Urban Planning and the Cannabis Industries

Guidance for Implementing Green Industries with High-Level Opportunities

The medical cannabis industry is legal in twenty-nine states and Washington D.C. with ninety-three percent national support and the recreational cannabis industry is legal in eight states with fifty-nine percent national support. To date, the retail sales of the state-sanctioned cannabis markets in Colorado, Oregon, and Washington have generated $836 million in tax revenue. In 2016, the Marijuana Business Factbook was published with employment numbers for the cannabis industries estimating approximately 150,000 jobs, which was calculated by comparing the estimated number of cannabis-related businesses in the nation and the average number of workers employed by the companies in each impacted sector. Colorado alone allocated approximately $40 million in 2016 to finance capital investments such as revitalization, affordable housing, education, infrastructure, and administration. As more states pass legislation legalizing either of the cannabis industries within their state boundaries, and with the increasing support of the national population, urban planners across the country will have no option but to integrate the industries into their regions. When implemented properly, these new industries will generate significant revenue for municipal governments, as well as create an identity of inclusivity and social justice. However, both cannabis industries come with challenges and if not addressed, these challenges will introduce disarray and misconception that will disrupt their viability for success.

This implementation guide to the cannabis industries will inform urban planners in a variety of positions as to how they should cater the new industries to the needs and values of their regions. It is key that planners, city officials, and developers understand the depth of the industries’ subsequent impacts and start on the discussions, research and analysis, and public meetings that will happen prior to the establishment of either industries. Should decision-makers wait until full legalization to begin considering the many impacts of the industries, it would take several years of significant costs and lost revenue to perfect organization and enforcement. A lack of forethought will affect multiple levels of governmental entities and certain demographic populations in various areas of development. These impacts have appeared in case studies such as Denver, Colorado and the state of Illinois. The data collected and analyzed was gathered through a variety of methods such as interviews, economic impact analyses, ethnographies, municipal impact analyses, and research of articles, reports, docuseries, and documentaries.

Throughout this guide, the characteristics of the medical and recreational cannabis industries, in relation to the many areas of urban planning, are broken down into three levels of directness which require various tasks from the local, state, and federal governments. Planning areas that have satisfactory organization are related to permitting the industry to thrive economically and generate much needed revenue. Secondary areas that need improvement in research and implementation are based on recovering from the impacts of the first wave of policy and enforcement. The third level discusses planning areas that are unsatisfactory and therefore need to make great strides in communication, development, research, analysis, and discussion to be effective and efficient. Implementation of these industries will not be the same across states, cities, or even neighborhoods as they are easy to cater to the desired goals and values of each entity, thus creating competition and unique markets.

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Modern History of Cannabis Illegality in America

It is necessary to understand the history of cannabis and its relationship with legalization to fully comprehend just how important it is that the industries be taken seriously when implementing them in the 21st century. The discussion of the cannabis industries includes both subspecies of the flowering plant’s genus, marijuana and hemp. Misconception between the two types of plants has been the foundation of America’s controversial support of the industries over the centuries. There are three varieties of cannabis that are characterized by physical appearance and medicinal effects: Cannabis Indica, Cannabis Sativa, and Cannabis Ruderalis. Marijuana contains tetrahydrocannabinol (THC) and cannabidiol (CBD) in high concentrations, is cultivated in limited climates for medicinal and recreational drug production, and is a word derived from the Mexican Spanish word marihuana. Hemp contains THC and CBD in very miniscule amounts, is cultivated for industrial use in a wide range of climates, and is a plant that humans have relied on for approximately 10,000 years. Both marijuana and hemp are currently illegal to grow in the United States, as past prohibitionists have equated the two species.

Federal Policy

The era of President Richard Nixon introduced the Comprehensive Drug Abuse Prevention and Control Act in 1970 (Controlled Substances Act), which classified drugs in four categories of considered danger with cannabis (marijuana and hemp) as a highly-restricted Schedule 1 drug. The national bipartisan commission appointed by President Nixon for investigating the relationship between marijuana and drug abuse, or the Shafer Commission, recommended in 1972 that small quantities of marijuana should be legalized. President Nixon rejected the findings and in 1973 he authorized the merge of the Bureau of Narcotics and Dangerous Drugs, the Office for Drug Abuse Law Enforcement, and the Office of National Narcotics Intelligence into one entity known as the Drug Enforcement Administration (DEA). When Ronald Reagan won the presidency in 1980, he initiated the War on Drugs which resulted in the Antidrug Abuse Acts of 1986 and 1988. These acts required severe federal prison sentences, including life without parole for offenders on their third strikes, for any person caught with any amount of cannabis.

President Reagan’s Vice-President, George H.W. Bush, won the 1988 presidential election and declared his own War on Drugs, effectively creating the contemporary idea of cannabis as an illegal product and costing the nation a significant amount of funding in unnecessary enforcement. In 1992, Bill Clinton won the presidential campaign running on a platform for treatment rather than incarceration, but his priorities shifted and he escalated the anti-drug policies instead, which lead to racial disparities in those convicted of marijuana-related crimes. George W. Bush was elected in 2000 and despite a drug war that was tapering down, he authorized the rapid escalation of militarizing the enforcement of domestic drug laws that resulted in nearly 40,000 SWAT raids on Americans yearly. By 2005, eleven states had legalized the medical use of marijuana; however, the United States Supreme Court voted in favor of Congress continuing to prohibit and prosecute citizens and business entities operating and medicating within the industry. Although President Barack Obama was in support of state medical marijuana laws, he was unable to authorize a shift in funding from drug control to health-based approaches, resulting in the continuance of raids closing down permitted dispensaries and cultivators.

While the federal cannabis policies and regulations over the decades and centuries have been a strong reflection of the president and their party at the time, other important players began to come into play during the early 2010s. In 2009, the Department of Justice (DOJ) Deputy Attorney General David W. Ogden issued a memorandum for all U.S. attorneys with the subject of investigations and prosecution in states authorizing the medical use of marijuana. The Ogden Memo provided “clarification and guidance to
federal prosecutors in States that have enacted laws authorizing the medical use of marijuana”. The memo made clear that the DOJ was committed to the enforcement of the Controlled Substances Act in all states and that Congress had determined marijuana a dangerous drug that provided a significant amount of revenue to large-scale criminal enterprises. However, the DOJ was also committed to efficiently using its limited investigative and prosecutorial resources and therefore, federal resources would not be focused on individuals, within states with legalized medical marijuana, whose actions were in clear compliance with existing states laws. To maintain some form of federal enforcement on the state-level, prosecution of commercial enterprises that unlawfully marketed and sold marijuana for profit would continue to be a priority of the DOJ. In closing, the memo remained firm in the clarification that it did not legalize marijuana or provide a legal defense, but rather it served as a guide in the exercise of discretion for federal investigative and prosecutorial resource allocation.9

The Ogden Memo of 2009 was the first in a series of DOJ memos from Deputy Attorney Generals in a federal effort to provide uniform guidance in the focus of federal investigations and prosecutions. Most notably, were the updated guidelines from Deputy Attorney General James M. Cole over the course of three DOJ memos that addressed the growing number of states legalizing marijuana. The first memo was released in 2011 and resulted in great pressure being placed on entities of the medical cannabis industry. In 2013, the second memo addressed the “contradiction between the federal prohibition of cannabis and Colorado’s and Washington State’s popular votes to legalize recreational marijuana in 2012”. Contrary to perceived notions, the 2013 memo was not a reversal of the 2011 memo, but rather a reaction to the resulting situation of two initiatives at the state-level: the decriminalization of marijuana and the establishment of regulatory systems to control and tax the product.10

The following list is the priorities of DOJ in terms of investigation and prosecution as outlined by the Cole Memo of 2013:

- Prevent the distribution of legal marijuana to minors
- Prevent revenue from legal marijuana sales in funding criminal enterprises
- Prevent legal marijuana from crossing state lines
- Prevent the use of legal marijuana sales being used as a cover for illegal activity
- Prevent the use of violence and use of firearms in growing or distributing legal marijuana
- Prevent driving under the influence, or the exacerbation of other adverse public health consequences, associated with marijuana use
- Prevent the cultivation of legal marijuana on public lands
- Prevent legal marijuana possession or use on federal properties11

The final Cole memo in 2014 attempted to alleviate concerns from law-abiding licensed cannabis businesses in need of financial services, as FDIC banks were unwillingly to work with them. Cole stated in an interview that the third memo addresses the area that concerned him the most as “the last thing you really want here is a cash business, because there’s a lot of cash involved, and what that breeds is armed conflict, because people are either trying to steal the cash or they’re trying to protect the cash, because they can’t avail themselves of banking”.12 In response to the third Cole memo, the Financial Crimes Enforcement Network (FinCEN) of the United States Department of the Treasury, issued a memorandum with clarification on the expectations of the Bank Secrecy Act (BSA) in regards to marijuana-related businesses and how financial institutions can provide services consistent with federal and state law enforcement priorities.13 Since the federal government prohibits marijuana and most financial institutions are insured
federally, any financial institution that approves offering services to marijuana-related businesses, including those licensed under state law, are required to file either “Marijuana Limited” Suspicious Activity Reports (SARs) for institutions acting within state laws, “Marijuana Priority” SARs for any institutions with suspicious banking behavior, or “Marijuana Termination” SARs for any institutions threatening the bank’s effective anti-money laundering compliance program.14

The Ogden Memo, Cole Memos, and FinCEN Memo set the parameters allowing the medical cannabis industry to grow and the recreational cannabis industry to begin. American’s history with cannabis is comprised of political turmoil and a public stigmatization that has kept the industries from easily being implemented, hindering the obtainment of the medication by patients who genuinely benefitted from the plant. Understanding the historical relationship the nation has with the industries, fortifies the need to thoroughly investigate the best practice of implementation to avoid conflict.

State Policy

While the main point of discussing state-level cannabis-related legislation is to understand the full extent of legalization, it is necessary to analyze the prominent state regulated markets that already exist. Comprehending what impacts were seen by these pioneering markets and their choice in implementation methods, provides states with new legalization a base guide for utilizing best practices. It is not safe to examine only one state’s interaction with either of the cannabis industries, because what worked, or didn’t work, for that state may not produce the same results across state lines. While California set the implementation standards for the medical cannabis industries, Washington State, Colorado, and Oregon set the basis for recreational cannabis industries. States that have since legalized either cannabis industries have used the regulations from these four states to influence their choices in founding and piloting their programs.

In 1996, California voters passed Proposition 215, or the Compassionate Use Act, to become the first state in America to legalize the medical marijuana industry and establish a foundation for state-level regulation that is replicated across the country in other states.15 In 2010, California voters rejected Proposition 19, an initiative for the state to become the first to legalize the recreational marijuana industry, due primarily to the fundamental regulation decisions being left up to the local governments in terms of production, sale, and taxation.16 As medical marijuana dispensaries began proliferating California’s cities and towns, local governments cracked down on zoning laws to prohibit dispensaries from operating inside city limits and in 2013, the California Supreme Court ruled in favor of upholding municipal-level bans versus reducing patients’ access to the product.17 Most recently in 2016, after twenty years of medical legalization, California voters passed an initiative that legalized the recreational use of marijuana, enacted a $9.25 cultivation tax per ounce of flower and 15% sales tax, and restricts big businesses from obtaining retail sale licenses for five years.18

In 2012, voters in Washington State and Colorado approved Initiative 502 and Amendment 64, respectively, followed by Oregon in 2014 with Ballot Measure 67. These ballots supported the establishment of recreational marijuana industries within state lines and initiated tax regulations on such sales. The largest difference between these three states’ policies is regarding growing personal, non-medical use. While Washington State bans personal cultivation practices entirely, Colorado allows cultivation of six plants per adult, maximum of twelve per household, for personal use or to give away, and Oregon allows personal cultivation, but has no set limit on the number of plants, flowering or otherwise. Another significant difference was that Washington State placed a much higher sales tax of 25% at each stage of sales, while Colorado’s state sales tax was 15% at only the wholesale level, and Oregon did not initially set a specified sales tax at all. Washington State’s licensing is managed by its Liquor Control Board, Colorado’s
state licensing is managed by the State Department of Revenue, and Oregon created the New Oregon Cannabis Commission to oversee licensing in that state. A final notable difference is that Oregon legalized industrial hemp the same as any other crop with no required licenses, fees, or regulations; however, both Colorado and Washington State defined industrial hemp as containing less than 0.3% of THC and passing the regulation of industrial hemp to the corresponding regulatory boards.19

Since California first legalized a state-level medical marijuana industry, twenty-nine other states and Washington D.C. have followed suit and legalized medical marijuana to some capacity with a variety of limits and regulations.20 Table 1 summarizes the medical marijuana markets in America in terms of dates of passed legislation, support percentage, and number of participating residents. In the four years of recreational marijuana markets in Colorado and Washington State, six more states and Washington D.C. have legalized retail sales as well.21 Table 2 summarizes the recreational marijuana markets in America in terms of dates of passed legislation and support percentage.

Table 1 – America’s Medical Marijuana Legalization by State

<table>
<thead>
<tr>
<th>State</th>
<th>Year Passed</th>
<th>Percentage of Yes Vote</th>
<th># of Patients*</th>
<th># of Patients per 1,000 Residents*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>1998</td>
<td>58.00%</td>
<td>1,132</td>
<td>1.5</td>
</tr>
<tr>
<td>Arizona</td>
<td>2010</td>
<td>50.13%</td>
<td>89,405</td>
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<tr>
<td>Arkansas</td>
<td>2016</td>
<td>53.20%</td>
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<td>N/A</td>
</tr>
<tr>
<td>California</td>
<td>1996</td>
<td>56.00%</td>
<td>758,607</td>
<td>19.4</td>
</tr>
<tr>
<td>Colorado</td>
<td>2000</td>
<td>54.00%</td>
<td>107,798</td>
<td>19.8</td>
</tr>
<tr>
<td>Connecticut</td>
<td>2012</td>
<td>64.64%</td>
<td>8,685</td>
<td>2.4</td>
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<tr>
<td>Delaware</td>
<td>2011</td>
<td>70.97%</td>
<td>102</td>
<td>0.1</td>
</tr>
<tr>
<td>Florida</td>
<td>2016</td>
<td>71.30%</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Hawaii</td>
<td>2000</td>
<td>60.00%</td>
<td>13,021</td>
<td>9.1</td>
</tr>
<tr>
<td>Illinois</td>
<td>2013</td>
<td>55.17%</td>
<td>4,037</td>
<td>0.3</td>
</tr>
<tr>
<td>Maine</td>
<td>1999</td>
<td>61.00%</td>
<td>24,377</td>
<td>18.3</td>
</tr>
<tr>
<td>Maryland</td>
<td>2014</td>
<td>92.86%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>2012</td>
<td>63.00%</td>
<td>19,279</td>
<td>2.8</td>
</tr>
<tr>
<td>Michigan</td>
<td>2008</td>
<td>63.00%</td>
<td>182,091</td>
<td>18.4</td>
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<tr>
<td>Minnesota</td>
<td>2014</td>
<td>70.68%</td>
<td>1,041</td>
<td>0.2</td>
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<tr>
<td>Montana</td>
<td>2004</td>
<td>62.00%</td>
<td>13,640</td>
<td>13.2</td>
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<tr>
<td>Nevada</td>
<td>2000</td>
<td>65.00%</td>
<td>14,482</td>
<td>5.0</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>2013</td>
<td>80.75%</td>
<td>0</td>
<td>0</td>
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<tr>
<td>New Jersey</td>
<td>2010</td>
<td>73.00%</td>
<td>3,727</td>
<td>0.4</td>
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<td>New Mexico</td>
<td>2007</td>
<td>66.67%</td>
<td>19,629</td>
<td>9.4</td>
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<tr>
<td>New York</td>
<td>2014</td>
<td>87.83%</td>
<td>1,301</td>
<td>0.1</td>
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<tr>
<td>North Dakota</td>
<td>2016</td>
<td>63.70%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Ohio 2016 68.46% N/A N/A
Oregon 1998 55.00% 77,620 19.2
Pennsylvania 2016 78.28% N/A N/A
Rhode Island 2006 88.54% 13,105 12.4
Vermont 2004 61.18% 2,542 4.1
Washington State 1998 59.00% 138,056 19.2
Washington D.C. 2010 100.00% 3,445 5.1
West Virginia 2017 77.27% N/A N/A

* N/A = State legalized after March 2016 and therefore had no industry at the time of releasing numbers

Table 2 – American’s Recreational Marijuana Legalization by State

<table>
<thead>
<tr>
<th>State</th>
<th>Year Passed</th>
<th>Percentage of Yes Vote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>2014</td>
<td>53%</td>
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<tr>
<td>California</td>
<td>2016</td>
<td>56%</td>
</tr>
<tr>
<td>Colorado</td>
<td>2012</td>
<td>55%</td>
</tr>
<tr>
<td>Maine</td>
<td>2016</td>
<td>54%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>2016</td>
<td>53%</td>
</tr>
<tr>
<td>Nevada</td>
<td>2016</td>
<td>54%</td>
</tr>
<tr>
<td>Oregon</td>
<td>2014</td>
<td>56%</td>
</tr>
<tr>
<td>Washington State</td>
<td>2012</td>
<td>56%</td>
</tr>
<tr>
<td>Washington D.C.</td>
<td>2014</td>
<td>65%</td>
</tr>
</tbody>
</table>

Public Support

In addition to understanding the history of cannabis legalization, it is also important to note how the public’s support of legalization and perceived stigmatization has changed over time. Much like legalization history, support for the industry has risen and fallen multiple times and is now at its highest percentage in recent history. Legalizing marijuana has been a fairly controversial topic throughout the centuries and during President Reagan’s War on Drugs in the 1980s, “a political hysteria about drugs led to the passage of draconian penalties in Congress and state legislatures that rapidly increased the prison population.” In 1985, only 2-6% of Americans polled saw drug abuse as the country’s number one concern, but by 1989, after the enactment of the Antidrug Abuse Acts, this proportion had grown to an astounding 64%. With the election of George H.W. Bush, the media began focusing on other concerns and the proportion of Americans polled that believed drug abuse was the country’s number one concern had drastically fallen to 10%. In recent history, politicians, including New York City Mayor Michael Bloomberg and President Barack Obama, have publicly admitted to having consumed marijuana in the past and advocated for regulation reforms, resulting in a shift in public opinion “in favor of sensible reforms that expand health-based approaches while reducing the role of criminalization in drug policy.”

For the most part, the public opinion has reflected that of the current governing party; however, in recent times American residents are disagreeing with the governing party and its representatives in the offices of the President and the Deputy Attorney General. Quinnipiac University distributed a poll on February 23, 2017 to understand what key issues the governing body, the Republicans, had differing opinions on than the American People. While 61% of Republicans are opposed to the legalization of retail...
marijuana, 59% of American voters are in favor of the action and 71% believe that “the government should not enforce federal laws against marijuana in states that have legalized medical or recreational marijuana use”. While 51% of voters over the age of 65 years are opposed to retail marijuana, every other demographic group polled supported the movement. In terms of the medical marijuana industry, 93% of American voters, in every listed group, support legalizing the plant for medical purposes when prescribed by a doctor. Despite this disagreement between the general public and federal-level representatives on the decision as to whether the federal government should legalize cannabis, states across the country are listening to their constituents and are continuing to legalize the industries at the state-level. These state actions should influence federal representatives to listen to the voters and put aside their personal feelings about the plant and legalize it for the greater good of the nation.31

Figures 1 – 4 convey the trends between 1973 and 2016 of the proportions of American voters, in terms of demographic characteristics, and their support of legalization. Figure 1 conveys the controversial approval history of the American people as their support changed with the governing bodies. Figure 2 shows the approval distribution among age groups, with ages 18-34 showing the greatest support at 66% in 2016. Figure 3 demonstrates the impact of education on the approval ratings, resulting in those with less than a high school education disapproving the most at only 40% approval. Lastly, Figure 4 highlights trends of approval ratings by labor force status with those not in the labor force trailing at 51% support and those unemployed in the labor force at the highest with 66% support.32
Figure 2 – American Voter Opinion Favoring Legalization by Age Cohort

Figure 3 – American Voter Opinion Favoring Legalization by Education Level
Case Studies

As more states begin passing legislation legalizing cannabis markets within their borders, case studies are analyzed to discover how various regulations are chosen and enforced by governmental departments. The subsequent impacts of those regulations differ between the medical cannabis industry and the recreational cannabis industry. They also have different types of impacts, and levels of severity, depending on the size of the jurisdiction of the governing body. For example, state level regulations have a different set of obstacles than municipal level regulations, and state level regulations can be more prohibitive in implementation.

This report utilizes the state of Illinois as a case study due to its current fiscal budget crisis and its location in the Midwest. Approved by the House with a 61-57 vote on April 17, 2013 and by the 35-21 Senate vote on May 17, 2013, Governor Pat Quinn signed House Bill 1 into law on August 1, 2013, legalizing its medical marijuana industry and establishing the Compassionate Use of Medical Cannabis Pilot Program Act, which allowed for the registration of cultivation centers and dispensaries for four years until 2017. Upon enactment of the bill, a 7% sales tax per ounce went into effect for businesses cultivating medical cannabis and mandatory-registered patients were allowed to purchase 2.5 ounces every two weeks. The program currently covers forty different medical conditions, having recently added PTSD and terminal illnesses with a diagnosis of less than six months. In January 2014, the state Department of Public Health released proposed rules for obtaining a registered medical cannabis card, including a fingerprint-based criminal history background check, an annual $150 application fee, and a void of Firearm Owners Identification Cards and Firearm Concealed Carry Licenses. Later that year in July, Governor Quinn signed Senate Bill 2636 to allow children under the age of 18 to receive treatment in non-smokable forms of medical marijuana. August 2014 saw a revised list of rules from the Department of Public Health removing restrictions on gun owners, lowering the application fee to $100, and issuing discounts for veterans,
caregivers, and patients on social security insurance and social security disability insurance. Most recently on July 1, 2016, Governor Bruce Rauner signed SB 10 into law, effectively extending Illinois’ pilot medical marijuana program until 2020.\textsuperscript{33}

Figure 5 conveys the spatial extent of the Illinois program with twenty-one cultivation centers and forty-nine dispensaries. Illinois chose to limit the number of cultivation centers and dispensaries based on the twenty-two state police districts. Per Section 85 of the Bill, “the Department of Agriculture may not issue more than one registration per each Illinois State Police District boundary” in terms of the issuance or denial of medical cannabis cultivation permits. Currently, every state police district has a permitted cultivation center, with the exception of District 15. Per Section 115, “the Department of Financial and Professional Regulation may issue up to 60 dispensing organization registrations for operation…the organizations shall be geographically dispersed throughout the State to allow all registered qualifying patients reasonable proximity and access to a dispensing organization”. For seventeen of these districts, this has equated to two registered dispensaries each, with the exception of Chicago area districts 2, 3, 4, 5, and 15 with six, thirteen, four, three, and three dispensaries, respectively. Criteria for spatial distribution will be discussed in further detail later in the report.\textsuperscript{34}

While the state of Illinois is the case study for medical marijuana, the municipality of Denver, Colorado is the case study for recreational marijuana. As the history of Colorado’s legalization has already been highlighted, this report will discuss further the city-level impacts of retail marijuana and the concerns in which city officials and industry workers had to face and overcome since recreational legalization. The data collected and analyzed for Illinois and Denver was gathered through a variety of methods, primarily interviews with city government workers involved in policy decisions and enforcement, interviews with individual budtenders at a variety of dispensary locations, and impact analyses in economics and societies.
Data Collection Methodology

In an effort to identify the areas of urban planning that are impacted by the legalization of either cannabis industries, several interviews were conducted in the Denver area and the state of Illinois with practicing planners and representatives from cannabis-related businesses, as well as other non-planning professionals who have interacted with the industries in some capacity. Cannabis-related representatives included dispensary sales associates, managers, and owners; while professionals included city planners, nonprofit coordinators, economic development managers, investment brokers, doctors, elected city officials, athletes, and real estate developers. The data collected from the interviews identified several key areas of impact from legalization that were then rated for success in implementation. These primary impacted areas are development services, economic development, community development, real estate development, sustainability, and urban design. After highlighting the characteristics that determined the ratings, recommendations are given for future policies at federal, state, and local government levels.

Rating Criteria

There are three categories for rating the impacted areas by level of success in implementation: Advanced Development, Early Development, and Undeveloped. Planning areas that have developed advanced organization have established policies and regulations that are consistently being discussed and updated to reflect the everchanging concerns of the public and officials. Areas receiving an Advanced Development rating are Development Services and Economic Development, which are related to permitting the industries to thrive economically and generate revenue. Secondary planning areas that need improvement in research and implementation are based on recovering from the impacts of the first wave of policy and enforcement. Those areas receiving an Early Development rating are Community Development and Real Estate Development. The third category contains planning areas that have received an Undeveloped rating and therefore need to make great strides in communication, development, research, analysis, and discussion to be effective and efficient. These planning areas include Sustainability and Urban Design. The effects on each planning area are discussed using the data from the interviews, and how those effects determined the final ratings.

Advanced Development Planning Areas

Development Services

This urban planning area includes city government departments, such as city planning, permitting, engineering, fire protection, public safety, and code enforcement. The planning area is also the most advanced because these professionals needed to respond quickly to arising issues to protect the integrity of their community, as well as to protect the safety of their citizens. City and state regulations for the cannabis industries are influenced by input from the public during city meetings in initial planning stages, recommended by city professionals after thorough analyses, agreed upon by city council members in voting processes, and then enforced by safety and protection services through codes, policies, and ordinances. This process of organization and the approval of such, is made known to residents through public voting processes, media communications, and community participation.

City Planning interacts with the cannabis industries through land use zoning, and as a result plays a significant role in the spatial distribution of cannabis-related businesses, as well as how those businesses impact local communities socially in terms of living environment and accessibility. According to Daniel Rowland, the Citywide Communications Advisor for the Denver Excise and Licenses Department, the
medical marijuana code enacted in 2010 was the city’s first attempt at zoning regulations, which were similar to the existing liquor code, but stricter. When the recreational industry was legalized in 2013, the city established its retail marijuana code which was built off the existing medical code, but with the addition of proximity restrictions for dispensary locations. Existing medical retail locations established prior to this code, were grandfathered in which resulted in clustering and corridors of land uses. The primary proximity restriction stated that no dispensary was to be in operation within 1,000 feet of any another dispensary, school, drug rehab center, daycare, etc. Although there was a significant amount of real estate available, the proximity restrictions limited the qualifying sites and created a barrier for new businesses. Rowland clarified that the city’s business licenses determined the respective zoning districts for cannabis-related operations and these licenses mirrored the four types of marijuana business licenses enforced by state law. The four marijuana business license types issued in Denver are: Retail; Industrial Production; Manufacturing; and Testing and Research Facilities.\(^{35}\)

Kenneth Brewer, the Commercial Planning Supervisor for the Denver Community Planning and Development Services Department (CPD), defines these use types further. Retail licenses are issued to dispensaries and zoned as such. Grow facilities, or plant husbandry, are licensed and zoned for Industrial Production. In order to classify the production of MIPs, or Marijuana Infused Products, there are three subcategories of the Manufacturing land use type: commercial food prep; manufacturing and fabrication assembly general; and manufacturing and fabrication assembly heavy. Commercial food prep includes kitchens baking items infused with canna butter and catering companies specializing in cannabis infused meals. Extraction, previously unknown to professionals, determines the operation as manufacturing and fabrication assembly. Brewer states that how big the operation is, and the method of extraction, determines whether the business is a general classification, or a heavy. Water-based extraction is a general classification, while ethanol and butane based extractions are general only if the operation is less than 3,000 square feet, otherwise they are the heavy classification. Heavy manufacturing operations have to be located in districts zoned for such businesses and this practice pushes the larger operations further into the industrial zones with grow facilities. Any businesses dispensing for health purposes only, such as wellness centers and their massages with marijuana-infused lotions, are classified under the Medical Office land use type.\(^{36}\)

Zoning for the land uses of cannabis-related businesses was also impacted by fire safety engineering concerns, as outlined by David Carlson, the Electrical Engineering Supervisor for the CPD. During the initial phase of implementation, the general public began installing grow facilities in structures without adequate electrical facilities or proper electrical permits, which created significant hazards. Grow facilities require electrical systems that can handle the substantial electrical demand from growing cannabis indoors, which Denver specifically required. There are impacts on local utility providers as they have to make investments in improvements to the infrastructure of their distribution systems within the city, including the installation of new larger transformer equipment. Jill Jennings-Golich, the Deputy Director in the Office of the Manager of CPD, explains further that older industrial buildings were built on property lines with no setbacks, which did not allocate room for the larger transformers, and this issue had to be brought before the Board of Adjustment to apply for setback exception variances in two cases. Brewer highlights how these electrical connection concerns also impacted residential zoning, such that residents would apply for a 200-amp circuit for their garage, which typically ran off 60 amps, or they would bootleg power from a power pole, effectively catching their homes on fire. Another residential fire safety concern, was the practice of applying for a separate service entry point, as fire rescue teams would respond to a call, turn off the residence’s licensed service entry point, and enter the property under the impression that service had been disconnected, only to discover that there were two disconnects, resulting in a potential explosion.
Eventually, an amendment to the International Residential Code 2015 Series was passed, effectively limiting the number of electrical services, because the current code was not specific enough with its dwelling unit term to encompass detached accessory structures.\textsuperscript{37}

As the elected and public officials in Denver continue to refine cannabis market regulations, its citizens continue to find new ways to avoid the official process. An issue recently addressed was that of non-commercial enterprises, or rather co-ops, similar to a community garden concept. Owners of large structures would divide up their spaces and lease to individual growers, creating a shared, unlicensed, grow facility. While personal cultivation was regulated to six mature plants per adult, a maximum of twelve per household, there were no regulatory tools in place to control the rising co-op situation. These facilities were infiltrated by the cartels at one point, fueling the marijuana black market. The city amended the zoning code to institute a 36-plant limit per lot and enforcement of this policy has already begun. Another troublesome service that has arisen and is in need of regulation, is that of smoke pubs. One of the initiatives on the 2016 ballot for social consumption was for a Standard Pot Club business license. The future of cannabis regulation will continue to grow as the product becomes more mobile, perhaps with licensed food trucks.\textsuperscript{38}

If development services departments do not enact their codes and regulations in a timely manner, then the success of the industries’ implementation will be greatly hindered due hurtful restrictions that do not allow any businesses to become established, or even to locate appropriate spaces at affordable rates. In some cases, communities that do not wish to host the industries, have used restrictive zoning to effectively keep their neighborhoods cannabis free. Cities such as Urbana, Illinois wanted to create a welcoming environment for the industries and therefore were not inclined to impose additional standards beyond what the state required.\textsuperscript{39} While development services allow communities to use regulations to control the depth of the cannabis industries within their boundaries, a zoning challenge can affect the economic development planning area, such that if the businesses cannot begin operations, then they cannot begin generating licensing or tax revenue for the city or state.

\textit{“Try to understand what the uses are, what the community look, and feel, and impacts of these businesses are, and put them in their right zone districts accordingly before you just start letting them proliferate throughout the city and try to layer on regulations afterwards.”}

– Dan Rowland, Denver Excise & Licenses Department

\textit{Economic Development}

The planning area in relation to the economy has been driven by the multiple revenue sources that are established under legalization. From licensing and permitting, to general sales and specialty taxes, the cannabis industries can be significant revenue generators, the recreational industry more so due to heavier taxation. As of May 2016, the Tax Foundation reported that the size of the national marijuana market had reached $46 billion a year and was 0.28% of the nation’s Gross Domestic Product (GDP). The foundation also determined that if there were a nationally mature marijuana industry, then $28 billion would be generated by tax revenue at the federal, state, and local levels. This tax revenue would include $7 billion in federal revenue, $5.5 billion in business taxes, $1.5 billion from income and payroll taxes, and $1 billion in state and local revenues. The state and local revenue figure is significantly smaller than the federal revenue figure due to a majority of the former’s revenue being expended to support the administration of the industries. Should a federal tax similar to the current tobacco tax be imposed, or $23 per pound of product, there is the potential for another $500 million in federal tax revenue. Alternatively, if there were a 10% sales surtax placed on marijuana, an additional $5.3 billion per year would be generated nationally.\textsuperscript{40}
By January 1st, 2016, Denver had 657 medical marijuana business licenses, 392 recreational business licenses, and 453 other cannabis-related business licenses, generating approximately $3.7 million in city revenue for 2015. Rowland stated that not only does the city collect a licensing fee from these businesses, but they also collect various permitting fees as each business must complete an inspection card to qualify for licensure. This inspection card is completed by five city agencies and permits are issued for each: Building and Construction, Community Planning and Development, Fire, Environmental Health (for MIPs), and Excise and Licenses. Once the business is established and begins operations, then the city and state begin collecting various forms of taxes.

To begin, Colorado State issues a 2.9% Standard Sales Tax on both medical and recreational sales, as well as an additional 10% Special Sales Tax on recreational sales. The state contributes a portion of its revenue from the special sales tax, back to participating cities through a State Shareback. The city of Denver issues a Standard Sales Tax of 3.65% on top of the state’s tax for medical and recreational purchases, and an additional 3.5% Special Sales Tax on recreational sales. In 2015, the standard sales taxes in Denver generated approximately $15 million in revenue, the special sales taxes generated nearly $7.7 million, and the state shareback provided $3.2 million. These tax revenues, plus the licensing fees, produced $29.5 million in revenue to be placed in the city’s General Revenue Fund, equivalent to 2.5% of the city’s income. Table 3 contains actual totals for the marijuana industries in Denver, conveying that retail sales contribute 53% of the revenue and therefore is a significant driver in regulating the industries and how much revenue can be generated. In addition to the standard and special sales taxes for medical and recreational marijuana purchases, because Denver lies within two special tax districts, the city also issues a 1.00% sales tax for the Regional Transportation District (RTD) and a 0.1% sales tax for the Scientific and Cultural Facilities District (SCFD).

Denver’s administration of the industries in 2015, incurred $6.9 million in budgeted marijuana expenses and encompassed thirteen different city departments summarized into four priority areas of funding: regulation, education, enforcement, and public health. According to Rowland, the special sales tax on recreational retail sales allowed for the funding of the departmental expenses in the Office of Marijuana Policy, the Police Department, the City Attorney’s Office, Community Planning and Development Services, the Fire Department, Behavioral Health, Affordable Housing, the Office of Children’s Affairs, Excise and Licenses, Parks and Recreation, Environmental Health, Denver Health, and the Department of Finance. Rowland also conveyed that such 2015 departmental expenditures included $750,000 allocated to youth prevention and education in the form of a behavioral healthy lifestyles grant program to provide information on positive and negative effects of the product on the youth; and another $750,000 in public health in the form of an affordable housing diversion grant program. In 2014, nearly $3 million of marijuana revenue was allocated to a new city recreational center project.

Brandon Boys, the Economic Development Manager for Urbana, Illinois stated that on an individual scale, dispensaries in Illinois are burdened by high-cost expenses and by the time an application
is submitted to the state, these businesses will have invested at least $250,000. In a more direct quote from Dan Linn, the General Manager of Champaign’s Phoenix Botanical Dispensary who worked closely with owners to get licensed and permitted, in addition to the high one-time costs of construction ($300,000) and security overhead ($15,000) to achieve compliance with the state law, the business also pays an annual permitting fee to the state of $25,000. Linn conveyed that the state used a significant portion of its licensing and permitting revenue, to invest approximately $1.8 million in computer software to develop a sophisticated system to record registered medical marijuana card holders.

In addition to licensing the marijuana-related businesses, states also have registration fees for employees’ support and key badges, as well as patients’ medical cards. Danni Strite, a support-level budtender at Northern Lights in the Denver suburb of Edgewater, has worked in the industry for several years and reports that the state has capitalized on the badge registration fee, by increasing the fee from $75 for support badges and $150 for manager key badges, to $150 and $300, respectively. She contributes this increase to an effort in curbing the increasing number of in-migration applicants to the state for employment in the industries. Moreover, while employee key badges generate income, so does patient registries such as Colorado’s one patient registry fee of $15 for one year or Illinois’ three more expensive options: one year for $100, two years for $200, or three years for $250.

While revenue is a primary function of sales, there are other functions impacted by the cannabis industries, such as ancillary small business development. Patrick Rea, the Co-Founder and CEO of CanopyBoulder, a business accelerator program and venture fund specifically for the cannabis industries, reports that his investment organization funds and mentors startups in the technology, security, and media sectors for innovative new products and services. Advancements in technology typically relate to tracking or sustainability, security improvements relate to safe “cash stash” storage, and the media is consistently participating in promotional events, such as investor forums and trade fairs. Lindsay Blackard, a key-badge manager at Denver’s LODO Wellness Center, says that on an individual scale, dispensaries will create partnerships with small businesses to provide their products or contact information to customers and patients through designated spaces in waiting or display rooms to place promotional materials or glass pieces for sale. Linn also stated that Phoenix Botanical contributes $300 a month to Champaign’s Chamber of Commerce in support of surrounding businesses.

Another economic function impacted by the industries is that of the employment market, which a New Frontier Data study projected would experience an large increase in cannabis-related jobs eventually totaling 283,422 positions nationally by 2020. This estimate is comprised of 198,195 direct positions, 45,590 indirect positions, and 39,636 induced positions. In 2016, Marijuana Business Daily estimated the total employment in the U.S. Cannabis Industry at 100,000-150,000 workers, with 58,000-88,000 workers in “plant-touching” positions and 42,000-66,000 in ancillary services. Of the plant-touching positions, 37,000-52,000 workers were employed in dispensaries, 15,000-27,000 were wholesale cultivators, 5,500-8,000 were infused product makers, and 990-1,300 were employed in testing labs. These estimates will increase significantly in 2017 and 2018 as more states are legalizing some form of the industry every year. The model for the 2020 forecasting was generated utilizing an analysis of Colorado’s 2015 marijuana market, completed by the Marijuana Policy Group (MPG). MPG’s analysis determined that the recreational legalization of marijuana in Colorado subsequently created 18,005 full-time equivalent (FTE) jobs in 2015. Among those jobs, 12,591 were employees directly involved with the marijuana business, including 4,407 in retail operations, 2,770 in administration, 2,015 in infused product manufacturing, 1,889 in management, and 1,511 agricultural specialists. Of the direct employees, 35% were in retail operations, 22% in administration, 16% in manufacturing, 15% in management, and 12% in agriculture.
generated by intermediate input purchases made by the cannabis industry, or indirect positions, totaled 2,896 ancillary jobs, including security guards, consultants, legal advisors, construction specialists, commercial real estate agents, etc.\textsuperscript{65} Induced positions, or jobs created by the income spending of marijuana employees, totaled 2,518 jobs.\textsuperscript{66} It is important to note that the job creation estimates could be drastically altered if the rate of state legalization increased or if an accelerated large-scale industrialization of hemp is established.\textsuperscript{67}

Linn highlights employment characteristics on an individual dispensary basis in Illinois as of October 2016. Phoenix Botanical employed three full-time employees and six part-time employees, spending $20,000-$24,000 per month in direct labor, $10,000-$12,000 per group. While full-time employees received benefits, part-time employees did not. Phoenix Botanical also indirectly employed two security guards, receiving a total of $3,250 for monthly income. As for other indirect employment positions, Phoenix Botanical contracted WEFT Radio for underwriting services at $3,000 annually and tech services monthly at $2,000-$3,000. Induced employment came from these employees using their income to purchase childcare services, medical services, utility services, etc.\textsuperscript{68}

Economic Development is a planning area that currently faces a few challenges, such as the persistent black market, the occurrence of monopolies, and the practice of local communities imposing high fees. Rowland conveys that it is difficult to prevent the presence of the black market in Colorado due to the fact that the industry is illegal in other states and as long as consumers in those states are willing to pay more than the consumers in Colorado, then there will be a market and someone will deliver to that market. There have been instances of ranging severity from small unlicensed home and selling on Craigslist operations to massive organized crime sending full airplane cargoes out of the state. Rowland also shares that it is difficult to prevent monopolies in such areas as industrial real estate, because the marijuana industry in Colorado has already begun to consolidate into fewer large-scale companies and will continue to do so into the future.\textsuperscript{69}

In addition to Boys agreeing that the medical marijuana industry in Illinois is a concentrated monopoly within the state due to the regulated economy of a set number of establishments and limited number of acceptable businesses, he also conveys an unforeseen obstacle at the local level. It was expected that the occasional community would enact policies to hinder the establishment of any marijuana-related businesses in their borders. However, Illinois marijuana business owners faced concerns of qualifying communities, primarily in the Chicago area, choosing to impose high licensing or permitting fees in an effort to exploit these businesses. This enticed several legal battles as developers began to sue communities that they felt were exploitive. Other developers that were given the opportunity, due to their multiple successful applications, to reassess any changes to communities, had the option to decide against such exploitive areas. Despite these challenges, many cannabis-related business owners continue to attempt to plan five to ten years in the future and are hopeful for state recreational legalization.\textsuperscript{70}

“Entrepreneurs and business owners from other states, particularly the state of Washington, came [to Illinois] and said they [had] a business model that they wanted to roll out here [in Illinois]. They were all competing [for their] interest in a new market. That opportunity doesn’t happen often.”

-Brandon Boys, Urbana Economic Development Manager
Early Development Planning Areas

Community Development

This already complex planning area is even more so when impacted by legalization due to a basis of historical disparities and a subsequent inequality in access to public safety, higher income, and education. The implementation of the marijuana industries is not only about generating new revenue, but also about putting in place measures that constantly evolve to keep everyone, consumers and non-consumers alike, safe and comfortable in their living environments. Although the modern-day concept of illegality of cannabis markets began in the 1970s, the concept of using marijuana as a tool of prosecution and oppression has existed since the early 1900s with racial-based taxation enforcement, which eventually lead to a racial-based crime concern. However in 1945, New York City Mayor Fiorello H. LaGuardia appointed a committee to study the effects of marijuana and they released the LaGuardia Report which stated that the act of smoking marijuana did not result in addiction nor was it a determining factor in the act of committing major crimes. The Boggs Act of 1952 and the Narcotics Control Act of 1956 not only set harsher financial penalties for the possession of marijuana up to $20,000, but it also set mandatory prison sentences for drug-related offenses. These acts of enforcement set the groundwork for the previously mentioned 1980s Drug War, which eventually lead to a staggering total of 2,224,400 Americans incarcerated in 2014 in federal, state, and local prisons and jails for drug law violations. Even though Hispanic and Black groups use and sell drugs at similar rates as whites, these two groups comprise 57% of the people incarcerated in state prisons. According to Boys, “There is a deep and growing recognition of the social justice implications and the disproportionate impact on communities of color and poor people.” This recognition has resulted in twenty states decriminalizing marijuana by eliminating penalties for possession of small amounts for personal use and subsequently in 2015, there were 1.5 million Americans arrested for drug law violations and only 643,121 of these arrests were for marijuana law violations.

Besides decriminalization, several policies and initiatives across the nation and in a variety of state and local scenarios, have been enacted to address marijuana-related disparities, whether they be racial, income-based, sexist, or by some other social injustice. These progressive actions have appeared in zoning restrictions, economic decisions, store-level rules, and community participation. Of the policies implemented at the local government level, the focus is on regulating zoning and economic development in such a way that impacted communities are relieved of negative effects, as seen in Denver. Specifically, Golich brings up a six-month moratorium for the recreational marijuana industry to rectify an odor control issue, which places a 1,000-foot proximity requirement on industrially-zoned grow locations, or plant husbandry, near low-income residential areas. In terms of this same issue and economic development, Rowland conveys that recently the Denver City Council voted into place a cap on the total number of grow facilities in the city limits, effectively not only slowing down the growing number of applications, but also allowing for greater spatial distribution and more rental locations to get marijuana-related grow facilities farther from residential areas.

Another issue that has arisen in cities due to recreational legalization, is that of a rising number of homeless. While the U.S. Census Bureau provides data conveying that Colorado’s population increased by 100,708 between 2014 and 2015, nonprofit shelter providers in Denver have felt this impact as citizens moved to the city in search of jobs that many were unable to obtain due to background checks and limited availability of badges, and then a shortage in affordable housing grows as well. Enforcement of the marijuana laws on homeless are also a source of turmoil, as there is no way to follow up and ensure that they are paying their citations. As a means to rectify the homelessness situation in Denver, the city expended...
$750,000 of marijuana funding in 2016 into providing affordable housing. However, the city’s marijuana funding is only 2% of the revenue for the city, and the issue of affordable housing needs to have a city-wide holistic approach. While Denver had in place a homeless action plan prior to legalization, significant increases in the homeless population have been noted and contributed by planning professionals to the state’s recreational legalization.

In terms of public safety, these regulations come from both the city and from individual dispensaries themselves. According to Daniel Glenn, Denver Consulting Group partner and general manager of DANK Dispensaries, those in the industries do not want what they are producing and distributing to end up in the wrong hands any more than the government and that many within the industries are passionate about what they do and want to continue providing that service in a correct method. Not only do marijuana industry employees understand their impact on surrounding neighborhoods, but they also typically develop positive relationships with local police departments. Michael Louge, store manager of Northern Lights in a Denver suburb, demonstrates that his dispensary has developed a positive and professional relationship with the Edgewater Police Department in providing a safe environment for not only his direct employees, but also for their customers. It can be assumed that police and fire rescue departments would take steps in public safety, but this additional safety recognition from those directly employed by the industries, has created an environment in which of Denver crime rates, only 270 (0.42%) marijuana-related crimes and only 192 (0.30%) marijuana-industry related crimes were committed in 2015.

In addition to safety policies, these industry-related employees give back to their communities in efforts to create long-lasting relationships and repair any damages induced by legalization. Glenn provides a highlight into DANK’s main purpose: to educate the customers as much as possible so that they walk out feeling as if they have had a good experience and have had all their questions answered. This purpose is reflected in many other dispensaries, such as Louge’s understanding that his employment industry’s tax impact has allowed his local first responders to have the equipment they need, as well as a faster completion time for the construction of a new community center years ahead of schedule. Even on a much smaller scale, Valden Vandermark, store manager of Ajoya in Louisville, Colorado, conveys that his employees are involved in local community programs, such as maintaining a booth once a week at the street fair and cleaning highways as a part of the Adopt-a-Highway program.

One area of social justice that the cannabis industries have an advantage in, is that of gender equality. According to Marijuana Business Daily, in 2014, women held 36% of the executive-level positions in the cannabis industries, when on average women only hold 22% of all U.S. business executive-level positions. Women also comprise 63% of high-level positions in testing labs, 48% of key decision-making positions in infusing products and processing manufacturing, and 38% of leadership roles on the retail side. These results indicate “that women have more opportunities to climb the ladder in the marijuana industry and are making quicker progress toward those goals than females in all other industries as a whole in the U.S.” This is potentially due to the industries being so new that women are able to get in on the ground floor of these businesses and grow with them. It seems that the cannabis industries have matured to a certain degree and have left behind some of the practices that alienated women as professionals and consumers. That being said, the low-income customer service positions remain heavily gendered.

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1 Marijuana-Related Crime definition: crimes reported to the Denver Police Department that, upon review, have a clear connection or relation to marijuana. Crimes that have an incidental relation to marijuana are not included.
2 Marijuana Industry-Related Crime definition: the subset of marijuana-related crime where licensed marijuana businesses were either the victim or the perpetrator of a crime.
There are several other initiatives furthering the destigmatization of the cannabis industries at the city level. Rowland relays that a portion of the cannabis-industry city revenue contributes to a diversion program for kids who have already come into contact with cannabis and may have already been within the criminal justice system.\textsuperscript{91} This type of initiative could be altered in many ways to cater to the different criminal systems across the nation, for kids and adults, to rectify previous marijuana-related crimes. Another area of further research in community impacts, is the types of jobs created by the industries and their lower education requirements, such as sales clerks, data-entry, trimmers, machine operators.\textsuperscript{92} Exploring deeper into these equality initiatives, and by continuing to respond and develop new regulations, communities, large and small, can begin rectifying history’s social injustices impacted by legalization.

\textbf{“Just because you are in an industrial zone, doesn’t mean you aren’t going to impact nearby areas.”}

\textbf{- Dan Rowland, Denver Excise and Licenses Department}

\textit{Real Estate Development}

Controversial to begin with, this planning area requires a delicate balance between making a profitable investment and impacting surrounding communities positively. Not only are new facilities being constructed by contractor companies, but a large number of industrial facilities are being repurposed to serve the cannabis industries. Despite creating a new segment of the industrial real estate market, many executives raise concern that a new real estate bubble may be formulating. In Denver alone, 36\% of new industrial tenants in 2009-2014 were licensed as marijuana businesses and in 2015 approximately 3\% of the city’s warehouse space, or nearly four million square feet of industrial space, was being utilized for licensed cultivation. In addition to this growth in occupancy, the warehouse vacancy rate in the city fell from 7.5\% in 2010 to 3.7\% in 2015. This marijuana industry-related development is “reshaping once-blighted neighborhoods and sending property values soaring”.\textsuperscript{93}

Various forms of real estate businesses have begun to form that cater specifically to the marijuana industries. One such business in Denver, Your Green Contractor, got its start in the marijuana industry when it was contracted to expand a grow facility in 2011. The company is now pursued for its expertise “in building out, remodeling, and upgrading custom marijuana-infused-product kitchens, extraction facilities, dispensaries, greenhouses, and warehouses”. Besides physically constructing cannabis businesses, Your Green Contractor also provides consultation on the various elements such as permitting processes, upgrading primary power supplies, building relationships with local public safety authorities to ensure code compliance and streamlined processes, roof systems and structure, water lines and drainage, warranty issues, and accessibility compliance with the American Disability Act (ADA). Because the contracting company does not physically handle the marijuana products, they have more ways of handling financing from clients and they are able to outsource their services across state lines.\textsuperscript{94}

When assessing the impact of rental rates on an individual dispensary, it is key to understand that due to the risky status of investing in the marijuana industries, landlords and property owners can charge premium rates for basic properties.\textsuperscript{95} Higher rental rates are an obstacle for marijuana-related businesses to find affordable locations. Linn conveys that Phoenix Botanical’s current 2,000 square foot location was marketed at $12 per square foot, yet upon hearing the business type, the property owners raised the rate to $18 per square feet, placing monthly rent at nearly $36,000 per month.\textsuperscript{96} While Phoenix Botanical only experienced about a 33\% increase, some Denver neighborhoods saw the average asking lease price for warehouse spaces jump by more than 50\% from 2010 to 2015, effectively taking a $2.5 million 10-acre greenhouse parcel and increasing the value to $5 million.\textsuperscript{97} Once a space is acquired and under contract,
any cannabis-related business may have to invest upwards of $5 million to renovate for compliance, which could include gutting; installing HVAC, lighting, and insulation; reconfiguring the floor plan; roof repair; mold removal; etc.98

These high-cost expenditures produce obstacles for developers that have the potential to result in real estate monopolies. According to Boys, applications approved for retail operations at this point will have already spent $250,000 or more. Another industry barrier leading to a monopoly in Illinois, is that the more financing a company is willing to invest in their operations, the more points they will earn towards application approval, which will give that company a higher chance of keeping their space should more than one be approved for a district. Such was the case with NuMed and Phoenix Botanical, as originally both had been approved for Urbana locations; however, after review the state agency declared that both dispensaries could not be located in such close proximity. Since NuMed had decided to invest more in its biomedical research aspects, the company earned more points in their review, and thus were allowed to keep their space, forcing Phoenix Botanical to relocate to Champaign. This scenario has occurred across the state as some marijuana companies are approved for multiple spaces.99

“There was a high degree of competition [for dispensaries in Urbana]. A high level of pressure from a buyer’s market for selling. This caused infighting between brokers and investors.”

-Brandon Boys, Urbana Economic Development Manager

**Undeveloped Planning Areas**

*Sustainability*

A rather tricky planning area to implement, sustainability standards are in constant fluctuation and thus a challenge to regulate and enforce. While some sustainability concerns are easily dismissible, such as THC contaminated water in the eastern Colorado city of Hugo, other concerns are more prevalent, such as energy consumption, water conservation, and waste management. Although there was a concern early on that plant material would get washed into the waste water systems of grow facilities, no problems have arisen due to product control restrictions and additionally, the cap will limit any further concerns. Another original concern that has seen minimal issues is that of water conservation, as many of the entities in the industries have their own techniques for conserving water on site, such as aeroponics, the Israeli Drop, hydroponics.100

As previously mentioned, indoor cannabis grow facilities consume an extreme amount of energy and Rowland points out that of the 1% increase in the city’s 2014-2015 electrical use due to the marijuana industry, half of that is due to the regulations requiring grows to operate entirely indoors.101 Denver elected official Scott Prisco finds it bothersome that many grow facilities are using non-energy efficient, high pressure sodium light fixtures, rather than the more efficient LED, simply because the initial cost is lower and there is a higher yield of product from the plant in a shorter time period.102 Prisco also points out that usually if a business were to exchange incandescent lighting for LED, they would be able to obtain a loan; however, due to the industry being federally illegal, marijuana businesses cannot take advantage of this type of financing.103 Furthermore, there have been advancements in LED programs where 24-hour coloration changes at certain times of night allow for advancements in growth; although, these fixtures are significantly more expensive.104 Rowland believes that “solving sustainability issues is in the best interest of everyone, the industries themselves will benefit in money savings that comes from better lighting
solutions”. There are other lighting options that can be further explored, such as the use of solar tubes and channeling natural light through small specifically designed holes.

Referring back to the earlier mentioned odor issues from cannabis grow facilities, sustainability policies should also address air pollution concerns. Golich expressed that previously odor control was placed within the facilities, but this practice was stopped due to a lack of a regulatory mandate. Recently, the Denver Environmental Health Department moved forward with regulations to acquire further odor control, not only for the grow facilities, but also for the extraction manufacturing facilities. Under the regulation, these entities would be required to submit odor assessments. All new facilities would have to comply, as well as retrofitting existing facilities, by installing carbon scrubbers to prevent odor from leaving the structures. Golich believes this will offset the significant impacts to Denver’s communities and neighborhoods that are in close proximity to grow facilities.

Rowland believes that the best thing for the city government to do when attempting to regulate sustainability is to get sustainability experts to a conversation table and then get out of the way. This is because by the time a mandate was released for a specific type of lightbulb requirement or water conservation method, it would already be outdated. Denver has convened stakeholder working groups consisting of sustainability experts in government and in the industry who are already working on best sustainable practices. These types of groups can provide best practice guides and set up informational events to spread awareness of new products and techniques. This strategy of having a group of experts outside the government set the guidelines, allows for industry-driven competition.

Not only do sustainability policies need to reflect the construction and operation of marijuana-related businesses, but they also need to provide a foundation for mass production of hemp. During the 17th and 18th centuries, the American colonies were encouraged by the ruling government of the time to grow and harvest hemp for the production of clothing, rope, and sails. The colonies of Maryland, Pennsylvania, and Virginia allowed hemp to be exchanged as legal tender and the Virginia Assembly passed legislation in 1619 requiring every Virginian farmer to produce hemp. When hemp’s domestic production began to decrease with less industrial use due to new imports after the Civil War, marijuana production increased as the plant became a key ingredient in medications sold in public pharmacies. In 1906, the Pure Food and Drug Act required any over-the-counter medicines that contained cannabis to properly indicate as such on the label. Furthermore, when hemp imports were cut short by World War II in the early 1940s, the U.S. Department of Agriculture introduced its “Hemp for Victory” program which produced 375,000 acres by granting free seeds and draft deferments to eligible citizens who would remain and grow the crops.

When the entire cannabis species, including industrial hemp, was classified as a Schedule I substance in the 1970 Controlled Substances Act, hemp farming in America became illegal, which lead to the rise in the production of synthetic fibers. The U.S. began importing raw hemp from Canada, Europe, and China, resulting in the nation’s domestic farmers being excluded from a rather sustainable and profitable opportunity. “Hemp not only nets up to 2.5-times the value of U.S. corn and soy, it also has wide-reach environmental benefits including soil remediation, prolific pollen production for bees and beneficial insects, and no synthetic pesticides nor fertilizers [are] necessary to grow.” In 2014, three states, Colorado, Kentucky, and Vermont, began growing hemp under the Legitimacy of Industrial Hemp Research section of the 2014 Federal Farm Bill. Upon the passing of several amendments prohibiting interference from the DEA and DOJ, in 2016, 9,650 acres of hemp were harvested in nearly thirty-two American states.

Whether the policies are to regulate the actual production, or whether they are to regulate the research and improvement in agricultural practices, there is work to be done in bringing hemp to mainstream retail. One such technology advancement is known as “intelligent agriculture”, or rather the use of
hyperspectural imaging to perform remote sensing of a plant to discover any sickness, and to measure photosynthesis to discover when is the best time to harvest. With the amount of possibilities for use of industrial hemp, in terms of research development, best practices, fabrics, ropes, health products, etc., it is necessary for federal and state policies to begin reflecting the changes in the public’s acceptance of the cannabis plant.

“The best thing for the city government to do in terms of sustainability, is to get experts to the discussion table and then get out of the way.”

-Dan Rowland, Denver Excise and Licenses Department

Urban Design

An overlooked planning area that could alleviate many of the concerns raised from the general public and officials, urban design has the potential to break the connotation of the “back alley drug deal” environment that has become inherent with cannabis. There is more to placing marijuana-related businesses in the correct location within a community and ensuring that they are compliant with regulations, such as creating spatial experiences in line with doctors’ offices, retail spaces, and pharmacies. Marijuana-related facilities, and dispensaries in particular, should be properly “designed and approved by the architectural industry, because the built environment needs to have the assurance that life safety was taken into account”. While Denver has taken a small step towards regulating design, such that grow facilities are required to be designed by an architectural/engineering firm in order to obtain construction permits, it is not common for dispensaries to be designed by a licensed firm.

Prisco also relays that a large portion of the cannabis industries in Denver are “for the most part young entrepreneurs that aren’t knowledgeable about construction and permitting...they don’t always understand safety issues”. For example, a client was unaware that there needed to be a clear aisle of egress for emergencies, yet because they were attempting to maximize their number of plants, they had blocked off any means of escape. It is also common for inspectors to find businesses storing supplies and inventory in their truss systems, effectively blocking off sprinkler heads. Brewer stated that if the overseeing city departments were lucky, hopeful business owners would come to permitting sessions with an attorney or architect for counseling. Without these professionals in tow, Carlson explains that many business owners are surprised to discover that obtaining a zoning permit only kickstarts the approval process; they must also obtain construction permits from various departments utilizing construction documents that demonstrate that the structure will comply with building codes. There were a several instances where grow facilities started growing plants based on a license and zoning approval, until an inspector, or the fire department, gets a call because of dangerous electrical conditions. “They think it is something they just get handed, they don’t understand that they have to meet certain requirements.”

Ajoya, a dispensary in the Denver suburb of Lakewood, was designed by the architecture firm Roth Sheppard Architects. Tyler Joseph, a licensed architect that worked on the project, conveys that those involved in the design “believed they could elevate the perception and experience of marijuana”. Ajoya’s owners preferred the idea of invisible security, or rather the presence of security in an unobtrusive way, instead of bars, glass windows with openings, or locked doors. The owners also came to the architecture firm with their concept of four key experiences that were central to their brand and were meant to be specific to the customers’ desired mood and activity, so much so that everything in their product lines were fit to this developed concept. Joseph says that in order for the design to achieve these desired experiences, lighting was pivotal in order to create dramatic pools of light in different areas of the shop. Also to be
included in the design was a space within the store for customer education, so that budtenders would be able to educate the community on the benefits of marijuana and hopefully have the opportunity to expand their clientele. A final important aspect of Ajoya’s design concept was branding the shop as a professional, high-quality establishment, which was achieved through a white, glossy backdrop throughout the space, emphasizing cleanliness and contrasting the colorful branding of Ajoya’s products.  

All too often, dispensaries stand out in cityscapes due to limited branding or bars on the openings. The purpose behind utilizing licensed design professionals is not just to create a safe structure, but also to create a space that welcomes customers and fits aesthetically with the surrounding environment. In the end, cannabis-related businesses should appear no different than any other public businesses, unless standing out is the goal, and then it can still stand out and look inviting. Figure 6 portrays a potential design for a city infill site with the standard street view of a pharmacy or doctor’s office by blending in with the surrounding businesses. Figure 7 highlights the possible floor plan of such an infill site that follows the typical security measures of marijuana dispensaries with segregated spaces for controlled circulation. Figure 8 demonstrates the potential street view of a standalone structure with a façade that stands out and yet only hints at what is within. Figure 9 highlights the potential floor plan of an all-encompassing standalone structure comprising of the many marijuana functions and creating an open concept.
Figure 7 – Ground Floor Plan of Possible Infill Design

Figure 8 – Street View of Possible Standalone Design
There are many ways to utilize professional design services to not only comply with necessary safety regulations, but also to self-brand a company. Zach Crane, a budtender at MMJ America, believes that the retail side should be friendly and open, and that the purpose of the establishment should be upfront and transparency is obvious.116 There is a competitive market for dispensaries and the built environment can make or break the popularity of a shop when compared to competitors. A well-thought out and professionally designed space is well worth the atmosphere that is generated.

“We tried to be very thoughtful about the customer experience and we wanted to create a retail environment where customers felt comfortable, were encouraged to linger, and ultimately leave with what they were looking for after a very pleasant, unique experience.”

– Tyler Joseph, AIA, Roth Sheppard Architects

**Future Policy Actions**

**Federal Government**

Many of the prevalent concerns with the implementation of the cannabis industries across the nation, can be resolved by federal legalization. This action by the federal government would open the door for legislation regarding healthcare, employment protection, veteran affairs, financing rights, sustainability standards, etc. In order for cannabis to be legalized in its many useful forms, it needs to be rescheduled by the DEA as a Schedule 1 controlled substance and placed back under the regulation of the FDA, a similar standing to alcohol. A reschedule would allow more thorough research to be completed on cannabis, both medically and sustainably. Furthermore, this action would give state and local governments the opportunity to cater the industries to their needs and control any subsequent impact.

From a social justice standpoint, federal legalization would give the industries footing in the healthcare system in terms of doctor recommendations, health insurance, streamlined registries, and fast-tracked approval for the addition of medical conditions. Previously, several state medical marijuana
programs in the nation required “prescriptions” from doctors that put the doctors at great risk for malpractice suits and made the entire medical industry inaccessible for a very large portion of the population, such as those that could not afford to create a long-standing relationship with a medical professional, and those who were not in close proximity to a doctor willing to chance their license. Overtime, several medical states, including Illinois, have changed the requirement to a “recommendation”, which encouraged more doctors to participate and thus increased accessibility somewhat. Federal legalization would also garner support for medical cannabis to be covered by medical insurance companies, also increasing accessibility for those citizens who genuinely need the product. Legalization also has the potential to create a national registry, allowing medical patients greater access in situations where the patient has moved to or is visiting another state in which a medical marijuana market exists. Finally, another potential with federal legalization in terms of healthcare, is a standardized list of medical conditions protecting patients and doctors from independent states determining what they deem illnesses.

Employment protection is also a concern that could potentially be determined further by federal legalization. Currently, registered medical patients are not protected at their jobs from random drug testing or hiring processes. Additionally, some professions do not allow access to medical marijuana, despite qualifying conditions. For example, those serving in the armed forces with Post Traumatic Stress Disorder from field combat or severe depression, can be prescribed damaging synthetic pharmaceutical drugs, but not medical cannabis. Veteran Affairs is also in need of protection, as currently state-run VA medical facilities will not issue medical cannabis recommendations, even to those veterans suffering from significant illnesses and no longer interact with heavy machinery or firearms. Professional athletes, who occasionally suffer from chronic pain due to sports injuries or concussion, cannot get prescriptions or recommendations for medical cannabis. Government workers and public school teachers also tend to not feel protected in employment, should they pursue medical cannabis due to a qualifying condition. Adding legality to the industries, with federal legalization, might not outright protect these jobs, but it will lead to greater education in employers in which they will understand the medical properties, rather than the psychoactive properties, of the plant and thus lower their suspicion on consumers’ impaired judgement.

Financing is a necessary component for survival of any industry in the economy and without legalization, the cannabis industries do not have access to proper financing. Not only can marijuana-related businesses currently not obtain loans of any kind for construction or mortgage, but they also cannot use debit or credit transactions. A cash only business creates a safety hazard, that has been accommodated so far by safety regulations, but which could be mitigated with the permitting of debit/credit transactions. Additionally, marijuana-related businesses cannot qualify for federal grant programs for actions such as, historic preservation or sustainable improvements. Financing rights also makes it possible for patients and consumers to have more payment options, thus making the industries more accessible to those who need it.

Last, but not least, federal legalization will allow national environmental protection agencies to set a baseline for sustainable standards required for licensing and permitting in an effort to control the negative impacts of air and waste pollution. As previously mentioned these standards would include energy consumption, water conservation, and waste management. While federal legalization will not solve all of the concerns that come with making cannabis mainstream, it will set the stage for states to have a foundation to legitimately establish and control the industries within that borders.
“There is so much more research that needs to be done, that can’t be done because funding isn’t available federally. People have so many speculations and questions and they can’t get answers until funding can be achieved for further research.”

-Carrie Griffo, Imaging Science, Rochester Institute of Technology

State Government

States have the benefit of utilizing detailed regulations to promote the growth of the cannabis industries within their state lines as they see fit. While the federal government sets the foundation for standardized regulation and the local governments control the impact on a societal and detailed economic scale, the state governments really make or break the success of medical or recreational cannabis. State level regulations will foster growth, or smother the industry with restrictions before it can even get started. Boys highlights Illinois Governor Bruce Rauner’s attitude towards the industry as prohibitive and lackluster. The original proximity requirements were too strict, requiring amending to allow medical marijuana-related businesses to get zoning permits. Illinois also has a narrow list of qualifying medical conditions, which greatly narrows the market, and Rauner continuously turns down proposals for the addition of new medical conditions. These state level actions by the Rauner administration rose questions from marijuana-related business owners as to whether the new market would succeed in the state and if their investments would still be worth the effort. The market uncertainty caused several of the approved businesses to stall with construction or renovation until assurances were made by the state. Now that the state’s pilot program has begun to show steady results in revenue and acceptance, it is expected that the product will become easier for Illinoisans to access medical marijuana if they have a qualifying condition.

In addition to less restrictive proximities and rejections of medical conditions, Danni Strite conveys the need for the industries to have labor unions to protect the workers. The dispensary budtender states that there is significant employment turnover due to controversial hiring and firing practices. As workers of the industries become victims to nonexistent federal employment regulations, the industries also cause a resource bubble that raises rental rates and the cost of living. In terms of making the industries prevail, unions will promote job security that will attract invested workers desiring positions with long-term benefits and protection. The work that individual states put into implementing their cannabis markets and protecting industry workers and consumers, the greater the possibility that the individual states will be granted “a seat at the table for [the] discussion of national legalization”.

“Given the context of what the state handed us, we were really only in a position to react to that, and help those that were interested in doing business in the state, navigate that.”

-Brandon Boys, Urbana Economic Development Manager

Local Government

This level of government’s treatment of the industries is how the majority of consumers will interact with the legalized product. How these small government entities regulate the industries, will determine how much revenue can be gained at the local level and what types of communities will be impacted the most. City councils, commissions, planning and public safety departments, nonprofit organizations, and environmental groups will propose an array of detailed regulations specifically catered to their territorial limits and it is the duty of these entities to lead the general public towards the destigmatization of the cannabis industries. Thoroughly communicating to citizens what legalization entails and what they can or cannot do with the product, as well as debunking any taboos, stereotypes, or theories (i.e. gateway drug)
will be beneficial in many ways. Committing to educating citizens about the benefits of implementing the industries will foster a greater rate of acceptance and success.

“The debate about is pot good, is it bad, should it be legal, should it be illegal, it’s almost irrelevant at this point... Two-thirds of Denver voters said Yes, if you look at our Denver voting history on marijuana initiatives, we always say Yes... As a resident of this city, and someone who loves this city, I’m just more interested in us doing this well and getting it right. There is no question that the world is watching us and it could be a giant catastrophe if it went the wrong way. People are always going to use our experience and spin the studies and spin the anecdotes in any way that suits their agenda, whether it’s good or bad. We don’t care. We’re simply focused on...[Denver’s] amazing quality of life.... We’re not going to let the quality of life for Denver residents be negatively impacted by this, actually hopefully it will be positively impacted by this. But whether you are someone who smokes pot, or buys pot, or doesn’t, it shouldn’t change your experience with the city of Denver.”

– Dan Rowland, Denver Excise & Licenses Department
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