 AM	This is the state of Colorado, we voted, it is not lethal like ALCOHOL.
6	Aug 8, 2013 2:06 AM	The "occasional" user may have a worse problem than frequent user. By using only when the receptors in the brain trigger when the user inhales THC. This instant and as required only trigger cannot be controlled as use is when deemed necessary. Alcohol is known to cause more deaths and medical problems than does THC. Alcohol use during duty hours has occurred in the form of liquor in coffee, to Red Bull (energy drink) and vodka, which has no odors to give them away. Diabetic EMS personnel have also been known to drink on duty, because effects of ETOH are very similar to hypoglycemia. Consistent drug screens are necessary (along with zero tolerance) to monitor not only crew safety, but patient safety as well. Great topic choice.

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		25
<i>answered question</i>		25
<i>skipped question</i>		85
Number	Response Date	Response Text
7	Aug 7, 2013 11:47 PM	For me one of the most difficult issues is to determine whether someone is using while on duty or the THC in their system is from off duty use. Alcohol and other drugs must not be in your system while on duty, THC should be handled the same. The fire service is held to a higher standard than the general public so a no use policy seems reasonable and acceptable. We agree to not use tobacco, to grooming standards, piercing and tattoo limits, why should agreeing to not use drugs be an problem?
8	Aug 7, 2013 10:31 PM	Regarding off-duty marijuana use and susceptibility to health problems: That depends on what form of marijuana is used, doesn't it? I can see how smoking marijuana, especially chronically, would predispose the user to pulmonary problems. But what if the marijuana was ingested instead? Are there health problems associated with this?
9	Aug 7, 2013 6:32 PM	Written policy(ies) on drug and alcohol abuse are one thing. To actually enforce them is another. One must look at policy to see who is effected and whether enforcement would discipline those individuals key to organizational operations, ie chiefs.
10	Aug 7, 2013 5:27 PM	I believe that we still have much to learn about Marijuana, however in my opinion it is much less harmful than alcohol and much less addicting than alcohol. I feel that if I am allowed to drink off duty and smoke cigarettes whether on duty or off, that I should be allowed to smoke marijuana while off duty given a certain amount of time before I am allowed to be on duty after I smoke.
11	Aug 7, 2013 4:34 PM	More accurate forms of testing are required so that determination can be made as to when marijuana was used.

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		25
<i>answered question</i>		25
<i>skipped question</i>		85
Number	Response Date	Response Text
12	Aug 7, 2013 3:27 PM	Medical providers need to set examples of health... Physically and mentally. Just like athletes, medical providers should not be aloud to use substances off duty in case the need to act in an emergency. Another note is the frequency that Cyclical Vomiting Syndrome (CVS) is being seen in the ED's, which is usually secondary to the use of marijuana. Off duty users may be subject to CVS and could lead to decreased productivity and more frequent calling in sick to work. CVS can be dibilitating for several days and can lead to other health problems in the future. Off duty Marijuana should not be acceptable!
13	Aug 7, 2013 3:24 PM	I have zero tolerance for drug use. Drug use should not be allowed. There are plenty of qualified non-drug users who want to be fireman- hire them and let the drug users find other jobs...maybe twirling a cash for gold sign on the corner. Don't lower your standards...stand tall and be proud.
14	Aug 7, 2013 3:06 PM	I think alcohol use is much more detrimental to employee ans organization the marijauna. However, combined they are more detrimental than either is separately.
15	Jul 18, 2013 6:05 PM	Colorado creates a strange situation that is not well known by most Firefighters in that any positive test for THC or alcohol will negate any possibility of survivors of a LOD or Disability from obtaining the Public Safety Officer death and Disability Benefit which is a Federal program to provide some benefit in these circumstances. Our Insurance provider for liability and vehicle insurance as well as Workman's Comp. will not provide coverage for individuals that test positive for any THC or alcohol in their system thereby opening the district to possible civil suit if an individual does harm, death or damage while performing functions for the district.

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		25
<i>answered question</i>		25
<i>skipped question</i>		85
Number	Response Date	Response Text
16	Jul 18, 2013 5:19 PM	This is also a hot-button issue in Washington but I believe we lag behind Colorado in making adjustments. Use of marijuana is prohibited by our union contract so any evidence of use could be grounds for termination. Interesting policy now that the drug is legal. The basis for continuing the policy seems to be that it is against Federal Law.
17	Jul 18, 2013 5:18 PM	I firmly believe folks that chose First Response as a career choice should be drug free with a clear mind.
18	Jul 18, 2013 4:48 PM	My belief is that Marijuana in moderation is no worse than Alcohol in moderation. Overall, I feel that there is a lesser tendency toward violent behavior (physical abuse, fighting, etc.) with the Marijuana-only users.
19	Jul 15, 2013 9:42 PM	After much hand wringing within our city should the marijuana initiative pass, it was hardly a "blip" that most don't even remember right now. Our HR department (and subsequently all city departments) considers marijuana to be no different than alcohol use, i.e. fine for use off duty, but don't show up to work under the influence and no consumption while at work either. The State Attorneys Office has advised municipalities they can still pass policies that prohibit marijuana use off duty, but personally I applaud our city for taking a progressive and defensible stand. One of the biggest questions I get from colleagues is, "How can you be okay with this? You can't smell marijuana usage like you can alcohol! How do you know they didn't toke up out in the parking lot before they came in for shift change?" My answer is simple, "You're right, but you also can't tell if someone popped a couple Vicodin in the bathroom over lunch either. You address it like you would any other thing that impacts an employee's cognitive abilities. If they look or act strange, don't seem to be mentating well, slurred speech, just crashed a vehicle, etc....you make them go get tested. Just like we'd do with suspected alcohol use. Just like we'd do if we suspected someone was popping pills."

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		25
<i>answered question</i>		25
<i>skipped question</i>		85
Number	Response Date	Response Text
20	Jul 15, 2013 3:45 PM	<p>Like your agency, mine is located in a state that has recently legalized marijuana. The results of the ballot indicate that the majority of citizens (at least those voting) support recreational use. This applies a certain amount of pressure to make allowances. Speaking strictly to the inhalation component, any smoke introduced into one's lungs is damaging. Many departments have adopted no tobacco policies (on or off duty) for their employees; thus complicating the question further.</p> <p>This issue is an iceberg; meaning that the real dangers have not yet surfaced. Here are a couple for your consideration:</p> <ol style="list-style-type: none"> 1. If one agency allows it and a neighboring department doesn't, is automatic/mutual aid affected? 2. Will state and federal deployments (wildland, IMTs, USAR, etc.) exclude allowing departments due to the federal laws prohibiting marijuana use? 3. Related to number 2, will state and federal grants be in jeopardy if allowed? 4. What will the costs/impacts to employer-provided healthcare be? 5. What is the position of the labor group(s)? <p>I would greatly appreciate any learned information during your ARP and welcome any other correspondence that could help with your project.</p>
21	Jul 13, 2013 6:44 PM	Marijuana now legal in WA state. (State still working on implementation of law (distribution and control structure).

Item 10 (continued): Please provide any additional pertinent information or comments you may have concerning the subject matter of this questionnaire.

Answer Options		Response Count
		25
<i>answered question</i>		25
<i>skipped question</i>		85
Number	Response Date	Response Text
22	Jul 13, 2013 1:48 PM	Employees in the fire service and/or providing EMS services, through a public or private agency should not be permitted to smoke marijuana, recreational or medicinal. And, all fire protection agencies and EMS agency should be mandated to conduct pre-employment drug and alcohol testing and utilize a random testing program for all employees, regardless of rank or position.
23	Jul 13, 2013 4:15 AM	Our City's legal stance is that marijuana is prohibited by federal law and so it is treated like any other illegal drug (said another way, the state law has no legal standing so we don't recognize recreational or medical use of marijuana at this time).
24	Jul 12, 2013 8:40 PM	Since marijuana is still not legal at the federal level it is not allowable in any of our policies. Since we receive a great deal of federal grant money any marijuana use is a strict violation of our department and city personnel rules.
25	Jul 12, 2013 8:39 PM	I'll be interested in your research

Appendix D: Interview with David Burke

Organization: Duvall-King County Fire Protection District 45

Interviewee: David Burke, Fire Chief

Date: July 31, 2013 Time: 1100

1. How do you believe the legalization of recreational marijuana use in Washington State has affected the potential for employees of your organization to use the drug?

So there's a couple of things here, the first is the legal piece. While it is legal at the state, its not federal. It would be easy for one of our employees to come up and say "You know what? I'm using," or if we discover it somehow or another, we don't have any recourse. It puts us in conflict with our policy. I've reached out to the union and said, "Ok, so how are we going to fix that?" We have to do something internally to take a position and then endorse and enforce whatever we're going to do from there. The second piece is when we hire new employees. In the past marijuana use has been a disqualifier in our drug test. Part of our policy will be to go back, and based on what we figure out with the union, we'll have to figure out what are they going to test for; are they going to test for that (marijuana) or not. Interestingly enough, looking at the difference between alcohol, and if you use that as a comparison; abusive alcohol, while alcohol is legal, any high level presence or chronic abuse can be used to refuse an applicant as well as an individual employee. So we have to factor that out. The presence of it doesn't mean that their disqualified but, if there's a long standing presence and trying to figure out what those thresholds are; do you go back and do another test or do you do tests over time, there's several of those considerations.

One of the big concerns for me is the conflict between the State law and Federal law, because our agency, like a lot of them in this State and yours, participates in State and Federal mobilizations. So, what does that mean if our people are legally doing something in our State and then they go as a part of a Federal team or response and they have that in their system (marijuana), how does that interact? One other piece to that is what happens for grants, for example Federal grants. If we as an organization are knowingly allowing something that is against Federal law, is that going to disqualify us for something like a SAFER grant or anything else? So, big questions and there's not much help from the Federal level because this is all new. The States brought it upon the Federal government so, when you call and ask those questions there's not much support.

So, bringing this back to the end, how has it affected the potential for our employees (to use marijuana)? I guess right now based on policy, it's still outlawed. And our union, the way the contract works is that they approve policies. Until we modify the policy they still work

under, it's just like the regular pieces of our CBA (Collective Bargaining Agreement). If it is against policy despite it being legal, they can't do it.

We do have a zero tolerance policy but that would be something that would be under dispute based on what the law would support. What I would do is use the contract as the guiding document and say, "Ok. We've got this policy, you signed off on it." Until we do an LOA (Letter of Agreement) that says, "yes it's allowable," then we have agreed, both management and labor, that this is not going to be allowed (use of marijuana). Look at some agencies across the country that have disallowed tobacco use by any of their employees. Tobacco is legal if you're of age. It doesn't have the same intoxicating effects like alcohol and marijuana or other drugs, but they can legally say that, "our employees will not use tobacco either on our property or off," and they've survived the challenge. I would think that if labor and management came together they would be able to do the same thing if the culture supports it.

As I mentioned, I've reached out to our union and it's on our discussion list. They're not sure which way to go either. It's interesting because our culture here, I could be wrong but I don't think we have anybody that has been an active user anyway. There may be some that would consider it (marijuana use), but it hasn't been something that anybody has been pushing as a main topic agenda; it's not that important to them at this point. Change is moving slow; it's been months since that has passed (recreational marijuana legislation) but we haven't made any move. From my position, using the CBA as the guiding document and not the State law, nothing's changed for me.

2. As a result of the legalization of recreational marijuana use, has your organization amended its substance abuse policy? If so, what changes were made and why? If changes were not made, why?

I've learned in my years in the fire service you can't afford to be judgmental. If the law says one thing it can't be one way or the other. I may have a personal view but my professional view has to be impartial and what's best for the organization. If the law says it's Ok here in the State, I can't judge somebody with the same scrutiny as I would if they're doing something illegal. If somebody popped positive (positive drug test) although not intoxicated then for me, I would have a hard time, it would be one of those things and I could see what the appeal would be if I took disciplinary action based on the language of the existing policy. The union's appeal would be the law says it's OK. I would argue that the CBA, because they approved the policy, they signed off on it. Your (the marijuana user) is breaking the contract not the law and that would be the only foothold.

Again, recognizing that there is a conflict, we as an organization, both management and labor, we have to decide what's best for us. You look at alcohol; a lot of people in this state that have been using the comparison by looking at prohibition. Alcohol

was illegal then and there was some social scrutiny. Once it became legalized then some of that (social scrutiny) lifted. Is it fair to keep scrutinizing marijuana use when it's legal? It's interesting to me, there's another aspect to it as well when we look at health in relation to tobacco. Some agencies and cities have said none of our employees can use tobacco at home or anywhere. If that's the case, are you going to say "what's the main route of use for marijuana?" It's smoking right? So, smoking of anything may be one of the angles. But how do you discern with a drug test whether it's ingested or inhaled? You can't!

Appendix E: Interview with Rich Martin

Organization: Castle Rock Fire Department

Interviewee: Rich Martin, Battalion Chief

Date: August 28, 2013 Time: 1030

1. How do you believe the legalization of recreational marijuana use in Colorado has affected the potential for employees of your organization to use the drug?

I believe that the potential for the use of marijuana by employees is going to go up dramatically. The use has become so widespread prior to this and the lack of enforcement from the State and local levels has made it to where it has become acceptable. Obviously with Amendment 64 passing it's made it (access to marijuana and marijuana use) that much easier, so I think the potential for employee use is going to increase dramatically in the near future, particularly with the newer people that we bring in. So I see it as an issue. We will turn new applicants away if they test positive because it's still a federal offense and that's what we, at least in the fire department have gone with.

2. As a result of the legalization of recreational marijuana use, has your organization amended its substance abuse policy? If so, what changes were made and why? If changes were not made, why?

We have amended our substance abuse policy to say that, although it has become legal at the state level, it's still illegal at the federal level and that's what we're going to choose to follow. The reason we went with that was obviously, to protect our citizens. Also, when you look at the long-term effects, how long marijuana does stay in your system, how long are you truly going to be impaired? With alcohol we have a 10 hour prior to duty limit, but 10 hours with marijuana still isn't going to make a difference, so it is an issue where that's concerned. That's why we've chosen to follow the federal law at this point in time, until our council would tell us differently.

We don't do random drug testing because the City Human Resources Department has told us that it is an infringement on their employee's rights. With the city it would have to city-wide. We can't just within our department do that (conduct random drug testing); any policy that's made has to be across the city. That's the biggest hurdle we've got to try and overcome.

I think we're all in for quite a ride, this is going to become a big issue. We had the DEA come down about two years ago to audit our controlled substances and it was a five month wait for them to come down strictly because of what they're doing at the federal level in conjunction with the State as far as how it's become legal in the State and what they have to do. At that time it (legalized marijuana use) was just medicinal. We've

seen, in my mind at least, how that's been abused, so now it's become an even bigger issue.

I believe the legalization of recreational marijuana could affect our compliance with the Drug Free Workplace Act because I think, until we're able to get to a state to where we're able to test people randomly, we won't have an idea (of employee marijuana use). It may be one of those cases where it's after something catastrophic or tragic has happened that we're going to find out that it was used (marijuana). That trickles down too; it's going to affect families because if something, god forbid does happen, they're not going to get the PSOB (Public Safety Officers Benefits) benefits because they did have that (evidence of marijuana use). I think that we have an issue with that also.

I'm anxious to see who's going to be the first ones to take this bull by the horns. I think in our line of work at least, it's going to have to be a fire protection district that doesn't have the red tape that a municipality or a state organization has. I think that you guys are going to have to be at the forefront and hopefully, we can all adopt that.

Appendix F: Interview with Charles Walden

Organization: United States Department of Justice

Interviewee: Charles Walden, DOJ Attorney and Liaison to the Colorado Regional DEA Headquarters

Date: August 1, 2013 Time: 1230

1. What employer issues or concerns have you observed or, either directly or indirectly, dealt with since Colorado legalized recreational marijuana?

In reference to a recent incident there was a pharmacy company which asked my opinion on which way they should go since the legalization of recreational marijuana in this state. The issue with that particular employer was when did the drug use occur. THC can exist in the body for up to 30 days. Their policy was so specific because it hadn't been drafted in anticipation of this new recreational drug use. It only addressed drug use in the workplace, not residual content in the body. They had established a no tolerance policy because they were looking basically to catch people using in the workplace, particularly as they identified cocaine and other pharmaceuticals that were available in their pharmacy. They were looking for not only drug use but diversion of drug use in their pharmacy. In one particular case they had identified a person who had THC in their blood stream but the levels were suggestive that use was outside of the workplace. I frankly had to tell them, "There's nothing your current policy is going to do to address this situation. As managers you're going to have to decide whether or not you're going to expand your policy so that it covers THC detection which occurs outside of the workplace."

I've received a number of other questions from people that have individuals who are licensed and qualified through DOT standards, whether that's CDL drivers, or airline pilots, or people that are licensed by the FAA because of the recreational aspects of marijuana use and now they have people who are testing positive. Many employers are saved by the fact that they have a strict no drug use policy. They're able to terminate because Colorado is an at-will state. But with regard to the carriers; for instance a private pilot who flies commercially occasionally has to get his ticket punched that he is available to fly commercial, he's going to fail his physical because the FAA has issued a formal policy saying that although it (marijuana use) may be approved medicinally or recreationally in a particular state, it's still illegal at the federal level. Therefore, it still constitutes a fail on an FAA flight exam. It's so clear with the FAA because of their absolute intolerance.

Concerning drug use in the public safety sector we got contacted, and frankly it wasn't the fire service or the police that contacted us. It was a city north of Denver that had a drug testing policy for building inspectors. Their question was, "We have a tolerance policy. We've tried to steer them instead of firing them. We steer them into programs of rehabilitation and monitor them in the workplace." What their issue was they had these certified building inspectors entering privately controlled worksites in the performance of

their jobs. The worksites however, had strict no drug policies. Their question was, "Are we exposed for liability purposes when we have this person entering their workplaces when we know he has a drug problem." I didn't have an answer for them. So there are a lot of aspects of this.

The other questions that I have received concern mountain communities that run shuttles, either free shuttles or paid, it doesn't really matter. Bus drivers are subject to strict testing. Where the question really lies is what about employees or volunteers who assist on the bus like the tourist busses, the guy or gal who is the tour guide. Nobody really knows what the rules are because this is all so new. So of course on that one I had to say, "We don't know what your issues are." For us though in the federal sector it's so much clearer. There's strict policy, executive order. The only difference between agencies is going to be if you're in an agency that enforces the law, termination is going to be the most likely resolution of a drug use finding versus if you're in the department of agriculture or housing and urban development for example where there may be drug policies that are a slightly more lenient.

2. What legal ramifications might an employer expect if an employee is terminated on the basis of testing positive for marijuana use without signs of intoxication (i.e.: only the inactive metabolite THC is detected)?

That's actually a very easy question for employers in the state of Colorado. The State of Colorado has litigated, both the Court of Appeals for the State as well as the State Supreme Court, and have both upheld the termination of an individual who has tested positive, but who also in possession of a valid medical marijuana card. So as long as there was a clearly articulated policy by the employer that prohibited the drug use, the firing was legally justified and did not constitute discrimination or violation of that person's constitutional rights. Marijuana use in Colorado is a constitutional right under the State Constitution. So they (the marijuana user's defense counsel) can use a two prong approach: first an alleged constitutional violation and second, alleged discrimination on the basis that you're hurt or sick. It's been tried twice now and on both instances the State Court of Appeals and the State Supreme Court has said "No." As for the Federal government it's the same policy if we're speaking specifically about marijuana. There's no recognition of it as a medicine.

There's a case out there called Stone vs. FDIC (Federal Deposit Insurance Corporation) and all it said about employee intoxication in the workplace was, "Consider all other mitigating and aggravating circumstances in addition." So, if the guy was a fifty year employee and he had done outstanding work versus a two year employee who was a substandard performer; be sure you weigh all the factors.

3. As our policies stand now, specifically our substance abuse policy, which you have reviewed, is pretty vague. If we were to terminate an employee today who tested positive for the inactive metabolites of THC, what do you believe would happen if the employee were to legally challenge the termination?

You would not be, in my opinion, on the most firm ground. I think it would depend upon the aggravating circumstances that you could display. I think you certainly could address that. I would urge that you have a standalone drug policy that didn't depend on being tucked into another policy; maybe that one can refer to it. For instance with my particular employer, it's mentioned not only in the code of conduct but as a separate statement. Then there's a separate testing program policy, and it's again, in another general comment as well. So it's in 4 different places, each of them totally separate but each of them referring back to the other independently. I think in your particular situation, if there were aggravating circumstances demonstrative of reduction in job performance, some incident that occurred, termination of the employee could be warranted and defensible. But if you had an individual who appeared to work and tested positive without any other suspicious signs or indicators, I think that as an agency you would pretty much be steered into giving that person at least a second chance if the employee presented a legal challenge. You would be forced to steer them into EAP (Employee Assistance Program), and possibly putting them into a rehab program if their dependency was bad enough. I wouldn't feel as comfortable with your situation as I do in my current job with the removal of an employee who tested positive.

4. Would you recommend that our fire district amend its substance abuse policy to more effectively address the potential use of marijuana by its employees? If no, why? If yes, how?

You should have an independent free-standing policy addressing not only drug and alcohol use, but harassment in the workplace followed by education. I think you would owe it to your managers to give them training on the indicators for drug use because, so quickly, can a manager start saying, "That guys got an alcohol problem or a drug problem," and I say this from absolute personal experience. We had a guy whose performance fell off, whose conduct in the workplace became erratic, who became unreliable, and everybody was thinking, "He's hitting the bottle." It turned out he had PTSD (post-traumatic stress disorder) from a shooting and he broke down but everybody thought he was drinking. It turned out he was a devout Mormon, never drank a drop in his life but nobody knew that. He was just functioning badly because of this shooting. Once we figured that out we were able to help him appropriately. So anyway, I think you have to train your managers as well.

There's a three pronged approach you would want to take. You need an independent freestanding drug policy and from there you can reference it from say, your code of conduct or where ever you need to. Then you'll need a policy requiring training on

substance abuse recognition and procedures; not just for training of managers but for all employees. Finally, and I don't know if it's within your power financially to do it but, you need ensure the EAP availability for paid visits be at least at the industry standard of the 5 to 10 range; if somebody really does have a problem, fewer than that aren't enough. EAP is a valuable tool for managers because now you have an independent person who can assess the employee and, if given permission from the employee, that person can give you feedback and say, "Look, this person really needs to go into a 28 day program or, "This person just needs to choose better friends." There's a big difference between the two. Choosing better friends, we can't help you with that. Twenty-eight day program, well we can help you with that. It gives you that independent assessment from people who are experienced in the field that not only can assist you in managing the employee should you keep them, but can also assist you as a witness should you have to proceed against the employee. Although I've got to tell you, EAP people are loathed to testify because it ruins their credibility that their independent. They're going to testify only by verifiable direct observations that are independently verifiable. They may say, "On his third appointment he stumbled into our office and he reeked of alcohol," they are fine with testifying those sorts of occurrences. They don't want to testify about certain, say, psychological disorders diagnosed during appointment sessions; they're going to want you to get your own expert witness for something like that.

All of that's going a little deep into the question. I definitely think that you can, and you should amend your policies to directly address marijuana use, substance abuse and to have the other prongs to follow it up. You can't have the world's toughest policy and not have the other stuff. You've got to have the training and you've got to have the programs to help the people who may have fallen off to the side because of whatever's going on in their lives. To terminate an employee without all of these things in place is not only unfair, it's not defensible. If you have a strict intolerance, or zero tolerance policy but you don't have all the other components in place, you're going to lose. So then, you might have a person in the workforce who challenged you and won and who may start thumbing their nose at you; hopefully that won't happen but it certainly could. There's one final point I'd like to make concerning a substance abuse policy which includes a component of random drug tests. Even though the policy may mandate random drug tests for all personnel but employees are never subject to them, then eventually they'll think the employer's stance on no drugs is a joke.