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MARIJUANA IMPACT REPORT

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Northwest High Intensity
Drug Trafficking Area

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Executive Summary

The Northwest High Intensity Drug Trafficking Area (NW HIDTA) is reporting on the impacts of the legalization of marijuana in Washington State. The purposes of this second volume are to discuss the regulatory functions attendant to statute and policy; to present data on the impacts of the industry; and to depict where the state stands after two years of commercialization.

Washington State first addressed the legal status of marijuana nearly 20 years ago, followed by a series of bills and voter Initiatives to date including:

- 1998: Medical Use of Marijuana Act (Initiative 692)
- 2007: Concerning the Use of Medical Marijuana (House Bill 6032)
- 2009: Concerning Medical Marijuana (Senate Bill 5798)
- 2011: Concerning the Medical Use of Cannabis (Senate Bill 5073)
- 2012: Legalization of Recreational Marijuana (Initiative 502)
- 2014: Concerning Marijuana Processing and Retail Licenses (House Bill 2304)
- 2015: Cannabis Patient Protection Act (Senate Bill 5052)
- 2015: Comprehensive Marijuana Market Reform (House Bill 2136)
- 2015: State Agreement with Indian Tribes (House Bill 2000)
- 2017: Addressing Provisions Concerning Marijuana with Respect to Research Licenses, Local Authority Notifications, the Retail Licensing Application Process, Processor Wholesale Events, and Jurisdictional Requirements (Senate Bill 5131)

The data that has been collected and analyzed include an overview of Washington State Liquor and Cannabis Board (LCB) processes and regulations. The LCB is the regulatory authority responsible for all licensed marijuana businesses including producers, processors and retailers. Other data and activities subject to Board authority will be examined including marijuana product testing, the marketing associated with businesses and products, and product transportation.

With legalization, marijuana policy shifted from addressing a criminal offense to a civil enforcement priority. The enforcement data regarding licensed marijuana businesses will be examined for violations issued and penalties imposed.

Impacts on youth and adults will also be analyzed. This includes examining consumption, rates of abuse, and treatment admission rates for marijuana abuse and addiction. For youth, available data regarding the effects on schools will be included.

With legalization and commercialization increasing the availability of marijuana across the state, a nexus with criminal activity will be noted. Major crime categories including impaired driving, diversion, and THC extraction lab explosions are an increasing concern in the state. When also considering other marijuana-related crimes such as robberies, burglaries, and assaults, there is sufficient data to associate the incidence of specific criminal acts with the availability of recreational marijuana.

As the licensed businesses comprising the recreational marijuana market report the nature and volume of all sales, taxes, and revenues that have been generated, those data will be reported including historical and current data regarding the existing medical marijuana market.

Finally, a brief overview of ongoing legislative changes will be provided. This includes regulations, modifications, and new laws proposed for both the recreational and medical marijuana markets.

Three stages delineating the developing status of recreational marijuana will be discussed: legalization, commercialization, and consolidation. Legalization commenced in November 2012 when the initiative legalizing marijuana was passed. Commercialization commenced when recreational marijuana businesses began operating and selling marijuana across the state in July 2014. The purview of recreational stores changed again in July 2016 when Senate Bill 5052 eliminated all medical marijuana dispensaries. Medical marijuana products are now available through recreational stores with medical endorsements.

This is the second *Northwest HIDTA Marijuana Impact Report* providing data specific to the State of Washington. This report has been organized in order to detail the underpinning of legalization and identify and discuss challenges, changes, and impacts. In addition, it will examine the unanticipated and unresolved issues that continue and will offer projections for the next year. The goal of the *Report* is to gather substantiated and current information and data to accurately examine the marijuana industry in Washington State.

The *Report* entails ten sections providing in-depth information on the specified topic followed by a conclusion. The data sections include:

- **Section One: Legal Overview**
 - Washington State History with Marijuana
- **Section Two: Regulatory Overview**
 - Recreational marijuana consumers may possess:
 - 1 ounce of useable marijuana, 7 grams of marijuana concentrate, 16 ounces of infused-product in solid form, and 72 ounces of infused product in liquid form; no home cultivation is permitted;
 - Medical marijuana qualified patients with a recognition card may possess:
 - 3 ounces of useable marijuana, 21 grams of marijuana concentrate, 48 ounces of infused-product in solid form, 216 ounces of infused product in liquid form, a minimum of 6 plants for home cultivation and 8 ounces of useable marijuana derived from those plants;
 - Medical marijuana qualified patients without a recognition card may possess:
 - 1 ounce of useable marijuana, 7 grams of marijuana concentrate, 16 ounces of infused-product in solid form, 72 ounces of infused product in liquid form, a minimum of 4 plants for home cultivation and 6 ounces of useable marijuana derived from those plants;
 - 222 additional marijuana retail locations have been added to the industry to offset the elimination of unregulated medical marijuana dispensaries following the passage of Senate Bill 5052;
 - As of February 2017: 2,697 licenses have been issued – 1,121 producers, 1,106 processors, 470 retailers representing 1,674 individual businesses;

- 226,513 pounds (3,624,208 ounces) were produced during the second year of recreational commercialization;
- The average potency of marijuana flower available at one Seattle-based retailer during the month of July 2016 was 21.62% - for marijuana concentrates the average potency was 71.71%;
- 70% of the marijuana-infused products available in the state fall within the “baked goods” or “desserts category”;
- 93.6% of the public safety violations received by recreational licensees involved minors.
- **Section Three: Youth Impacts**
 - One in five 10th grade students and one in four 12th grade students reported riding with a driver who had used marijuana;
 - One in six (17%) of 12th grade students admitted to driving a vehicle within three hours of consuming marijuana – and nearly one in ten (9%) 10th grade students;
 - During the 2014-2015 school year, 60% of statewide student expulsions and 49% of suspensions related to substance abuse specifically involved marijuana;
 - In 2016, 73% of Poison Center calls regarding children under five years of age specifically referred to children one to three years old;
 - In 2014, youth under the age of twenty accounted for 40% of statewide Poison Center calls;
 - From 2014 to 2016, calls received by the Poison Center regarding marijuana-infused products increased 36.11% and calls involving marijuana oil increased 105%;
 - 71% of all statewide treatment admissions for youth during the first quarter of 2016 were for marijuana.
- **Section Four: Adult Impacts**
 - 24% of young adults (18-25 years old) consumed marijuana at least once during the last month during 2014 – 15% used at least once a week and 5% were daily users;
 - 45% of young adults (18-20 years old) perceive marijuana as easy to obtain;
 - Washington State young adults’ (18-25 years old) past year marijuana use was 4% higher than the national average in 2014-2015 – the rate for Washington adults (26+ years old) was almost 5% higher;
 - Washington State young adults’ (18-25 years old) past month marijuana use was over 2% higher than the national average in 2014-2015 – the rate for Washington adults (26+ years old) was over 3% higher;
 - Marijuana accounted for 10% of all treatment admissions for adults during the first quarter of 2016.
- **Section Five: Impaired Driving**
 - 38% of marijuana DUI cases tested by the Washington State Patrol Toxicology Lab in 2016 were over the legal limit of 5 nanograms per milliliter of blood;

- 33.6% of total DUI cases submitted to the Washington State Patrol Toxicology Lab tested positive for active THC (delta9-THC);
- The prevalence of THC-positive drivers increased significantly from before commercialization in 2014 to 2015 by 1.9% in Yakima County, 9% in Snohomish County, and 17.4% in King County according to the National Highway Traffic Safety Administration;
- The percentage of THC-positive drivers by day increased significantly from 7.8% before commercialization in 2014 to 18.9% in 2015 according to the National Highway Traffic Safety Administration;
- 10% of Washington State drivers involved in a fatal crash from 2010 to 2014 were THC-positive according to the AAA Foundation for Traffic Safety;
- Fatal crash data from the Washington State Traffic Safety Commission noted a statistically significant change in deceased drivers from before commercialization in 2013 (7.8%) to 2014 (12.8) – these drivers were above the 5ng/mL per se limit.
- **Section Six: Diversion**
 - Youth (12-17) accounted for 64.9% of all state marijuana seizures in 2015 as compared to 29.9% in 2010 according to National Incident Based Reporting System (NIBRS) data;
 - Since legalization in 2012, Washington State marijuana has been found to be destined for 38 different states throughout the United States;
 - From legalization to preliminary data gathered in 2017, 8,242.39 kilograms (18,171.35 pounds) have been seized in 733 individual seizure events across 38 states;
 - From 2012 to 2016, 470 pounds of marijuana have been seized on Washington State highways and interstates;
 - Since 2012, 320 pounds of Washington State-origin marijuana have been seized during attempted parcel diversions.
- **Section Seven: Marijuana-Related Crime**
 - 889 THC qualitative cases examined by the Washington State Crime Laboratory were closed – almost all were associated with minors;
 - The Pierce County Sheriff's Office reported a 31% increase in incidents related to the sale and manufacturing of marijuana in 2015 when compared to the four years prior;
 - The Pierce County Sheriff's Office reported a 12% increase in incidents related to the sale and manufacturing of marijuana in 2016 when compared to the four years prior;
 - According to the Western States Information Network (WSIN), 25% of the labs reported in 2016 involved for honey-oil/THC-extraction incidents.
- **Section Eight: Environmental Impacts**
 - An estimated 1% of the total energy use in Washington State is attributed to marijuana growing operations – this equates to powering 2 million homes, a six billion dollar energy bill, and the emission of carbon dioxide by 3 million cars;

- 373,778 marijuana plants found growing illegally on public and private lands were eradicated from 2012 to 2016;
- 60% of the illegal marijuana plants eradicated in 2016 were being cultivated on state land;
- The 58,604 illegal marijuana plants eradicated in 2016 consumed an estimated 43.2 million gallons of water over a full growing season (120-day cycle);
- Over 400 pounds of fertilizers, chemicals, and pesticides were removed from illegal marijuana growing operations in 2016;
- Furan, a neurotoxin that is extremely dangerous to humans, was found in an illegal marijuana growing operation in 2016.
- **Section Nine: The Current Markets**
 - Total Marijuana Sales:
 - Fiscal Year 2015: \$259,785,729
 - Fiscal Year 2016: \$972,729,675
 - Fiscal Year 2017: \$800,590,866* through January 2017
 - Total Excise Taxes Generated:
 - Fiscal Year 2015: \$64,882,333
 - Fiscal Year 2016: \$185,678,650
 - Fiscal Year 2017: \$271,838,049
 - Local Distributions of Generated Excise Taxes:
 - FY 16: \$3,261,496.58 for cities:
 - Vancouver, Tacoma, Seattle Millwood, and Everett received 57% of the total distribution (\$1,863,933.46);
 - FY 17: \$2,738,503.42 for counties:
 - King, Spokane, Snohomish, Whatcom, and Thurston Counties received 74% of the total distribution (\$2,036,416.24)
 - According to the Washington State Department of Financial Institutions, 12 financial institutions are currently serving the marijuana industry in the state;
 - Four Sovereign Indian Nations have entered into the Washington State regulated marijuana industry: the Muckleshoot, Puyallup, Squaxin Island, and Suquamish nations.
- **Section Ten: The Upcoming Markets**
 - Senate Bill 5131
 - Addresses provisions concerning marijuana commerce with respect to research licenses, local authority notifications, the retail licensing application process, processor wholesale events, and jurisdictional requirements.

Section 1: Legal Overview

Introduction

In 1998 Washington State legalized marijuana for medicinal use and subsequently became the second state to legalize marijuana for recreational use in 2012. The emergence of both markets and the restructuring of laws caused major shifts affecting law enforcement agencies, public health institutions, and social expectations. The bills that shaped the marijuana industry within Washington State include:

- 1998: Medical Use of Marijuana Act (Initiative 692)
- 2007: Concerning the Use of Medical Marijuana (House Bill 6032)
- 2009: Concerning Medical Marijuana (Senate Bill 5798)
- 2011: Concerning the Medical Use of Cannabis (Senate Bill 5073)
- 2012: Legalization of Recreational Marijuana (Initiative 502)
- 2014: Concerning Marijuana Processing and Retail Licenses (House Bill 2304)
- 2015: Establishing the Cannabis Patient Protection Act (Senate Bill 5052)
- 2015: Concerning Comprehensive Marijuana Market Reforms to Ensure a Well-Regulated and Taxed Marijuana Market for Washington State (House Bill 2136)
- 2015: Authorizing the Governor to Enter into Agreements with Federally Recognized Indian Tribes in the state of Washington Concerning Marijuana (House Bill 2000)

Washington State’s History with Marijuana

The citizens of Washington State have acceded to the production, trafficking, and particularly the use of marijuana for quite some time. Over the past few decades, the state has actively discussed and adopted numerous policies on how best to regulate both the medical and recreational marijuana markets. This persistent revisiting of state law and administrative provisions has served to keep the state on an unsettled footing and, over the years, at many crossroads.

Medical Marijuana was first enacted in 1998 with the passage of a citizens’ measure, Initiative 692. This initiative included a stipulation identifying physicians as the only healthcare providers who could issue medical marijuana authorizations and allowed patients to possess a “60-day supply” of marijuana. In 2007 with the passage of House Bill 6032, the initiative allowances were further specified to entail a “60-day supply” that was defined as up to 24 ounces of useable marijuana and up to 15 marijuana plants; in addition, “designated providers” were permitted to supply marijuana to authorized patients.

A fundamental change involving access to medical marijuana in Washington State resulted from legislation passed in 2009. Prior to that point, the medical marijuana community in Washington State was relatively small, focused primarily on palliative care for chronic and end-of-life conditions and disorders. It was at the discretion of only physicians to authorize the medical use of marijuana. However, Senate Bill 5798 significantly changed the medical marijuana environment by granting the ability to “authorize” patients to physicians’ assistants, naturopaths, and nurse practitioners. Access to medical marijuana became as much – if not more – a matter of a “patient’s” financial resources than his or her medical status.

In 2011, the establishment of “collective gardens” prompted a second fundamental shift within the medical marijuana industry. In accordance with Senate Bill 5073, these collaborative growing operations were to be comprised of up to 10 authorized patients or designated providers who could cultivate up to 45 marijuana plants and possess up to 72 ounces of useable marijuana. However, these collaborative growing operations quickly became challenging to manage, particularly if located in a single-family residence. In the absence of any restrictive language in the statute, collective gardens began to occupy storefronts, leading almost immediately to a proliferation of what became known as dispensaries. As these operations were not necessarily subject to zoning, permitting, regulations, taxation or any routine oversight – and as there was no patient registry in Washington State – their incidence and prevalence will never be clearly known.

Washington State then joined Colorado in 2012, becoming the second state in the United States to legalize recreational marijuana for those 21 years of age and older. Under the auspices of Initiative 502, adult consumers are legally allowed to consume, possess, and purchase marijuana through state-licensed marijuana businesses. The regulatory body and ruling authority over the recreational marijuana market is the Washington State Liquor and Cannabis Board (LCB). The LCB is responsible for licensing all recreational marijuana businesses, product inventory and regulation, rules for production, and product testing requirements.

Three years after the state established the foundation for the recreational marijuana industry, the passage of Senate Bill 5052 mandated the integration of the medical marijuana industry into the regulatory system. Thus, as of July 1, 2016, the long-standing illegally operating dispensaries were shut down or became licensed retailers; sales are now subject to taxation, and medical marijuana products now must pass strict packaging and testing requirements before being sold to patients.

In 2015 the passage of House Bill 2000 provided the statutory means by which Sovereign Indian Nations can now participate in the state-regulated marijuana market. Tribes are now entering into compacts with Washington State allowing the development and operation of production and processing facilities as well as retail stores. That same year, House Bill 2136 eliminated the excise taxing structure originally enacted as a feature of Initiative 502. Marijuana transactions are now taxed at the point of purchase by consumers rather than being imposed on the industry at the production, processing, and retail levels.

Conclusion

The evolution of the legal marijuana marketplaces in Washington State has for nearly 20 years been driven in turn by compassion, innovation, politics and profits. Today, nearly 3,000 marijuana enterprises are operating in 37 of the state’s 39 counties.

Among the claims expressed during the 2012 campaign pertaining to Initiative 502 was that the legal marketplace would diminish the black market, sealing its fate as a nominal cottage industry. That has yet to be seen. It was also said that legalization would reduce the racial disparity in the criminal justice system, empty Washington State jails, improve personal and public health, and generate new revenues. This report will touch on each of those expectations, examining the marketplace, the regulatory environment and the broader community, concluding that few – if but one – of those outcomes have yet come to pass.

Section 2: Regulatory Overview

Introduction

This section will provide an overview of the regulatory functions the LCB has adopted and established for recreational marijuana and the newly integrated medical marijuana. Topics will include possession, licensing, production, testing, packaging, labeling, advertising, and licensing violations. Examples will be provided with regard to impacts and what the recreational landscape looks like for the state.

Data Summary

- Recreational marijuana consumers may possess:
 - 1 ounce of useable marijuana, 7 grams of marijuana concentrate, 16 ounces of infused-product in solid form, and 72 ounces of infused product in liquid form; no home cultivation is permitted;
- Medical marijuana qualified patients with a recognition card may possess:
 - 3 ounces of useable marijuana, 21 grams of marijuana concentrate, 48 ounces of infused-product in solid form, 216 ounces of infused product in liquid form, a minimum of 6 plants for home cultivation and 8 ounces of useable marijuana derived from those plants;
- Medical marijuana qualified patients without a recognition card may possess:
 - 1 ounce of useable marijuana, 7 grams of marijuana concentrate, 16 ounces of infused-product in solid form, 72 ounces of infused product in liquid form, a minimum of 4 plants for home cultivation and 6 ounces of useable marijuana derived from those plants;
- 222 additional marijuana retail locations have been added to the industry to offset the elimination of unregulated medical marijuana dispensaries following the passage of Senate Bill 5052;
- 2,697 licenses have been issued as of February 2017 – for 1,121 producers, 1,106 processors and 470 retailers, representing 1,674 individual businesses;
- 226,513 pounds (3,624,208 ounces) were produced during the second year of recreational commercialization;
- The average potency of marijuana flower available at one Seattle-based retailer during July 2016 was 21.62% - for marijuana concentrates the average potency was 71.71%;
- 70% of the marijuana-infused products available in the state fall within the “baked goods” or “desserts” categories;
- 93.6% of the public safety violations issued to recreational licensees involved minors.

Possession

Recreational Marijuana

The possession limits for persons 21 years of age and older are¹:

- 1 ounce (28.3 grams) of useable marijuana;
- 7 grams of marijuana concentrate;
- 16 ounces of marijuana infused-product (solid);
- 72 ounces of marijuana infused-product (liquid);
- No home grows permitted.

Serving sizes and transaction limits are defined in Washington State Administrative Code (WAC) 314-55-095². A single transaction is not allowed to exceed the defined possession limits. A single serving size for a marijuana-infused product (solid or liquid) cannot exceed ten milligrams of active tetrahydrocannabinol (THC) or Delta 9 – the compound in marijuana that creates the psychoactive effects. The maximum number of servings in an infused product is limited to 10 servings or 100 milligrams of active THC (delta9-THC). Examples are shown below:



The photo on the left includes three varieties of marijuana-infused granola bites³. Each granola piece has 10mg of THC and the overall product contains 100mg – the maximum serving size per product. The photo on the right shows infused pastilles that contains 2.5mg per candy lozenge⁴. As with the granola bites, the package does not exceed 100mg for the entire product.

There are no serving sizes established for useable marijuana or concentrates.

Legal consumers over 21 years of age may purchase up to 2,529 grams of marijuana from a licensed marijuana retailer in a single transaction. This includes marijuana in useable and concentrate form as well as both types of infused products.

Also in accordance with the WAC, there is no limit on how many times a consumer may buy marijuana in a single day; the only limitation is how much can be purchased at one time.

Some retailers across the state work with consumers to ensure they are not going over the permitted transaction limit for one purchase. For example, a retailer in Seattle allows consumers to order online for in-store pickup of products. When consumers confirm the order, a note reads: “If your order exceeds [transaction] limits, it will be adjusted in store to comply with Washington cannabis laws”⁵.



Medical Marijuana

When medical marijuana legislation was first passed in 1998, a “sixty day supply” was established as the amount qualified patients and caregivers could possess. In 2007 the Legislature passed a law identifying a new possession limit: 15 plants and 24 ounces of useable marijuana. However, these two possession definitions did not succeed in completely eliminating the confusion between the medical market and the state.

With the passage of Senate Bill 5052 in 2015, the medical marijuana industry ceased operating as an informal grey market and was incorporated into the recreational system. The restructuring of the medical marijuana market resulted in specific possession limits for patients and designated providers according to product type, similar to those limiting possession for recreational consumers.

The possession amounts allowed per patient now depend on whether the patient only possesses an authorization from a healthcare provider or if the patient possesses both an authorization form and a medical marijuana recognition card issued by a licensed retailer.

For patients and/or designated providers with a recognition card, the possession limits were set at three times the amount allowed for a recreational marijuana user⁶:

- 3 ounces (85.04 grams) of useable marijuana;
- 21 grams of marijuana concentrate;
- 48 ounces of marijuana-infused product (solid);
- 216 ounces of marijuana-infused product (liquid);
- 6 marijuana plants for home cultivation and 8 ounces of useable marijuana derived from those plants.

For patients or designated providers without a medical marijuana recognition card (those only possessing an authorization) possession limits for patients are similar to those for a recreational marijuana user:

- 1 ounce (28.3 grams) of useable marijuana;
- 7 grams of marijuana concentrate;
- 16 ounces of marijuana-infused product (solid);
- 72 ounces of infused-product (liquid);

- 4 marijuana plants for home cultivation and 6 ounces of useable marijuana derived from those plants.

For medical marijuana patients, the healthcare provider may authorize up to 15 plants for home cultivation in addition to which the patient may possess up to 16 ounces of useable marijuana derived from these plants. If multiple patients and/or providers live in a single housing unit, the maximum number of plants allowed at the house is 15.

Licensing

Recreational Options and Processes

Applications to be selected as a licensed business in the recreational marijuana market were initially accepted during a 30-day period in December 2013 following which the LCB began issuing licenses at the beginning of 2014⁷. The LCB established three license categories for which applicants could apply:

- **Producer**
 - Responsibilities: harvesting marijuana and selling marijuana, marijuana plants, seeds, and plant tissue cultures to licensed processors in the state at a wholesale price;
- **Processor**
 - Responsibilities: processing, packaging and labeling useable marijuana and marijuana-infused products (liquid and solids) to sell to licensed retailers in the state at a wholesale price;
 - Restrictions: no infused products that require refrigeration, freezing or hot holding are produced;
- **Retailer**
 - Responsibilities: selling useable marijuana, marijuana-infused products, and marijuana paraphernalia to persons twenty-one years of age or older;
 - Restrictions: selling of butane, extraction tubes, and/or blenders for at-home extractions; allowing anyone under the age of twenty-one to be on the licensed premise; open consumption or open containers on the licensed premise.

The basic requirements for an applicant included being at least 21 years of age, having established residency in Washington State for at least the previous three months, and the ability to pass a criminal history investigation. These same requirements pertained to the financiers of the license applicant as well.

Specific limits and restrictions applied to retail licenses. They are considered to be a discrete license that cannot be held in combination with a producer or processor license. The LCB also established a limit of 334 total retailers statewide, based on an algorithm that limits the total number of retailers allowed per city and county based upon the population of the jurisdiction⁸.

In many jurisdictions more applications were received than could be allowed so a lottery was held. For example, King County received 191 applications but was capped at 61 retailers. A total of 75 jurisdictions throughout the state subsequently required a lottery.

Producer and processor licenses were not limited by a capped amount. These licenses may also be held in combination or as a standalone license. Applicants may not however have a direct financial interest in a marijuana retailer. During this time a business entity may have held up to three licenses. For producers, licenses are issued for one of three tiers:

- Tier one: less than 2,000 square feet;
- Tier two: 2,000 – 10,000 square feet;
- Tier three: 10,000 – 30,000 square feet.



As originally enacted in law, all marijuana businesses are subject to siting restrictions. Restricted zones were created around specific establishments and activities with a buffer set at 1,000ft., including:

- Elementary or secondary schools;
- Playgrounds;
- Recreation centers or facilities;
- Child care centers;
- Public parks;
- Public transit centers;
- Libraries;
- Game arcades (where admission is not restricted to persons twenty-one and older).

The application review process included a telephonic interview, an announcement to local authorities, and an evaluation of the proposed business location. Additionally, applicants were required to submit all business documentation, operating plans, and identify all financiers. If an applicant passed all the elements of the process, the license was issued⁹.

With the passage of Senate Bill 5052, two new types of licenses were introduced into the marijuana industry: transportation and research.

A transportation license permits the transportation or delivery of marijuana and marijuana products between licensed marijuana businesses. The business employees providing the transportation must travel with a transportation manifest that logs all delivery information including the licensed businesses involved, the amount and type of product being moved, and the route of the transportation¹⁰. Any state-licensed retailer may still have employees transport marijuana products to and from other licensed marijuana businesses or may opt to utilize one of the new transportation licensees to do so.

In regard to marijuana research licenses, applicants can seek permission to grow, manufacture, and possess marijuana for research purposes in order to¹¹:

- Test chemical potency and composition levels;
- Conduct clinical investigations of marijuana-derived drug products;
- Conduct research on the efficacy and safety of administering marijuana as part of medical treatment;
- Conduct genomic or agricultural research.

Fees established for the licensing process include an application fee of \$250, a \$15 processing fee, a \$5 registration fee with the Business Licensing Service, and an annual renewal fee of \$1,000 per license¹².

Medical Marijuana Dispensary Integration

When the first medical marijuana law was enacted in Washington State in 1998, no consideration was given in the statute to licensing or zoning. This has in part precluded any meaningful efforts to determine how expansive the industry was. Throughout the decades during which the medical marijuana industry flourished there was no accounting for the number of dispensaries, qualified patients, or designated providers in the state. Estimates of the size of the marketplace ranged from 1,500 to 1,700 dispensaries¹³.

However, the passage of Senate Bill 5052 eliminated “collective gardens” and their associated dispensaries and created a new state licensing structure administered by the LCB which allowed some pre-existing medical marijuana dispensaries to enter into the regulated industry.

In addition to formally regulating the medical market, the state acknowledged that it needed to ensure that there were enough stores statewide to meet the demand of both recreational and medical marijuana consumers. BOTEC Analysis, a consultant for the LCB, recommended an increase from the original 334-store cap to 556 retailers statewide.

The LCB established a merit-based application process that allowed the owners and employees of dispensaries across the state to seek recreational retail licenses. The process placed applicants into three categories:

- First Priority:
 - Applied to LCB for a marijuana retailer license prior to July 1, 2014;
 - Operated or were employed by a collective garden before January 1, 2013;
 - Maintained a state and municipal business license, as applicable in the relevant jurisdiction;
 - Paid all applicable state taxes and fees.
- Second Priority:
 - Operated or were employed by a collective garden before January 1, 2013;
 - Maintained a state business license and a municipal business license, as applicable in the relevant jurisdiction;
 - Paid all applicable state taxes and fees.
- Third Priority:
 - All other applicants who did not have the experience and qualifications outlined in the first and second priority categories.

Applications were accepted beginning in October 2015. All existing medical marijuana dispensaries then had to either be issued a state license or to completely exit the industry by July 1, 2016¹⁴. The city of Seattle reported that by October 2015, 56 of the 120 dispensaries in the city had voluntarily shut down and 49 had applied to the LCB for a license¹⁵. The 15 remaining dispensaries did not have or pursue licenses to operate under state law and were issued cease and desist letters from the King County Prosecuting Attorney¹⁶.

Critics of the demise of the medical marijuana industry noted that some dispensaries that had been involved in the industry since the state's implementation of medical marijuana in 1998 were not granted first-priority status. In January 2016, a lawsuit was filed on behalf of several longtime medical marijuana dispensaries asserting that the LCB was not following its own merit system. The lawsuit alleged that those who had been awarded state licenses exploited and circumvented the LCB in order to achieve first-priority status to the exclusion of the longtime businesses¹⁷.

Litigants pointed out that a hopeful licensee could outwit the system by buying a paystub from a dispensary employee to pass as his or her own. This "proof of employment" at a dispensary placed the applicant in first-priority status. According to an independent search conducted by a local Seattle newspaper, a paystub was worth \$80,000 to \$100,000 for that purpose¹⁸.

By the time the application window closed in March 2016, the LCB received 1,270 applications. The priority rankings revealed that 162 qualified as first-priority, 63 were at the second-priority level, and 879 applications were given third priority status¹⁹.

Medical Marijuana Endorsements for Recreationally Licensed Retailers

To ensure that the recreational industry had reliable access points for medical marijuana patients and providers, the LCB created an "endorsement" status permitting licensed retailers to sell medical grade marijuana.

Medically endorsed recreational retailers assume multiple functions and privileges to meet the needs of medical patients and providers. At the discretion of the endorsed retailers for instance, free marijuana for medical use may be provided to qualified patients and designated providers.

Additionally, qualified patients 18 to 21 years of age with a valid recognition card may patronize a marijuana retailer with a medical marijuana endorsement. Patients under the age of 18 with a valid recognition card may patronize a retailer with a medical marijuana endorsement when accompanied by their assigned designated provider who is allowed to purchase products for the patient's medical use.

Medically endorsed retailers are now also responsible for hosting and populating the Medical Marijuana Authorization Database (MMAD). These retailers are responsible for entering data regarding medical marijuana patients and designated providers into the MMAD as well as for issuing recognition cards. The information that is entered into the database and printed on the cards is obtained from the patient's or designated provider's medical marijuana authorization.

The MMAD is voluntary. Entering into the database occurs at the discretion of the patient and provider. The only instance in which it is mandatory to register is if the patient is under the age of 18 in which case the patient and provider must both be entered.

Medical Marijuana Consultants

State-licensed retailers who receive a medical marijuana endorsement from the LCB to sell medical grade marijuana must employ at least one medical marijuana consultant. Consultant responsibilities include assisting patients and providers in selecting products and giving advice as to how to use certain products. Consultants are not allowed to diagnose or treat any conditions or to suggest modifications or the elimination of any prescribed course of treatment.

Medical marijuana consultants must be over the age of 21 and must possess a valid medical marijuana consultant certificate. The training program, which must be successfully completed for the certificate to be issued, entails 20 hours of instruction including²⁰:

- Five hours: Washington State marijuana laws and rules;
- Two hours: qualifying medical marijuana conditions and common symptoms of each;
- Two hours: short-term and long-term positive and negative effects of marijuana;
- Five hours: marijuana products and possible benefits based upon the patient's condition; the potential contraindications of marijuana; and the risks/benefits of various routes of administration;
- Two hours: safe handling of marijuana products;
- Two hours: ethics, customer privacy and rights;
- Two hours: risks and warnings of overuse, abuse and addiction.

The first approved certification program for medical marijuana consultants was awarded to Seattle Central College²¹. The application fee for the program is \$95 and the course costs \$499 – the entire training program is online.

Consultant certificates expire every year. Consultants are required to participate in ten hours of continuing education each year in order to renew the certificate²². Hours may be earned in these topic areas:

- Washington State marijuana laws and rules;
- Science-based information about marijuana;
- Addiction and substance abuse;
- Communication skills;
- Professional ethics and values.

Medical Marijuana Recognition Cards

Consultants are specifically responsible for entering patient and provider data into the MMAD and for issuing recognition cards²³. Once a patient or provider opts to register in the MMAD, the onsite medical marijuana consultant enters the information available on the patient or provider's healthcare authorization form. That information is then displayed on the recognition card.

The information displayed on the patient's or designated provider's recognition card includes: a unique identifying number; a photograph of the patient or provider; the amount of useable marijuana, marijuana concentrates, marijuana-infused product (solid), and marijuana-infused product (liquid) allowed for possession; the number of plants authorized to grow; the effective date and expiration date; and name of the healthcare professional who granted the authorization²⁴.



If a designated provider is responsible for patients under the age of 18, the designated provider must be entered into the MMAD as well. All designated providers, regardless of the patient's age, must be identified as the patient's specific provider on the authorization form issued by a healthcare provider. In addition, all designated providers may only provide marijuana to one patient at a time.



Recognition cards expire after one year from issuance if the patient is 18 years of age or older and after six months if the patient is under the age of 18. Patients and providers may not renew their recognition cards until a new examination by a healthcare provider is completed²⁵.

Registered Cooperatives

On July 1, 2016, Senate Bill 5052 eliminated all collective gardens in Washington State. In their place, the state now allows “cooperatives” to form under a regulated framework. Cooperatives may be formed by patients and/or designated providers who have a valid authorization and a valid recognition card for medical use. Patients under the age of 21 may not belong to a cooperative but an assigned designated provider may do so.

The locations of cooperatives must be registered with the LCB and the names of all members as well as copies of all valid recognition cards must be submitted. Cooperatives must be located at the domicile of one of the registered patients or providers, which may not be located within one mile of a state-licensed retailer. Additionally, only one cooperative is allowed per tax parcel and the copies of all members' recognition cards must be kept at the location.

The registered cooperative must be the only location at which patients and providers grow marijuana and manufacture products. The maximum number of plants that may be grown is 60 and the cooperative may possess up to 72 ounces of useable marijuana derived from those plants.

Cooperatives must purchase marijuana seeds, starters and/or plants from a state-licensed producer. All plants and products must be entered into a traceability-like system in order to monitor all production and manufacturing.²⁶

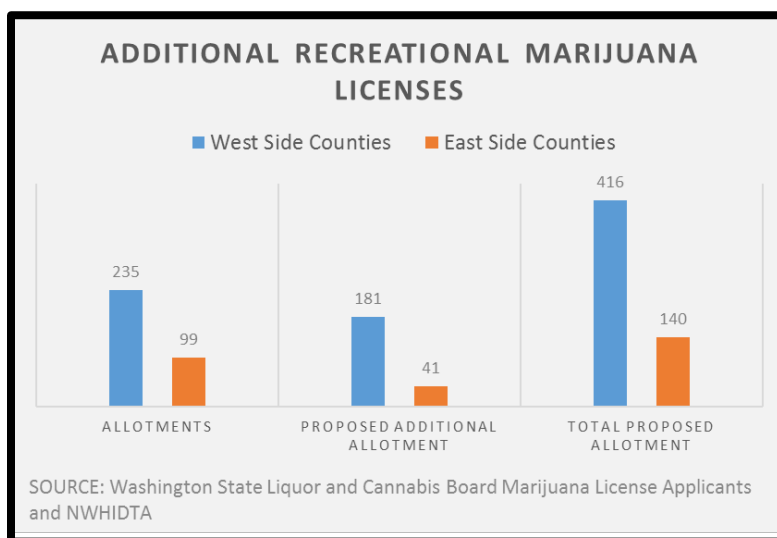
LCB enforcement officers may conduct inspections of cooperatives. These inspections may be random or complaint-driven and are conducted to check compliance with respect to plants, products, floor plan, records, confirmation of no illegal diversion, and to ensure that all rules and state laws are being followed.²⁷

Recreational and Medically Endorsed Licensing Landscape

Washington State is characterized as consisting of two distinct regions: west and east. It is commonly said that the west side of the state is more liberal and urban whereas the east side is more conservative and rural. The counties comprising these regions are:

- West side counties: Whatcom, Skagit, Snohomish, King, Pierce, Lewis, Skamania, Clark, Cowlitz, Wahkiakum, Pacific, Grays Harbor, Mason, Jefferson, Clallam, Island, Kitsap, San Juan, and Thurston;
- East side counties: Okanogan, Chelan, Kittitas, Yakima, Klickitat, Douglas, Grant, Benton, Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Whitman, Adams, Franklin, Walla Walla, Columbia, Garfield, and Asotin.

With the integration of the medical marijuana market into the expanded recreational industry, the additional 222 retail locations are located as shown below:

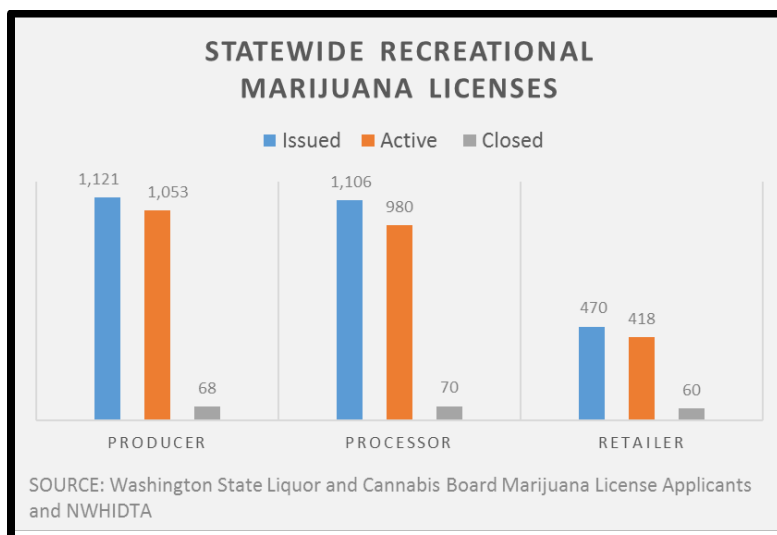


The original allotment of retail licenses following the passage of I-502 located 235 retail stores on the western side of the state and 99 in the east. Among the additional 222 newly created stores, 181 were assigned to the west and 41 were located on the east side of the state. In total, 416 licensed recreational retailers are located on the western side and 140 are located in Eastern Washington.

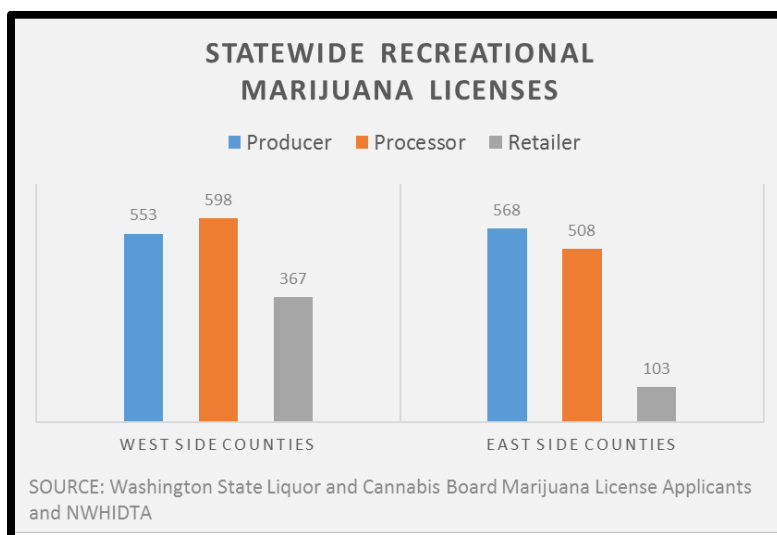
Every county located on the western side of the state experienced an increase in total allotments with the expansion. King County had the highest increase with 53, Snohomish County was second with an additional 31, and Whatcom County was third with an increase of 14. Spokane County received the largest increase on the east side of the state with 15 allocated

retailers. Grant County was second with four additional retail locations and Stevens and Okanogan counties tied for third with an increase of three retail locations.

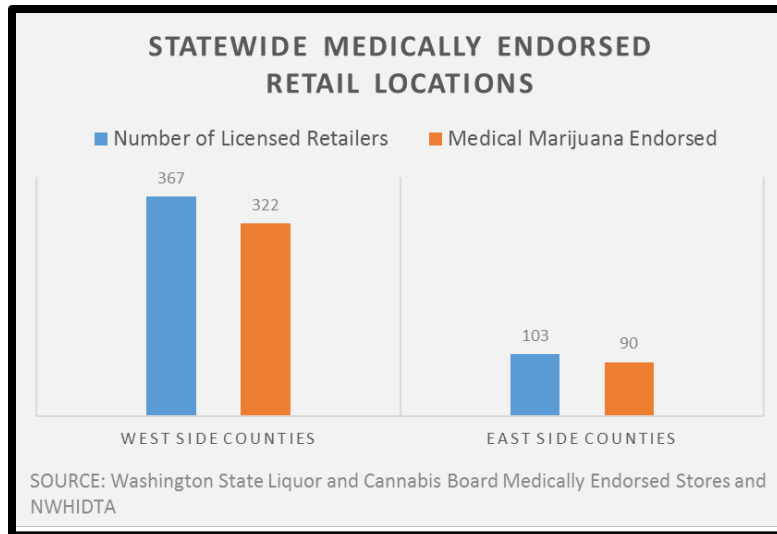
From November 2013 to February 2017, a total of 2,697 recreational marijuana licenses were issued in the state²⁸. Of those, 198 licenses have closed down, leaving a total of 2,499 active licenses across all three tiers as shown in the following chart:



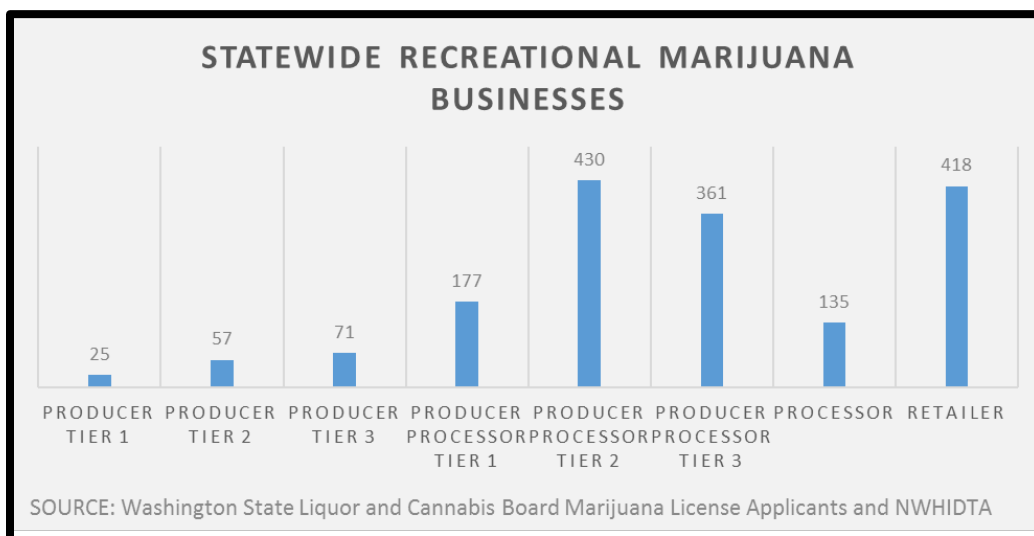
Of that total, 1,121 were producer licenses -- although 68 were later closed permanently - leaving 1,053 licensed producers in operation. The number of processor licenses was 1,106, with 70 having closed permanently, leaving 980 active licenses. Finally, 470 retailing licenses were issued; 60 later closed, with 418 remaining open.



The graph above indicates where the active licenses are located within the two regions of the state. Western counties had 1,518 active licenses and eastern counties totaled 1,179. Western counties accounted for 49.3% of the producer licenses and 54% of the processor licenses. Of the 470 retail licenses issued, 78% are located on the west side with the eastern counties home to 50.6% of the producer licenses, 49.5% of the processor licenses, and 21.9% of the retail licenses.

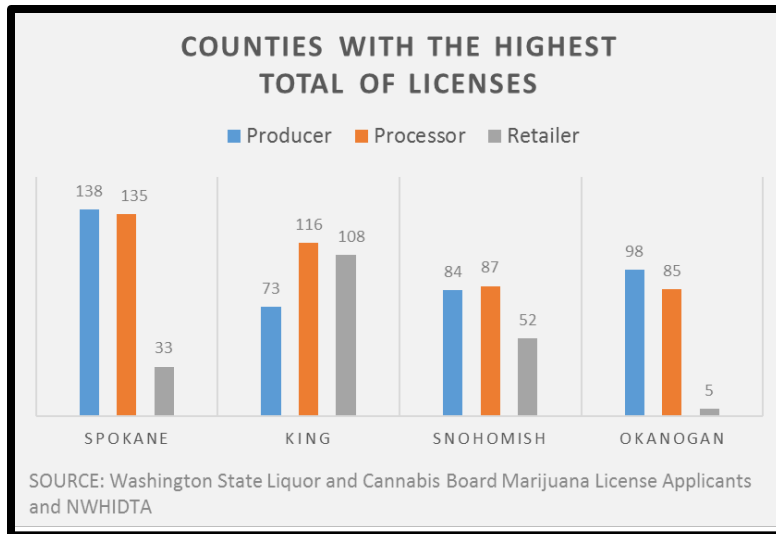


With the elimination of dispensaries and the mandate for licensed recreational retailers to become the new access points for medical marijuana, retailers have applied for endorsements in almost all existing locations. Almost 88% of west side retailers and 87% of east side retailers are now endorsed to sell medical marijuana products to qualified patients and designated providers.



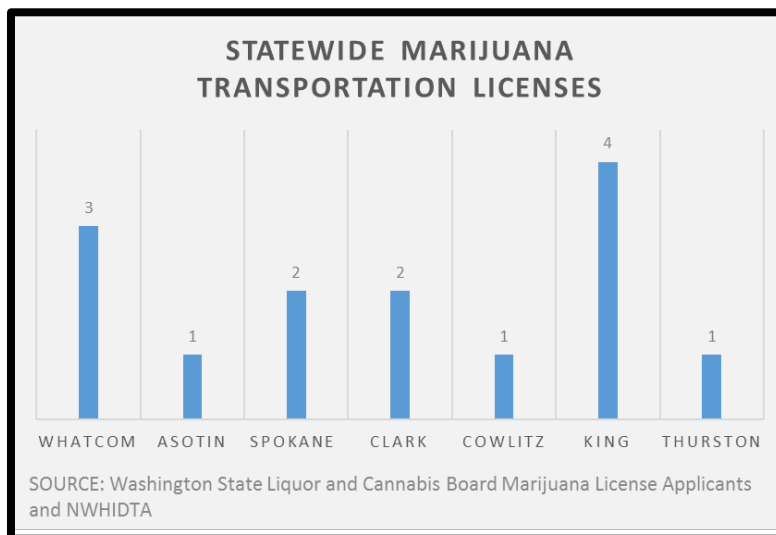
It should be noted that there is a difference between the number of licenses issued and the total number of businesses. For example, producers and processors may hold one license number that actually accounts for two licenses held by one business.

The 2,697 marijuana licenses issued pertain to a total of 1,674 recreational marijuana businesses in the state. The combination licenses of producers and processors make up 57.8% of the total number of marijuana businesses while retailers entail 24.9% of the industry.



The counties with the highest total number of licenses issued are Spokane, King, Snohomish, and Okanogan counties. As of February 2017, Spokane County is the most active county with 306 licenses, King County accounts for 297 licenses, Snohomish County totals 223 licenses, and 118 licenses have been issued in Okanogan County.

During the first year of commercialization, from July 2014 to July 2015, these four counties led the state in the number of licensed locations. With the increase of 222 additional stores due to the medical marijuana market integration, these counties continue to occupy the top spots. King County experienced an increase in the number of licensed businesses of 158%, Snohomish increased by 139%, Spokane saw an increase of 61%, and Okanogan County increased by 57%.

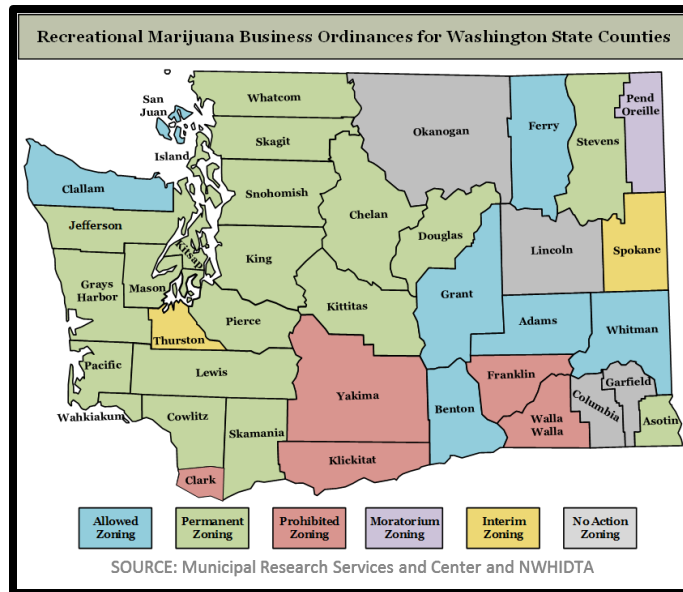


As of April 2017, 14 marijuana transportation licenses have been issued from a total of 38 applications. Eleven transportation licenses are now operating on the western side of the state and the remaining three licenses are located in the east.

Marijuana-Industry Impact on Local Jurisdictions

Although recreational marijuana has been legal in Washington State for almost five years, the licensing landscape is far from being settled. Local jurisdictions across the state have adopted, amended, and implemented new zoning laws that continue to change the circumstance of many communities.

Not only do these changes influence the recreational marijuana industry, but also the newly integrated medical market. Local jurisdictions continue to pass restrictive ordinances bearing on licensed marijuana businesses as well as registered medical marijuana cooperatives.



The Municipal Research Services Center (MRSC) collects data on local jurisdictions and the ordinances they enact with respect to all types of recreational marijuana licenses²⁹. The zonings are categorized in six major groups:

- Allowed under existing zoning: marijuana businesses are not specifically allowed, but are allowed in appropriate zones;
- Permanent zoning: specifically allowed in designated zones;
- Interim zoning: provisional zoning for businesses that includes review processes and amendments with set time periods;
- Moratorium zoning: prohibits businesses while the state legislature and/or local elected officials deliberate on the subject further;
- Prohibited zoning: businesses are not allowed;
- No action: have not taken a specific stance with regard to marijuana businesses.

As of February 2017, 27% of Washington State counties have passed zoning ordinances allowing or permitting licensed marijuana businesses. Only one county currently has a moratorium that applies to all businesses. Yakima, Clark, and Walla Walla counties have remained prohibited counties since legalization to date. At the time the previous *Report* was completed, Klickitat County had implemented a prohibition but has since approved a moratorium status. Pierce County had also originally implemented a prohibition but has recently become permanently zoned for marijuana businesses.

A majority of the voters in Pierce County approved recreational marijuana when Initiative 502 passed in 2012. However, zoning was subsequently prohibited throughout the county and as of December 2015, the Pierce County Council remained undecided about allowing stores despite the original vote. An advisory vote was taken in April 2016 indicating that 52% of the voters in the unincorporated areas of the county did not want to permit marijuana businesses^{30 31}. Thereafter an attempt to pass an ordinance to continue the countywide ban failed and the prohibition was lifted³².

Pierce County is not the only jurisdiction to experience a shift in regulations involving marijuana businesses. Other examples:

- The Yakima City Council originally voted to ban all marijuana businesses in January 2014 as 50% of the city rejected I-502³³. In May 2016, a new city council voted to lift the ban and allow marijuana businesses effective July 2016³⁴.
- The Metropolitan King County Council voted in June 2016 to add limitations to licensed marijuana producers located in rural areas. Originally, operations were allowed in all rural zones but under the new ordinance, they are only allowed on parcels of 10 acres or more³⁵.
- Okanogan County commissioners enacted a four-month moratorium on new marijuana producers and processors in March 2016 pending the drafting of new zoning rules. Under the new rules, licensees need to notify neighbors of the proposed operation's location, comply with environmental standards including those pertaining to odors and waste disposal, and install downcast lighting in deference to neighboring properties. Once these conditions are met, the licensee may receive a conditional use permit for the business³⁶.

New rules approved by the LCB also resulted in zoning changes for local jurisdictions and licensed businesses³⁷. Initiative-502 initially set the restricted buffer zone at one-thousand feet from sensitive establishments including libraries, transit stations, playgrounds, childcare centers, recreation centers or facilities, public parks, and any game arcades where admission is not restricted to persons 21 years of age and older. However, the new rules remove the boundary restriction from all establishments except for elementary and secondary schools. Some examples include^{38 39}:

- The city of Shelton reduced the buffer zone to 500 feet for child-care centers, arcades, libraries, public parks, public transit centers, and recreational facilities. This reduction only applies to producers, processors, and research licenses; retailers are required to follow the one thousand-foot buffer zone.
- The city of George reduced the buffer zone to 100 feet for parks, recreational/community centers, libraries, child-care centers, game arcades, and public transit centers.
- The city of Seattle reduced the buffer zone for retailers to 250 feet in the downtown district and 500 feet throughout the rest of the city. Additionally, no more than two licensed retailers can be within one thousand feet of each other.
- The city of Tacoma reduced the buffer zone for retailers within the downtown district to 500 feet from correctional facilities, courthouses, drug rehabilitation facilities,

substance abuse treatment facilities, detoxification centers, parks, recreational centers, libraries, child-care centers, and game arcades.

With multiple variations of the law enacted throughout the state, businesses continue to be caught between the state's purview and those of local jurisdictions. Many business owners believe that a state license trumps any and all local business restrictions – but that is not the case. In order for a licensee to legally conduct business it needs to be permitted by both the state and the city or county in which it wishes to operate.



A moratorium on marijuana businesses in Clark County was adopted in 2014. However, a state license was granted to a retailer who wished to locate in the county. Sticky's Pot Shop then opened in Hazel Dell despite the moratorium. The licensee had been awarded a building permit for the location as he claimed the business was not dealing with marijuana directly. Code enforcement officers later issued a warning to the business and levied fines of \$500 a day. The store continued to operate until closure was forced in September by a county Superior Court Judge. By that time, the licensee had accrued \$100,000 in fines⁴⁰.

Production

Traceability

As Washington State has legalized a federally illicit, widely abused substance, keeping track of all production activities is critical for regulators. The LCB therefore chose to contract with *BioTrackTHC* in order to utilize their traceability software⁴¹. The mandate for this database is to track all marijuana, from seed to sale, and all state-licensed businesses are required to use it.

When owners are issued their license, they must complete a one-time training on the traceability system. Once that is completed, the business is deemed to be compliant with the system. Other employees may then be designated to operate the system but there is no mandatory training required by the LCB for these employees⁴².

All plants grown in the producer tier are affixed with a barcode when each plant reaches eight inches in height. This barcode is required to be attached to the specific marijuana plant/product through its entire production life. When products are sent to a laboratory for testing, all product information is required to be logged in the system. Other requirements include entering the date of the destruction of a product, when plants are moved to another room, or when a shipment is made.

LCB oversight of the state's recreational marijuana industry relies heavily on the traceability system. It provides the means to monitor inventory, shipments and the transporting

of products, to ensure testing standards have been met, and verifies the overall accountability of the market. More importantly, it is intended to ensure that marijuana is not being sold illegally. Over the course of the state's regulated market activity thus far, some licensed marijuana producers have called for an overhaul of the current tracking system. A petition filed in March 2016 urged that improvements be made to the system in order to save valuable time and money as well as to address more accurate tracking of marijuana.

Estimating the Medical Marijuana Plant Canopy

When Senate Bill 5052 was being considered by the Legislature, a question was raised as to whether the existing recreational plant canopy – 7 million square feet in July 2015 – was sufficient to meet the needs of an integrated market. At the behest of the LCB, BOTEC Analytics then produced a report on the medical marijuana market for the purpose of determining its size in comparison to the recreational and illicit markets.

According to the findings published in December 2015, the best estimate for the relative shares of the three markets attributed 37% to medical marijuana, 35% to the recreational/I-502 market, and 28% to the illicit industry⁴³. Additionally, the report estimated that respectively, \$480 million, \$460 million, and \$390 million in total market revenues could be credited to the medical, recreational, and illicit industries in the state. The document also reported an estimated 10% increase in marijuana consumption between 2013 and 2015.

The RAND Corporation had published a report before Washington's recreational marijuana market entered into commercialization that attempted to enumerate the total number of consumers and the total consumption of marijuana in the state. According to RAND and the 2013 National Survey on Drug Use and Health (NSDUH), approximately 556,000 marijuana consumers in the state consumed 175 metric tons of marijuana annually (with a possible range of 135-225 metric tons). However, the more recent BOTEC analysis indicated that consumption in the state had increased from 175 metric tons to 192.5 metric tons. This increase was said to be due in part to population growth and an upturn in past-month use.

With research revealing increases in statewide consumption and the estimated market share of medical marijuana, concerns were expressed as to whether the current plant canopy was sufficient to meet demand.

The University of Washington Cannabis Law and Policy Project then examined the marijuana plant canopy in March 2016 in the context of the upcoming integration of the medical marijuana market in July 2016⁴⁴. At that time, the plant canopy was at 10 million square feet in order to meet the increased demand of the recreational market.

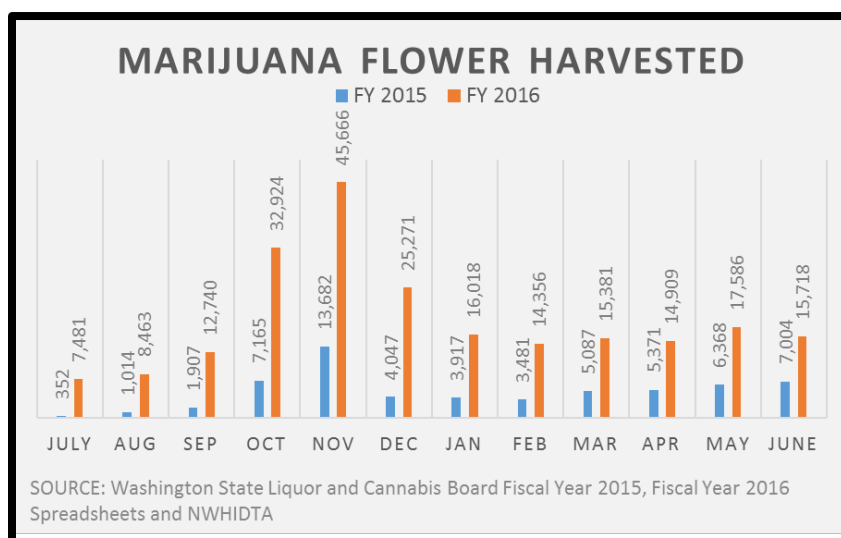
According to the report, 1.7 million to 2 million square feet of plant canopy was needed to supply the existing medical marijuana market in Washington State, including both indoor and outdoor production. The report also concluded that the threshold of 10 million square feet of plant canopy was sufficient to meet the demand for both the recreational and medical marijuana markets.

As of February 6, 2017, the number of plants in cultivation according to the Traceability System was 933,889 with 30,150 mature in inventory, totaling 964,039 plants supplying both industries⁴⁵.

Fiscal Year 2015 and 2016

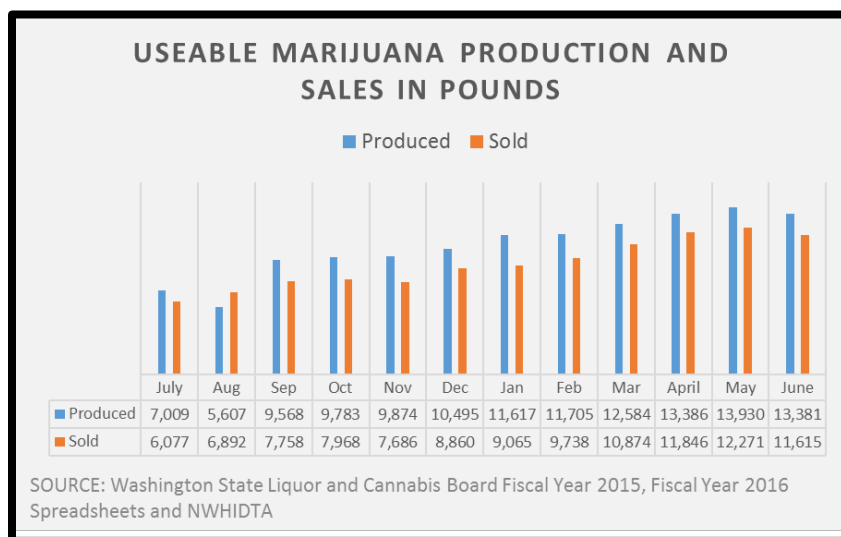
The LCB traceability system affords the ability to quantify the state's consumption of legal marijuana. The data below was reported directly by licensed businesses and collated by the LCB on Fiscal Year (FY) 2015 and FY 2016 spreadsheets⁴⁶.

It should be noted that the FY 2016 totals include medical marijuana production and sales information. At this time, there is no capacity to discern specific medical marijuana product transactions in these spreadsheets.

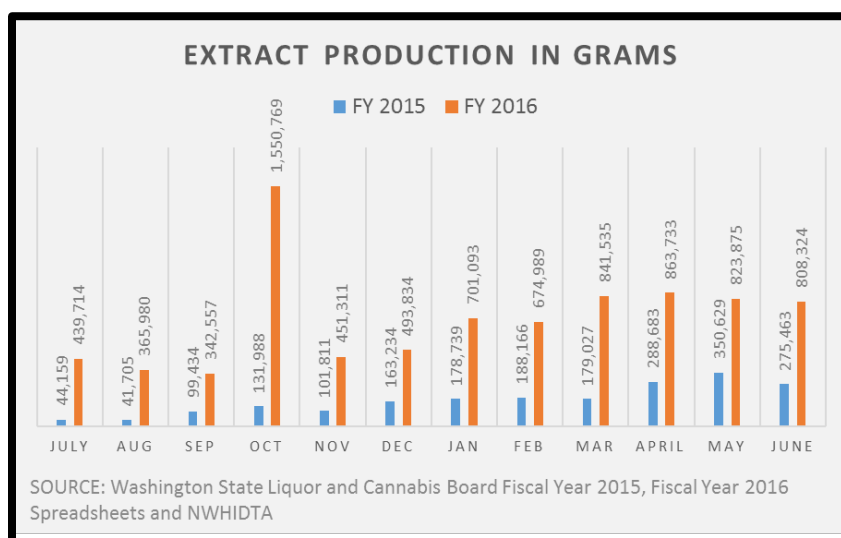


During the first year of commercialization, 59,394 pounds (950,304 ounces) of marijuana were harvested from licensed producers. During the second year of commercialization, 226,513 pounds (3,624,208 ounces) of marijuana were harvested – an increase of 281%.

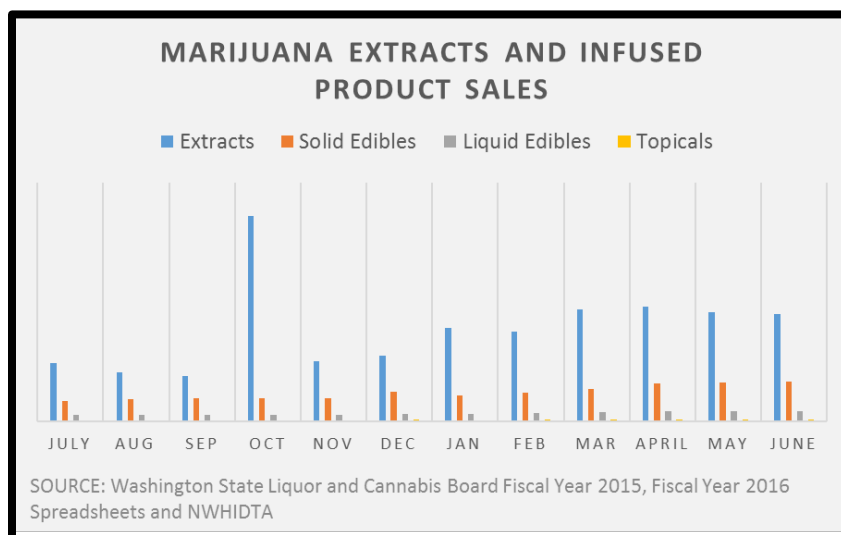
The state reports that over 102,744,568 grams have been harvested. This would allow everyone in the state of Washington, regardless of age, to possess over eight grams⁴⁷.



A total of 128,939 pounds were packaged for retail sale by processors. A total of 110,650 pounds of useable marijuana was sold, equaling 50,235,100 grams of useable marijuana. The following graph shows the total amount sold by retailers during FY 2015 and FY 2016.

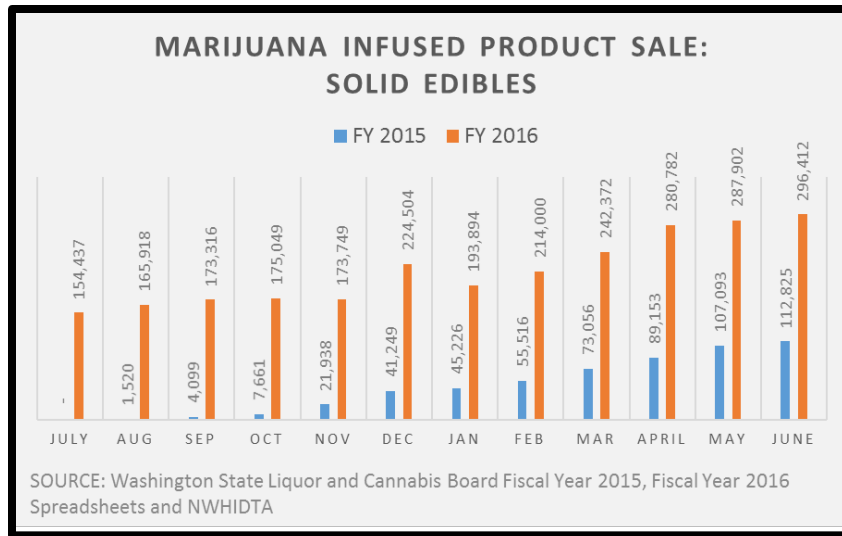


The total number of grams produced for extraction was 2,043,038 in FY 2015. 8,357,714 grams were then produced in FY 2016 – an increase of 309%. These extracts are used for marijuana concentrates, extracts for inhalation, and oil for marijuana-infused products.

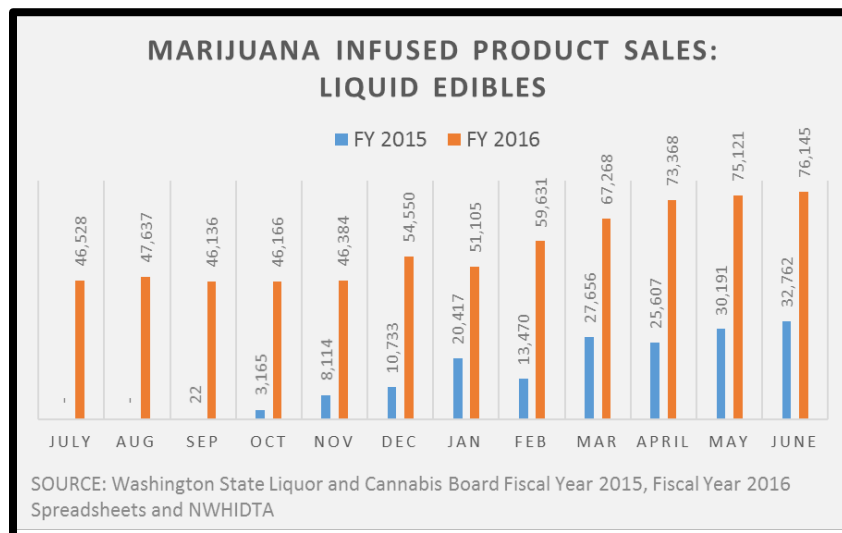


The LCB defines a single marijuana product as “one unit”. No product can be greater in size than the transaction limits defined in WAC 314-55-095⁴⁸. For example, marijuana concentrate has a transaction limit of seven grams. A transaction could therefore entail seven one-gram products, or seven units, and would remain within the transaction limit⁴⁹.

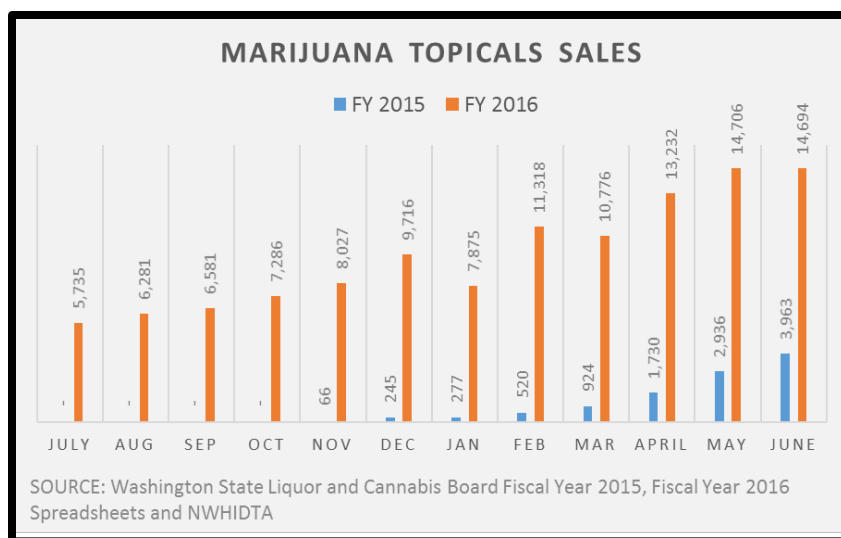
This graph does not show the purchase amount – the data treats one gram of marijuana concentrate and also a half gram of marijuana concentrate as one unit. The sizes of the products consumers are buying are not documented in detail. The preceding graphs show that consumers are buying more extracts for inhalation than solid/liquid edibles or topicals.



The total number of solid edible units sold in FY 2016 was 2,582,335, an increase of 362% from FY 2015.



The total number of liquid edible units sold in FY 2016 was 2,582,335, an increase of 301% from FY 2015.



The total number of topical units sold during FY 2016 was 116,227, an increase of 990% from FY 2015.

The combination of both solid and liquid edibles totaled 3,272,374 units and approached the total number of units of extracts for inhalation, 3,787,484. Thus, extracts were the top selling product as measured by number of units sold for FY 2016.

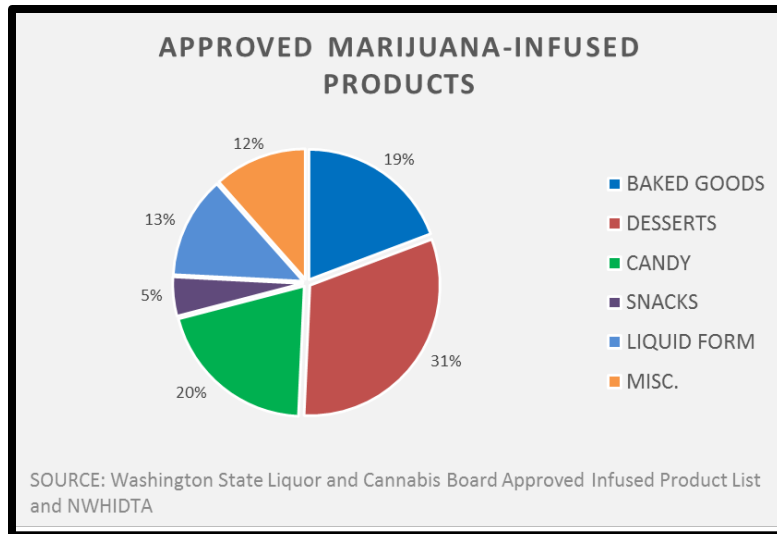
Marijuana-Infused Products

The array of marijuana-infused products available in the marketplace is relatively novel to many marijuana consumers, and has raised concerns among Washington State residents. Parents, educators, medical professionals, law enforcement and even pet owners have experienced or witnessed untoward events associated with their consumption. Nonetheless, demand for these products is increasing. An analysis of LCB data for FY 2015 and FY 2016 shows a 300% increase in units sold for both solid and liquid edibles within one year.

Responsibility for oversight of this aspect of the industry rests with the Department of Agriculture as well as the LCB. Products are first granted approval by the Department of Agriculture. Inspections are conducted in the manufacturing kitchens of the processors across the state to ensure best practices are employed. In addition, recipes are reviewed to ensure proper labeling of major allergens and that the THC is evenly distributed throughout the product⁵⁰.

Once produced, the product moves to a four-panel review process on the part of the LCB. The product is examined in order to be categorized and to determine how much THC it contains. The panel conducting this review is comprised of the rules coordinator, health liaison, enforcement unit, and licensing unit of the LCB⁵¹.

Members of this panel have determined that packaging with bright colors has a strong appeal to children, as do certain products such as Rice Krispy treats and hot chocolate⁵². The guidelines imposed by the state are intended to keep marijuana products out of the hands of children – the first priority of the Cole Memo. The following chart depicts the categories of products that have been approved by the WSLCB panel⁵³:



The categories are:

- Baked goods: cookies, brownies, scones, biscotti, muffins, bread: 19%;
- Desserts: chocolate, caramels, truffles, brittle, fudge, mints: 31%;
- Candy: “pebbles”, “jewels”, “gems”, “nuggets”: 20%;
- Snacks: pita chips, granola, granola bars, trail mix, croutons, pretzels, nuts, fruit snacks: 5%;
- Liquid form: drinks, syrups, honey sticks, “shots”, cooking oil, olive oil: 13%;
- Miscellaneous: capsules, tinctures, breath strips: 12%.

In total, baked goods (cookies) and desserts (chocolates) account for almost 70% of the approved products on retail shelves. By January 2017, the LCB panel had approved a total of 1,460 marijuana-infused products.






The photos above show examples of colorful products that have been approved for retail sale. The photo on the left is sour raspberry ‘marmas’ which are chewy candies⁵⁴; the photo at center is a rice krispy treat marketed as a ‘cloud bar’⁵⁵; and the photo on the right is marijuana-infused hard candies in a fruit flavor⁵⁶.

New rules passed by the LCB in 2015 included the elimination of marijuana infused inhalants related to fruit, chocolate, vanilla, honey, candy, and cocoa, although mint remains an allowed flavor⁵⁷.

Marijuana Potency

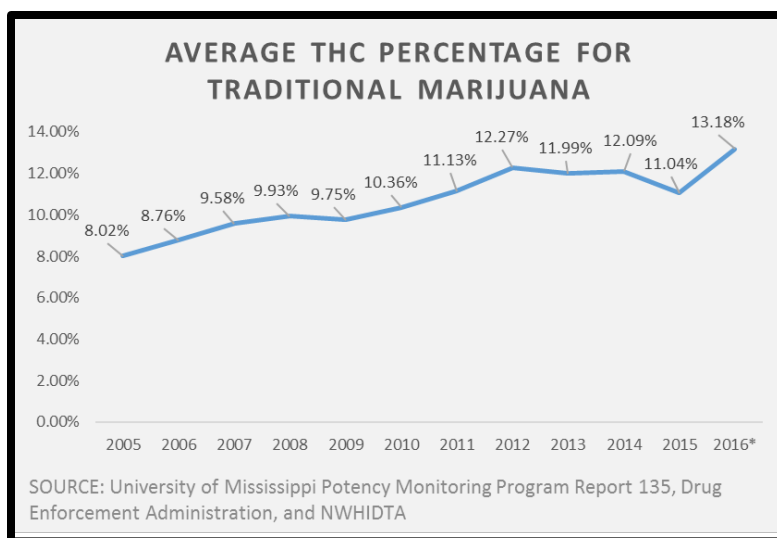
The potency of smokable marijuana has increased steadily since the 1990's. This subsection will examine the potency of marijuana in useable, concentrated, and infused form based on data gathered regarding products available at a retail store located in Seattle⁵⁸. For comparison, national data from the University of Mississippi Potency Monitoring Program is provided⁵⁹. The program is contracted by the National Institute on Drug Abuse (NIDA) to analyze marijuana seized by the Drug Enforcement Administration (DEA) and various local and state law enforcement agencies.

The three common strains of marijuana flower are sativa, indica and hybrids. Sativa is described as uplifting and energizing while indica users report a more sedated experience. A hybrid is a mix of the two strains producing effects dependent upon which is more dominant⁶⁰. These three strains were examined for THC content as available in the inventory of the Seattle retailer and then compared to national marijuana potency averages.

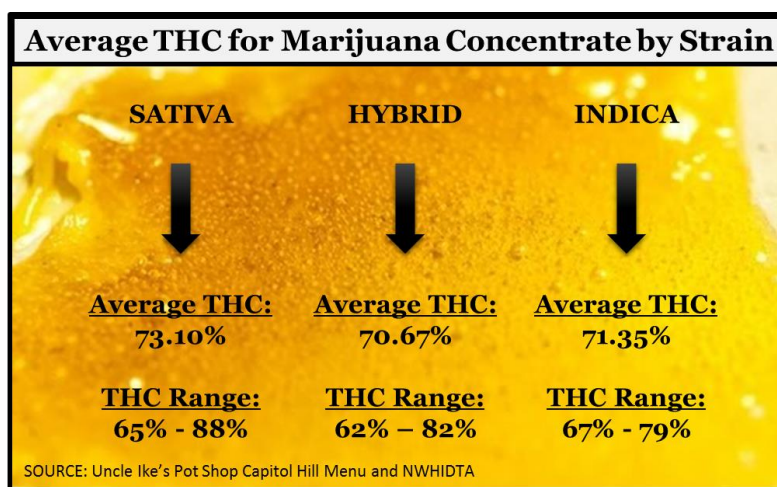
Average THC for Marijuana Flower by Strain		
SATIVA	HYBRID	INDICA
		
Average THC: 22.11%	Average THC: 21.56%	Average THC: 21.19%
THC Range: 11% - 30%	THC Range: 14% - 29%	THC Range: 12% - 29%
SOURCE: Uncle Ike's Pot Shop Capitol Hill Menu and NWHIDTA		

THC content identified during July 2016 at the Seattle retail store found that sativa was at 22.11%, hybrid was at 21.56%, and indica was at 21.19%. All three strains in marijuana flower ranged from a low between 11% and 14% and peak levels between 29% and 30%. The overall average for all three strains was 21.62%. The average cost for one gram of marijuana flower, regardless of strain, during that period was \$16.27 including all applicable taxes.

An increase in average THC concentration per product noted from July 2015 to July 2016 at the retailing location was slight, at just under half a percent. However, the THC ranges per product increased. For sativa, the low dropped 3.5% to represent a new base of 11% THC but increased nearly 2% to a new high range of 30% THC. The hybrid strain increased at both its low end of the range, from 13.03% to 14% THC, and its high range, from 28.30% to 29% THC. Indica increased its base low by half a percent to 12% but saw a larger increase of 2.6% on the high end of the strain's range.



The average THC percentage for useable marijuana based on national samples was 13.18%, compared to the Seattle retail store's average of 21.62%

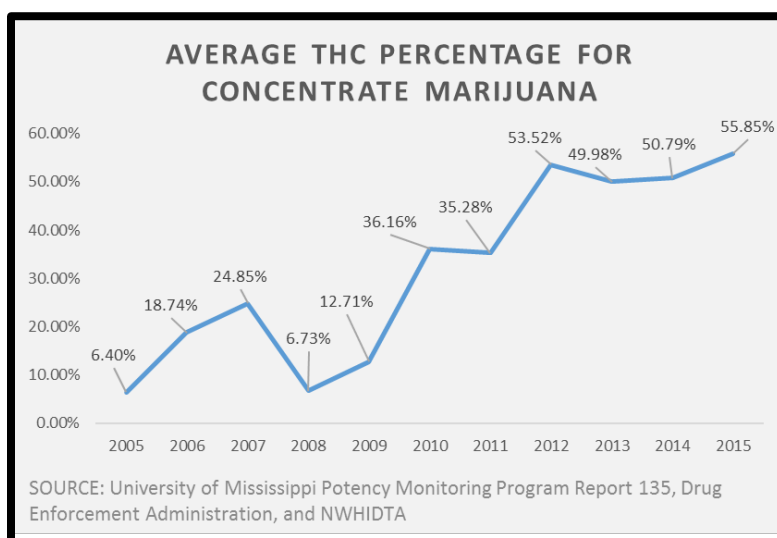


An examination of the potency of marijuana concentrates during July 2016 at the Seattle store found that sativa was the highest at 73.10% THC. Indica was next at 71.35% and hybrid was at 70.67%. The ranges for all three strains had a low between 62% and 67% THC and peak levels between 79% and 88%. The overall average for marijuana concentrates regardless of strain was 71.71%. The price of one gram of marijuana concentrate, regardless of strain, during July was \$43.52 including all applicable taxes.

The change in average THC concentration per product from July 2015 to July 2016 was strain dependent. Average THC for sativa decreased 3.53% while the top end of the range decreased from 92.6% to 88%. Sativa increased at the low end of the range – from 52.8% in 2015 to 65% in 2016.

Hybrid followed in similar fashion with an overall decrease in average THC from 76.74% to 70.67%. The upper end of the range decreased as well from 90.8% to 82%. The sativa strain increased at the lower limit from 49.5% to 62%.

Indica THC concentration decreased slightly from 71.99% in July 2015 to 71.35% in July 2016. The concentration range also changed – a 1.4% increase at the low end to 67% THC and a decrease of 5.6% from 84.6% to 79% THC at the high end.



The average THC percentage for useable marijuana based on national samples was 55.85%, compared to the Seattle store's average of 71.71%.

THC concentration for marijuana-infused products ranges from 10mg to 100mg per product due to serving size rules. During July 2016 at the Seattle store, regardless of strain or product type, the average THC concentration was 47.15mg. In the context of serving size, that is equivalent to just under five servings, each with a content of 10mg. The average cost for a marijuana-infused product in July 2016 was \$18.72 including all applicable taxes.

Medical Marijuana

The medical marijuana market in Washington State has been growing and evolving for nearly 20 years. As no regulation was undertaken by the state throughout that period, the medical marijuana industry was imbued with bad practices, illegal activity and a culture of perceived immunity from legal sanctions. With the passage of Senate Bill 5052, however, specific and detailed rules articulating how medical marijuana production and sales would be integrated into the statewide industry were enacted.

Illicit outdoor marijuana grows have long been cultivated on the east side of Washington State. Due to the sprawling agricultural community and favorable weather, it is an ideal region for marijuana grow operations. Black market growers under the guise of medical marijuana collective gardens thrived.

These sites became known as “plywood” grows across the state. The only restriction imposed on these grows was they were not allowed to be in view of the public. Hence, growers would buy cheap fencing to surround and hide their plants. The examples below show a large grow operation hidden behind plywood⁶¹ ⁶². Other materials used have included tarps and plastic.



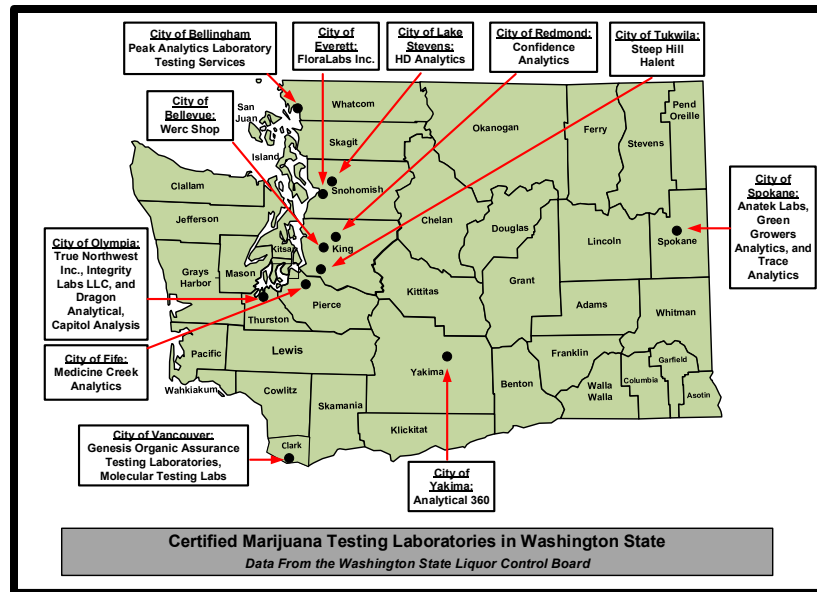
In western Washington illegally operating growers more typically exploited the absence of medical marijuana regulation using indoor venues. Historically, multiple houses were purchased or rented for the sole purpose of converting the homes into production facilities. These homes would be completely modified to accommodate the grow operation including the diversion of electricity and significant remodeling to construct multiple grow rooms. The photos below provide examples of two large indoor marijuana grows⁶³.



Quality Assurance Testing and Pesticides

Initiative 502 includes the requirement that all marijuana must be tested before a product can be sold or transported in the state, now codified as WAC 314-55-102⁶⁴. Quality assurance testing labs must be certified and considered competent by the LCB before their services can be purchased. The Center for Laboratory Sciences located at Columbia Basin College Center (CBC-CLS) was contracted by the LCB to manage the laboratory application process⁶⁵.

The 17 labs that have received approval from the LCB and certification from CBC-CLS to conduct potency analyses are located in 8 counties across the state. The following map shows the locations and names of the testing labs:



One year after commercialization, only 14 labs had been certified. Since that time, three labs ceased marijuana testing and 6 new labs have been certified to serve the regulated market.

Thirteen of the certified labs are located on the western side of the state, in four counties. Thurston County is home to 4 of the 13 businesses. The remaining four labs are located in two eastern counties, with Spokane home to three of the four.

According to WAC 314-55-102, moisture content, potency analysis, foreign matter, microbiological screening, pesticide, chemical residue, metals screening, and residual solvent levels comprise the general quality assurance tests for marijuana flowers and marijuana-infused products. Steep Hill Lab, in coordination with BOTECH Analysis Corporation, established the practice and regulatory guidelines for marijuana sampling.

However, the nature of the product sent to the lab determines the type of testing required. Various levels of testing and types of tests are conducted depending on the marijuana submitted. The three levels of testing are:

- Initial Testing:
 - Product: lots of marijuana flowers that will not be extracted;
 - Tests required:
 - Moisture content;
 - Potency analysis;
 - Foreign matter inspection;
 - Microbiological screening;
 - Mycotoxin screening;
- Intermediate Testing:
 - Products: marijuana mix;
 - Tests required:
 - Moisture content;
 - Potency analysis;
 - Foreign matter inspection;
 - Microbiological screening;

- Mycotoxin screening;
- Product: concentrate or extract (solvent based);
- Tests required:
 - Potency analysis;
 - Mycotoxin screening;
 - Residual solvent test;
- Product: concentrate or extract (CO₂ based), concentrate or extract (ethanol based), concentrate or extract (food grade solvent based), and infused cooking oil or fat in solid form;
- Tests required:
 - Potency analysis;
 - Residual solvent testing;
 - Mycotoxin screening;
- Product: concentrate or extract (non-solvent based)
- Tests required:
 - Potency analysis;
 - Microbiological screening;
 - Mycotoxin screening;
- End Product Testing:
 - Products: infused solid edible, infused liquid, infused topical, marijuana mix, infused marijuana mix, and concentrate or marijuana-infused product for inhalation;
 - Tests required:
 - Potency analysis.

The cost of testing is based on the sample submitted to the lab. The costs for testing conducted by Confidence Analytics are listed in the table on the following page.

If at any level marijuana fails quality assurance testing, the licensee who submitted the sample has three options: destroy the failed item, request a retest, or sell the failed item to a processor for extraction only. If the marijuana product passes all levels of testing, it is then allowed to be transported to other licensed businesses in the state.

When originally approved by the voters in 1998, Initiative 692 was silent on the topic of quality assurance. Nor did Initiative 502 require pesticide testing for any marijuana product. And until the implementation of Senate Bill 5052, no quality assurance testing was required for medical marijuana. Consequently, it is unknown what pesticides, fertilizers, soil amendments, or growing mediums had been applied to medical marijuana since 1998.

The LCB and the Washington State Department of Agriculture (WSDA) now have responsibility for regulating the use of these chemicals. Under WAC 314-55-084, rules have been established addressing pesticides, fertilizers and other growing mediums for the production of marijuana⁶⁶. WSDA refers producers to a 25-page list of approved pesticides for use, with a total of 271 pesticides to choose from.

Pesticides pose a threat not only to the end consumer but to the workers at the growing facilities as well. Little is known about the health risks or the long-term effects of many of the pesticides used and ingested. Under WAC 314-55-087, records must be kept of all pesticide applications including what was used, the amount used per plant, and who applied the chemicals⁶⁷.

Two of Washington State's largest producers were subject to a LCB investigation for illegal use of prohibited pesticides in late 2015⁶⁸. One producer was investigated after multiple LCB enforcement officers discovered illegal pesticides on the premise, including Eagle 20, Forbid 4F, Safari 20, and Hormex Cit B-1 and Growth Hormones. As for the second producer, enforcement officers discovered 17 pesticides on the premises during an inspection including 12 that were determined to be prohibited.

Eagle 20, for example, is a prohibited pesticide because it releases cyanide when heated. The label on the container for Hormex Vit B-1 and Growth Hormones specifically warns against human consumption, that it should not be stored near food or feed, and that it should not be used on plants that are intended to be used for food or feed.

According to one of the producers, the mishap with banned pesticides was due to the incorporation of their medical marijuana plants – which had never been subject to pesticide testing under state law – into their recreational grow rooms after Senate Bill 5052 prompted such integration. During the investigation, this licensee alluded to the fact that several other producers in the state have had products test positive for illegal pesticides.

Both licensees were issued a stop sale order, a \$2,500 fine and a ten-day suspension – although the stop sale announcement was never made to the public.

Marketing

Marijuana Product Packaging and Labeling

The requirements for packaging and labeling marijuana products are listed in WAC 314-55-105⁶⁹. Each type of marijuana product is labeled with a set of specific warnings, and

Confidence Analytics Quality Assurance Testing and Potency Profiling Services		
Type of Sample	Tests	Cost
Flower/Trim Testing	Potency Profile Microbiological Screening Moisture Content Analysis Foreign Matter Inspection	\$60 per sample
Edibles/Fats	Potency Profile Microbiological Screening (if required)	\$85 per sample
Solvent-Based Extract	Potency Profile Residual Solvent Test Terpene Profile Microbiological Screening	\$85 per sample
Natural Extract Testing	Potency Profile Foreign Matter Inspection Microbiological Screening	\$60 per sample
Pesticides	Screening pre-extraction, post-extraction, and final product. Comprehensive screening for pesticides, herbicides, and plant growth regulators.	\$250 per sample
+ Terpenes, + Residual Solvents	Terpenes Profile Residual Solvent Testing *In Addition to Other Tests*	\$25 per sample
Potency Profile	Potency Profile	\$50 per sample
Terpenes, Residual Solvents Only	Terpenes Profile Residual Solvent Testing	\$25 per sample
PG/VG Test	Propylene Glycol (PG) Vegetable Glycerin (VG)	\$40 per sample

SOURCE: Confidence Analytics and NWHIDTA

packaging and labeling is not permitted to be appealing to children in the form of statements or illustrations. The label warnings for useable marijuana include:

- “Warning: this product has intoxicating effects and may be habit forming. Smoking is hazardous to your health.”
- “There may be health risks associated with consumption of this product.”
- “Should not be used by women that are pregnant or breast feeding.”
- “For use only by adults twenty-one and older. Keep out of reach of children.”
- “Marijuana can impair concentration, coordination, and judgment. Do no operate a vehicle or machinery under the influence of this drug.”
- A statement that discloses all pesticides and growing mediums during marijuana production.

Additional information that is required to be labeled on useable marijuana includes: the business or trade name and the identifier of the business that produced, processed, and sold the marijuana; an inventory identification number that matches to the traceability system; the concentration of THC and CBD; the net weight; and the date of harvest. Also, the label must state “this product may be unlawful outside of Washington State”.

The photo to the right features a marijuana vaporizer containing marijuana concentrate for inhalation. The packaging that holds the vaporizer features the required language for the product; the UBI, vendor name, THC concentration, and product warnings are clearly visible.



The warning labels for marijuana concentrates and infused products include:

- “There may be health risks associated with consumption of this product.”
- “This product is infused with marijuana or active compounds of marijuana.”
- “Should not be used by women that are pregnant or breast feeding.”
- “For use only by adults twenty-one and older. Keep out of reach of children.”
- “Products containing marijuana can impair concentration, coordination, and judgment. Do not operate a vehicle or machinery under the influence of this drug.”
- “Caution: when eaten or swallowed, the intoxicating effects of this drug may be delayed by two or more hours.”
- A statement that discloses all pesticides and growing mediums used on the marijuana plants.
- A statement that discloses the extraction method type, use of any solvents, gases or other chemicals or compounds to produce or are added to the extract.

Effective July 2016, the Washington State Poison Center in collaboration with the LCB and stakeholders approved a new warning symbol required to be displayed on all marijuana-infused products. The label was required for all products in retail stores effective February 14, 2017⁷⁰.

Labeling information required to be placed on marijuana concentrates and infused products include: the business or trade name and the identifier of the business who produced, processed, and sold the marijuana; an inventory identification number that matches to the traceability system; the date manufactured; the best by date; the recommended serving size and total number of servings included; the net weight; and a list of ingredients along with major food allergens. In addition, information on the extract that was added to the product including the type of solvent and the extraction process used must be provided, as well as the statement, “This product may be unlawful outside of Washington State”.



Packaging requirements are particularly strict for marijuana-infused products. The packaging must be child resistant in accordance with the Poison Prevention Packaging Act, Title 16, Code of Federal Regulations 1700⁷¹. If there is more than one serving comprising the product, each serving needs to be individually packaged in childproof packaging. If the product is in liquid form and includes more than one serving, the product must come with an appropriate measuring device.



The photo above shows how marijuana-infused product packaging appears in retail locations. The label on the packages clearly provides the vendor name in combination with the product label. Within the colored circles, the THC concentration per serving is highlighted – the larger packages contain six servings, each infused with five milligrams of THC. The mints located at the bottom of the photo include the same information in a different marketing design. Each of the examples shown also includes all state-required information.

No marijuana product in the state of Washington may be labeled “organic” unless so verified by the Department of Agriculture in accordance with the Organic Foods Production Act.

Now that medical marijuana has been integrated into the regulated industry, the state has adopted production rules applying to all marijuana products. The Washington State Department of Health (DOH) is now responsible for approving, based on available research and data, medical-grade marijuana products for patients throughout the state.

DOH adopted definitions for products that include 'high THC', 'high CBD', and 'general use' marijuana. The products' concentration of THC and CBD as well as the type of product itself determines which label is assigned. Examples include⁷²:



General Use Compliant marijuana products that are defined as containing ten milligrams of THC per serving and a maximum of 100 milligrams per product. These products may be purchased by adults over 21 years of age or qualifying patients over the age of 18 who possess a valid recognition card. These products may be sold at both retailers and retailers with a medical marijuana endorsement.



High CBD Compliant marijuana products include marijuana concentrates/extracts, infused-edible products, and infused-topical products; useable marijuana or plant material for smoking is not considered high CBD compliant. The THC/CBD ratio for extracts requires 25 times more CBD concentration by weight and not more than two percent THC. Infused-edible products must have at least five times more CBD per serving by weight for solids of volume for liquids with not more than 2mg of THC. Infused-topicals are very similar, requiring at least five times more CBD concentration than THC concentration. These products may be purchased by adults over 21 years of age or qualifying patients over the age of 18 who possess a valid recognition card. These products may be sold at both retailers and retailers with a medical marijuana endorsement.



High THC Compliant marijuana products are limited to an exclusive product list that includes capsules and tablets, tinctures, transdermal patches and suppositories. These products may contain up to 50mg per serving or application, with not more than ten servings or applications per unit; the product may not exceed 500mg. in total. These products can be purchased by qualifying patients over the age of 18 who possess a valid recognition card and designated providers who possess a valid recognition card. Products under this category are sold only at retailers with a medical marijuana endorsement

Marijuana Business Advertising

WAC 314-55-155 addresses restrictions and rules regarding the advertising in which businesses may engage including labeling, location of advertisements, types of marketing events, and warning labels⁷³. As with labeling, no advertisements may be appealing to children through statements or illustrations. The advertising may not be false or misleading, promote overconsumption, or purport that marijuana use has curative or therapeutic effects.

Advertisements are not allowed within 1,000ft of a school, a playground, a recreation center or facility, a childcare center, a public park, a library, or a game arcade that is not restricted to those aged 21 or older, on a public transit vehicle or public transit shelter, or on publicly-owned or operated property.

All advertisements must include these warnings⁷⁴:

- “Warning: this product has intoxicating effects and may be habit forming. Smoking is hazardous to your health.”
- “There may be health risks associated with consumption of this product.”
- “Should not be used by women that are pregnant or breast feeding.”
- “For use only by adults twenty-one and older. Keep out of reach of children.”
- “Marijuana can impair concentration, coordination, and judgment. Do no operate a vehicle or machinery under the influence of this drug.”
- A statement that discloses all pesticides and growing mediums used during marijuana production.

Online advertising platforms have proliferated within the marijuana industry. Licensed businesses are allowed to host a website to advertise but online sales are not permitted. Social media in the form of Twitter, Instagram, and Facebook may all be used as advertising platforms as well. However, businesses are directed to be cautious not to appeal to viewers under 21. There are also no limits as to what can be shared online but advertising may not contain statements or illustrations that are misleading, encourage heavy marijuana use, promote its therapeutic effects, or appeal to those under the age of 21.

Traditional advertising is regulated as well. Businesses may place advertisements on shopping bags, flyers, and drug paraphernalia with their logo or tradename. Newspaper and magazine advertising is also permitted, with no limitations in place for restricted print publication companies. Businesses are allowed to place flyers in publications that are delivered to residences. The upper right photo provides an example of marijuana advertisements published in a Seattle newspaper⁷⁵.

Billboards may be utilized for advertising with the only restriction prohibiting the location of a billboard within 1,000ft of a protected area,



such as a school. The lower right photo on the previous page shows a billboard advertising a marijuana retailer located on the eastern side of the state in the city of Cashmere⁷⁶.

With the passage of House Bill 2136, additional signage was granted to licensees. As previously passed in Initiative 502, licensed locations were allowed one 1,600 square-inch sign attached directly to the business. Now, licensed locations are permitted to have two such signs.

Product Advertising

The WAC that addresses packaging, labeling, and advertising puts restrictions on statements referring to marijuana products: they cannot be misleading, promote over consumption, represent the use of marijuana as having curative or therapeutic effects, or be appealing to anyone under the age of 21.

The following are descriptions of various useable marijuana products from a local marijuana producer/processor's online menu⁷⁷:

- "...rich berry taste and a giggly euphoric high..."
- "...enhances mental clarity and puts a spring in your step, all the while leaving you with a relaxed, full body sensation."
- "...boosts your energy without overstimulating the senses. Great for creativity and activities"
- "This cerebral clear-headed high will help you to get happy and stay focused."
- "...wonderful daytime high..."
- "...initial soaring sensation, turning to an upbeat and fun attitude. Then it finishes with a relaxing and meditative mindset, making it the perfect strain for an all-around cannabis experience."

The following are descriptions of various marijuana extract vaporizer products from a local marijuana producer/processor⁷⁸:

- "Berry Crunch: Sweet and slightly tart"
- "Strawberries and Cream: Perfectly paired⁷⁹"
- "Banana Split: Choco-banana awesomeness"
- "Grape Soda: A fizzy, bubbly, grape delight"
- "Blue Raspberry Cotton Candy: Rich berry flavor"
- "Pumpkin Spice Latte: Your favorite holiday flavor"
- "Fruit Zebra Gum: Mouthwatering burst"
- "Bubble Gum: That classic Flavor"



Before the implementation of Senate Bill 5052, no regulations had been established with regard to advertising for medical marijuana products – sole discretion was left to the collective garden or dispensary. Some of these entities opted to package marijuana products with

tradenames, logos, and THC content but, due to the absence of industry oversight over the course of 20 years, the legitimacy of the products came to be questioned.

Just as recreational marijuana processors must follow state rules regarding product statements, the same is now true for medical marijuana products. Yet, descriptions referring to high THC, high CBD, or general use products found in online platforms – which are apparently subject to less regulatory scrutiny than other media -- incorporate non-permitted language. Some labeling has also been found to include language that violates WAC restrictions. Common words and phrases have been routinely used to promote the curative properties and therapeutic effects said to be found in some products.

The following are descriptions of various useable concentrates and infused-products marketed as medical marijuana by a local marijuana producer/processor⁸⁰:

- “...delivers the therapeutic effects of CBD almost instantaneously, and does not impart any psychoactive effects.”
- “...ideal for providing CBD therapy with a tranquil high.”
- “CBD is shown to have powerful anti-inflammatory properties, and this balm makes it possible to target specific body parts.”

These statements generally do not appear on the actual packaging for marijuana products although such instances have occurred. Given the proliferation of social media and online advertising, these messages are one click away from influencing viewers of any age.

Licensing Violations

Group One – Public Safety

Public safety violations are considered to be the most serious infractions addressed in the WAC. The sanctions imposed for these violations were established to penalize businesses that operate without regard for the safety of customers or communities. Examples of such violations are sales or service to a minor; employing a person under the legal age; opening and/or consuming marijuana in a licensed retail premise on the part of a licensee and/or employee; and permitting or engaging in criminal conduct. The full list can be found in WAC 314-55-520⁸¹.

The penalties imposed for violations involving sales to a minor, consumption on the licensed retail premises, and involvement with criminal conduct are a ten-day suspension or a monetary fine for the first occurrence; a 30-day suspension for a second occurrence; and cancellation of a license for a third. If a licensee is found to be employing a person under 21 years of age, the penalty is a \$1,000 monetary fine per incident.

Group Two – Regulatory

These violations involve the general regulation and administration of licensed recreational businesses. Examples are violations involving advertising statements or

illustrations; improper record keeping; failure to submit monthly tax reports and/or payments; failure to utilize and/or maintain traceability; and sales of unauthorized products at a retail location. The full list can be found in WAC 314-55-525⁸².

The penalty imposed for a first violation involving statements or illustrations used in advertising, improper record keeping, failing to submit monthly reports or payments, and failure to use the traceability system entails a 5-day suspension or a \$500 monetary fine. The second violation results in a ten-day suspension or a monetary fine, followed by a 30-day suspension on the occurrence of a third violation. Following a fourth violation the license will be cancelled. If a retailer is found to be selling unauthorized products, a \$1,000 monetary fine can be imposed for each transaction.

Group Three – Licensing

The full list of these violations is detailed in WAC 314-55-530, involving licensing requirements, license clarification, and special restrictions⁸³. Examples of violations include issues involving true party of interest, failure to furnish required documents, and violating a LCB-approved operating plan.

At the first violation regarding the true party of interest and/or failure to furnish required documents, the license will be cancelled. For violating a board-approved operating plan, the penalty imposed at the first offense is a five-day suspension or a monetary fine. The second occurrence will result in a ten-day suspension or a \$1,500 monetary fine followed by a 30-day suspension for a third violation. If a fourth instance occurs, the license will be cancelled.

Group Four – Producer

The violations defined in this group pertain to marijuana producers. They involve the manufacturing, supply, and/or distribution of marijuana by licensed businesses as well as violations involving prohibited practices between a producer and a retailer. The full list can be found in WAC 314-55-535⁸⁴. Examples include failure to utilize and/or maintain traceability, improper record keeping, and failure to maintain required security alarm and surveillance systems.

The penalties imposed are the same for each violation occurring in this category. For the first offense, licensees face a \$2,500 monetary fine. The second occurrence will result in a \$5,000 monetary fine and destruction of 25% of harvestable plants. The third penalty is a \$15,000 monetary fine and destruction of 50% of harvestable plants. By the fourth violation, the penalty will entail a cancelled license.

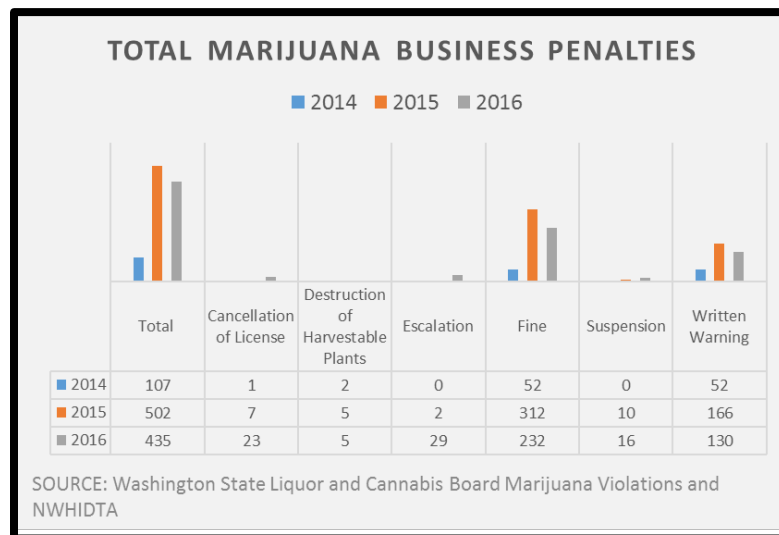
Group Five – License Violations

These violations involve marijuana transportation licenses. The full list can be found in WAC 314-55-537⁸⁵. Examples include transportation of marijuana in an unauthorized vehicle, pickup, unloading, or delivery at an unauthorized location, and transportation of marijuana outside of Washington State boundaries.

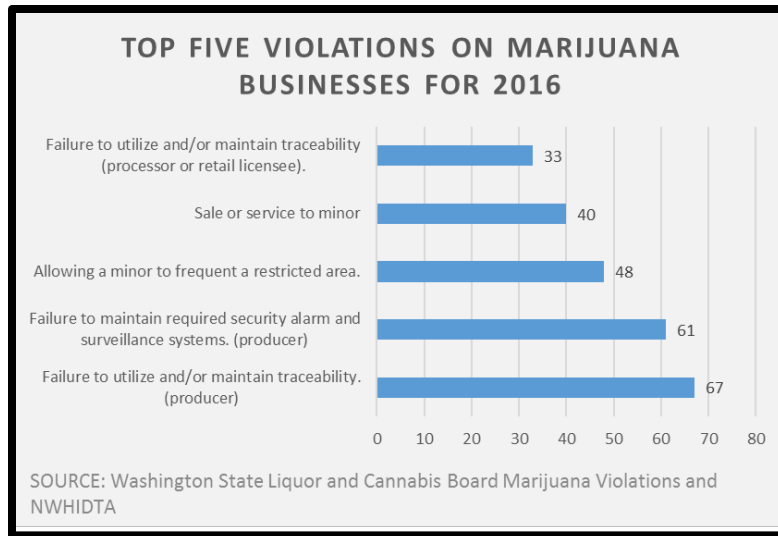
Transporting marijuana in an unauthorized vehicle will result in a penalty of either a five-day suspension or a \$2,500 monetary option for the first violation, a 30-day suspension for the second violation, and if a third violation occurs the license will be cancelled. Violations involving pickup, unloading, or delivery at an unauthorized location will result in a 30-day suspension for a first violation, and cancellation of the license following a second violation. Transportation outside of Washington State boundaries will result in a license cancellation at the first violation.

Current Violations

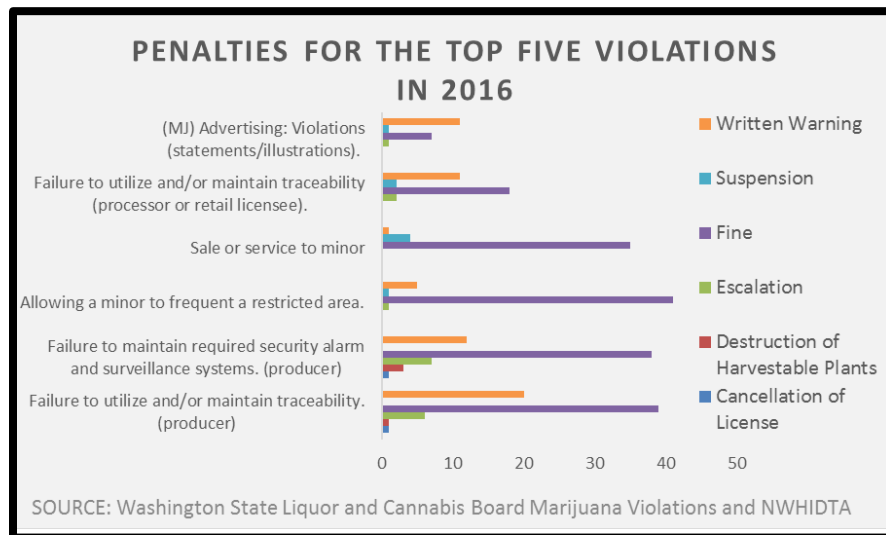
Data may be obtained from the LCB that enumerate the total violations and penalties imposed on licensed businesses⁸⁶. The LCB enforcement department is responsible for conducting compliance checks, inspections, following up on complaint investigations, and verifying license site locations. The enforcement division did not start conducting compliance checks on licensed businesses until May 2015, nine months after commercialization had been implemented⁸⁷.



Since the commercialization of marijuana in July 2014, over 1,044 violations have been issued to producers, processors, and retailers across the state. The majority of the sanctions have been in the form of fines: 48.5% in 2014, 62.1% in 2015, and 53.3% in 2016. The balance of the sanctions is comprised of written violations: 48.5% in 2014, 33% in 2015, and 29.8% in 2016. The remaining sanctions – cancellation of licenses, destruction of harvestable plants, escalation, and suspension – round out the yearly totals as follow: .02% in 2014, .04% in 2014, and 1.6% in 2016.



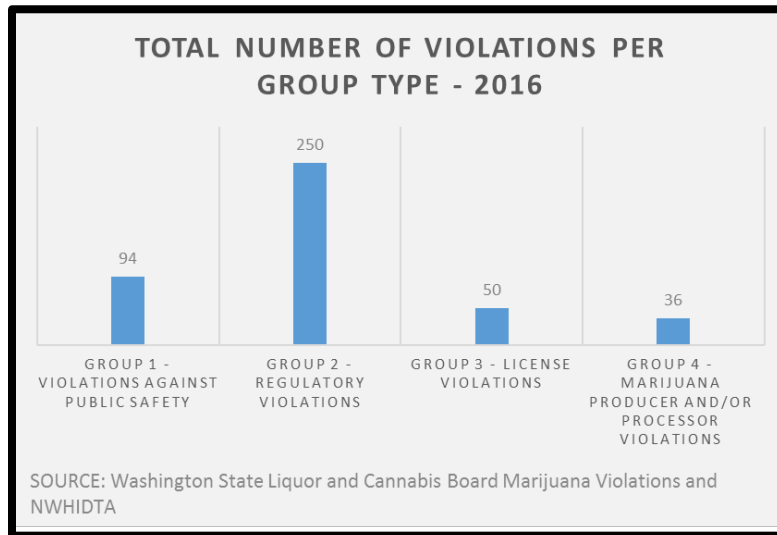
The top five violation categories were allowing a minor to frequent a restricted area; sale or service to a minor; failure to maintain a required security alarm and surveillance system for producers; and failure to use the traceability system by all three license types: producers, processors, and retailers.



The penalties for the most common violations are depicted above. Eight violators had their licenses suspended with penalties imposed for minor-related violations, advertising violations, and failures involving the traceability system. Two licenses were cancelled due to failure to utilize the traceability system and for not maintaining required security alarm and surveillance systems. A penalty involving the destruction of harvestable plants was imposed on four licenses. The majority of sanctions were executed by means of a fine or written violation. Specifically, 35 of the 40 violations involving sales or service to a minor resulted in the imposition of a fine.

The violation that has been committed most frequently since commercialization was implemented involves a failure to maintain and/or utilize traceability, the foundation on which

the recreational and medical regulatory system is built. There is no known information at this time regarding the scope or impacts on marijuana inventory due to these violations.



The chart above shows the total number of violations per category. For group one, 93.6% of the violations involved minors. 40% of the violations committed in group two were related to the traceability system and 32% of the violations committed in group three involved true party of interest. Finally, 25% of the violations in group four were imposed on licensees found to be using unauthorized pesticides, soil amendments, fertilizers, or other crop production aids.

Section 3: Youth Impacts

Introduction

States that have legalized recreational marijuana must attend to an important admonition to keep the drug away from those under the legal age. The following subsections will examine youth consumption, its impact on schools, and treatment admission rates for marijuana use disorder.

Various reports and surveys from across the nation and Washington State have been published on this topic including:

- Healthy Youth Survey: statewide bi-annual survey administered to 6th, 8th, 10th, and 12th grade students encompassing all school districts and counties across Washington State;
- National Survey on Drug Use and Health (NSDUH): annual nationwide household survey funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) ;
- Office of Superintendent of Public Instruction: primary authority over Washington State's 295 public school districts;
- Poison Center: statewide call center that provides callers with service referrals and assistance in cases of poisonous, hazardous, and toxic exposures;
- System for Communicating Outcomes, Performance and Evaluation (SCOPE): a web-based database for substance abuse and mental health professionals administered by the Washington State Division of Behavioral Health and Recovery.

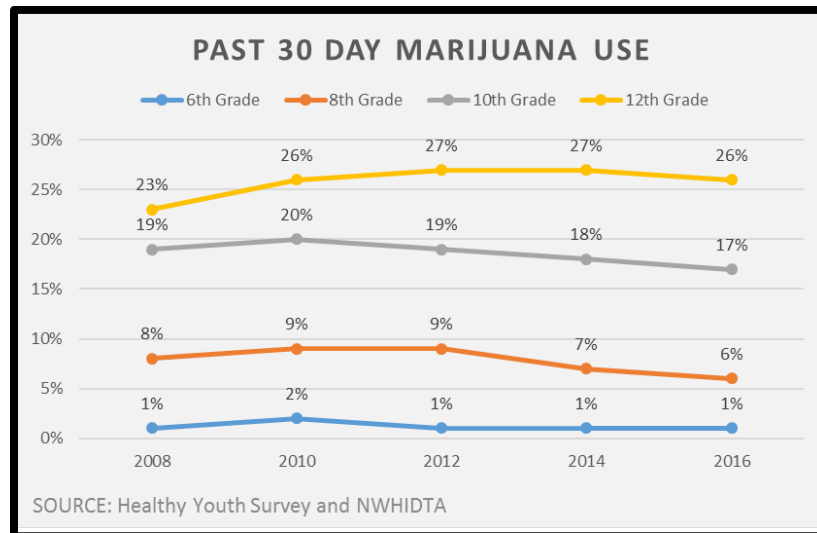
Data Summary:

- One in five 10th grade students and one in four 12th grade students reported riding with a driver who had used marijuana;
- One in six of 12th grade students admitted to driving a vehicle within three hours of consuming marijuana – and one in ten 10th grade students;
- During the 2014-2015 school year, 60% of statewide student expulsions and 49% of suspensions related to substance abuse specifically involved marijuana;
- In 2016, 73% of the Poison Center calls regarding children under five years of age specifically referred to children one to three years old;
- In 2014, 40% of statewide Poison Center calls pertained to youth under the age of 20;
- From 2014 to 2016, calls received by the Poison Center regarding marijuana-infused products increased 36% and calls involving marijuana oil increased 105%;
- 71% of treatment admissions for youth during the first quarter of 2016 were for marijuana use disorder.

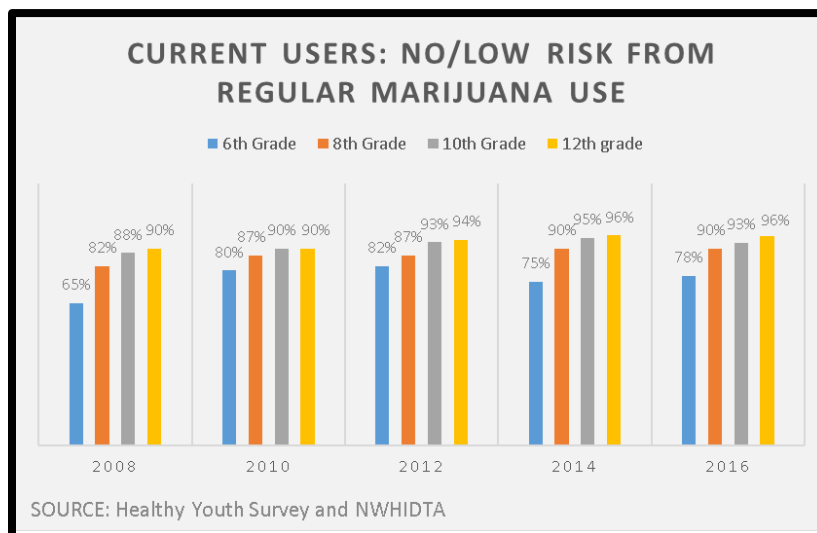
Consumption and Use

Healthy Youth Survey

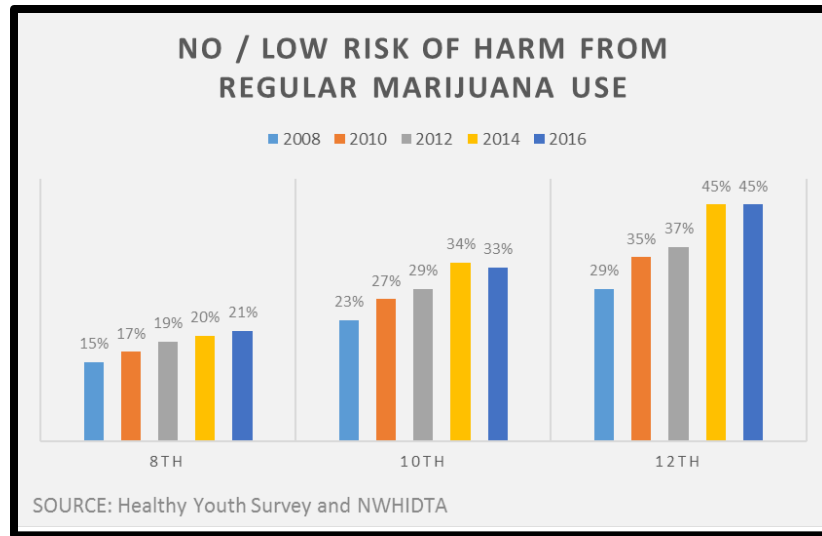
When analyzing data gathered by the Healthy Youth Survey, using once or more during the past 30 days denotes current marijuana use among students⁸⁸.



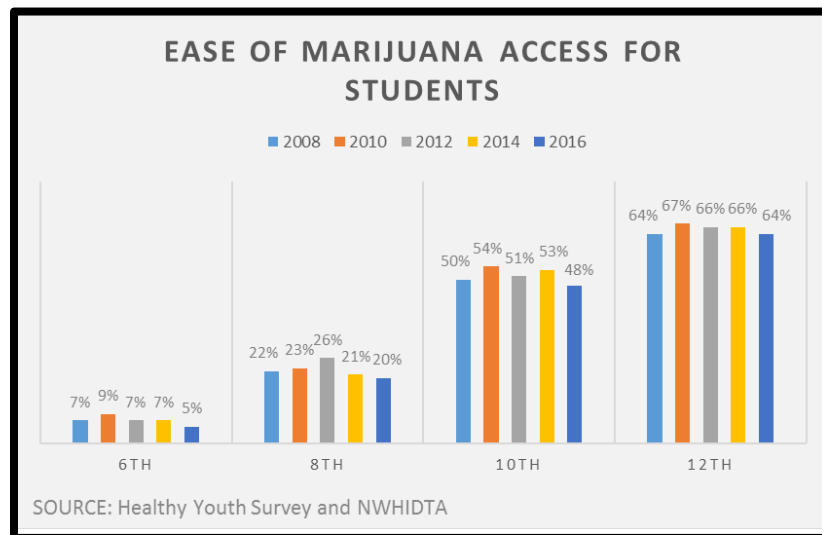
The graph above shows the rates of marijuana use reported by students in each of the past five surveys. There was a decline from 2012 to 2014 for 8th and 10th grade students while use in grades 6 and 12 were unchanged. For 12th grade students, over a quarter reported current marijuana use from 2010 through 2016. The 1% decrease from 2014 to 2016 was statistically insignificant⁸⁹.



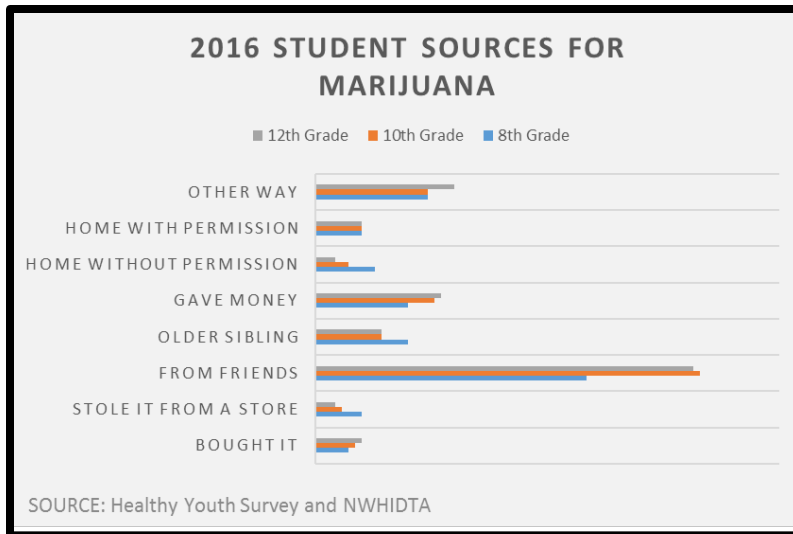
Users of marijuana, regardless of grade level, have consistently perceived very little risk of harm from regular use since the 2008 survey. By 2016, over 95% of 10th and 12th grade users reported no perceived harm; 8th grade students reported no risk at the rate of 90% and 6th graders reported no risk at the rate of 78%.



For all students, regardless of personal use, the perception of harm has been declining. Grades eight, ten, and twelve have been reporting this trend since 2008.



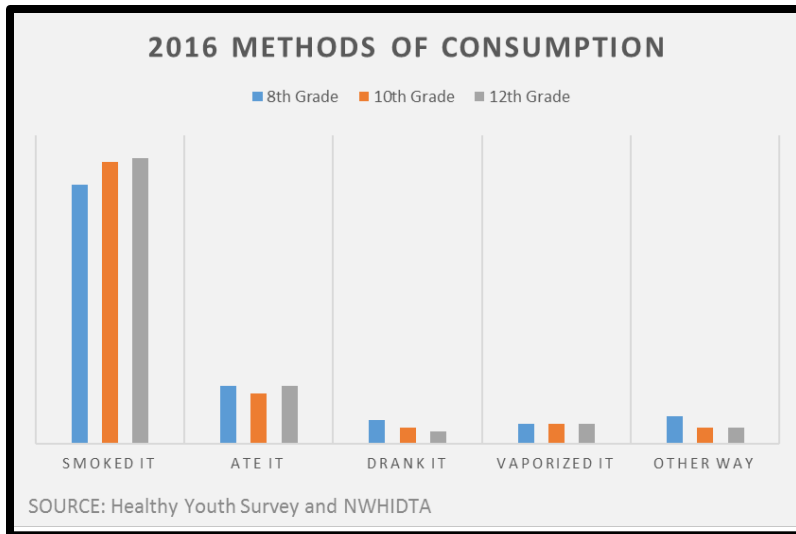
Data gathered from 2008 to 2014 shows very minimal change regarding the ease with which marijuana can be accessed by students. 2016 data interestingly shows a decline in that perception. According to the survey, 6th graders reported a 2% decrease in ease of access, 8th graders reported a 1% decrease, 10th grade students reported a 5% decrease and students in 12th grade reported a 2% decrease in ease of access.



The survey item inquiring as to where students obtained their marijuana was introduced into the survey in 2014 and repeated in 2016. As was the case with the 2014 survey, an overwhelming percentage of students received the drug from friends; however, these interactions were reported to have decreased. Students in 8th grade reported a 4% decrease, a 3% decrease was reported by 10th graders, and a 6% decrease was reported by 12th graders. A similar change across all cohorts regarding access points had to do with students who reported purchasing marijuana themselves. Responses revealed a decrease of 6% for 8th graders, 3% for 10th graders, and 1% for 12th grade students.

The source that increased for all grades was older siblings, with a 3% increase for 6th graders, 1% for 10th graders, and 3% for 12th graders. Additionally, the 2016 data revealed an increase in the rate of students obtaining marijuana from home without permission. Students in 6th grade reported a 3% increase and a 1% increase was reported for both 10th and 12th grade students.

It is important to note the unknown access points that students in 8th, 10th, and 12th grade reported in the 'other way' category. Use of this 'other way' access point did not change for 8th grade students but an increase was shown for 10th and 12th graders. From 2014 to 2016, students in 10th grade reported an increase of 1% and for those students in 12th grade, it increased 3%.



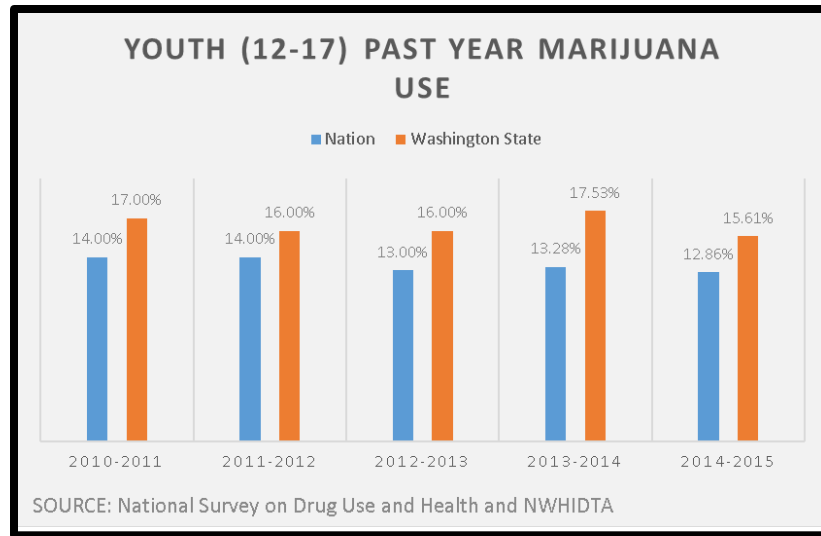
In 2014, students were first asked to report on their method of consumption. The vast majority of students continue to smoke marijuana: 67% of 8th graders, 73% of 10th graders, and 74% of 12th graders. Oral ingestion was reported as the second most common route of administration: 15% of 8th graders, 13% of 10th graders, and 15% of 12th graders.

Students were also asked about their driving behaviors in association with marijuana use. One in five 10th grade students reported riding with a driver who had used marijuana. For 12th grade students, it was one in four. In addition, one in ten 10th grade students and one in six 12th grade students admitted to driving within three hours after using marijuana. In comparison, 5.4% of 10th grade students reported driving after alcohol consumption as did 9.5% of 12th grade students.

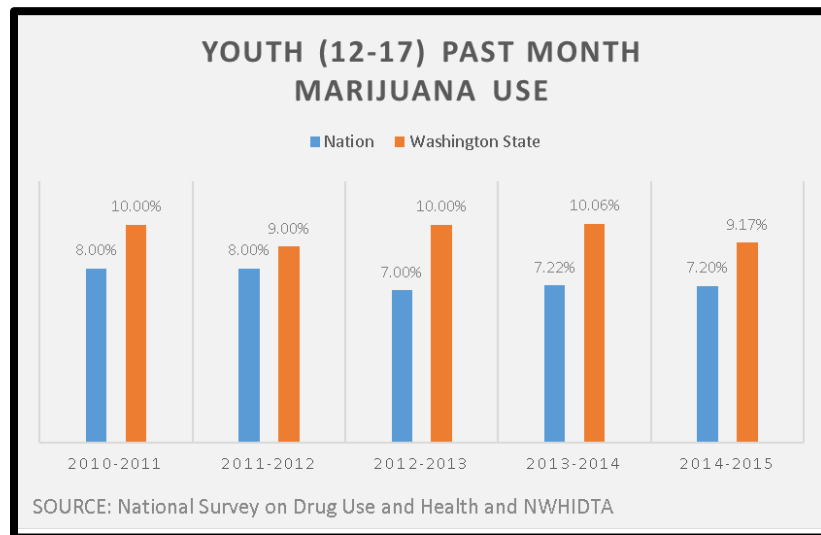
Conclusions that may be drawn from the 2016 survey include a continuing, relatively stable rate of marijuana use but a higher reported rate of driving a vehicle under the influence of marijuana since legalization. A common assumption would be that youth use would have increased due to an increased accessibility and availability of marijuana, but legalization has had no such major impact. While tobacco and alcohol use rates have been dropping consistently in recent years, marijuana use has remained unchanged.

National Survey on Drug Use and Health

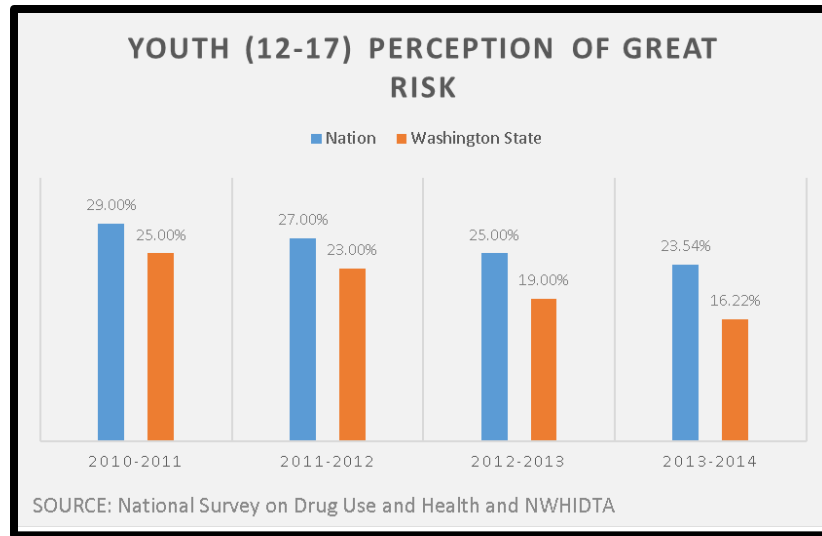
The data depicted in the following graphs compare marijuana use among Washington State youth to that of youth throughout the United States. The youth reporting these data were 12 to 17 years of age. The data is derived from 2010 through 2015. It should be noted that marijuana was legalized in Washington State in 2012 and that all of this data was collected before commercialization subsequently occurred in the state.



The preceding graph shows the percentage of past-year marijuana use among 12 to 17 year olds across the nation and in Washington State. Since the 2010-2011 survey, past-year marijuana use among youth in Washington State has been over 2.5% higher than the national average.



The graph above shows past-month marijuana use among youth throughout the nation and in Washington State. Again, Washington State youth have remained constantly above the national average, ranging from 1% to 3% higher.



For this age group, the national rate for endorsing a perception of great risk from smoking marijuana once a month was much higher than that for Washington State. It should be noted that the perception of great risk from smoking marijuana once a month has been declining for youth throughout the nation and in Washington State since 2010-2011.

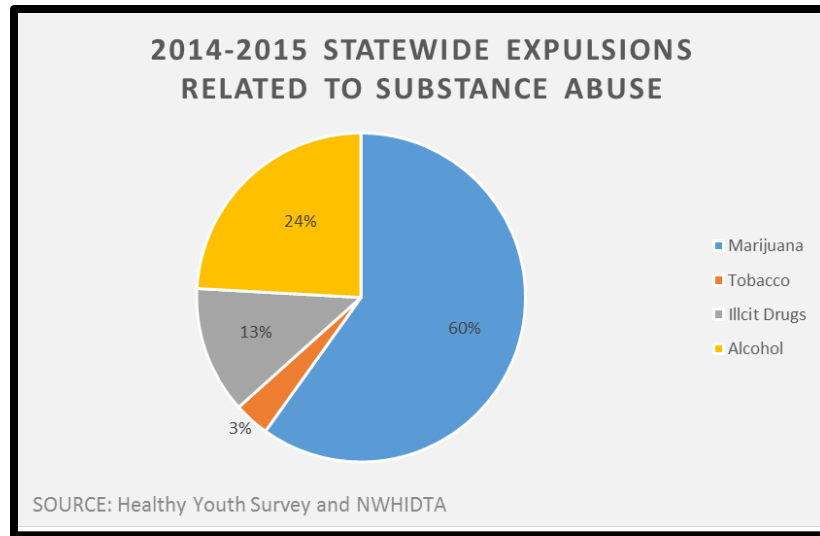
Schools

Office of the Superintendent of Public Instruction

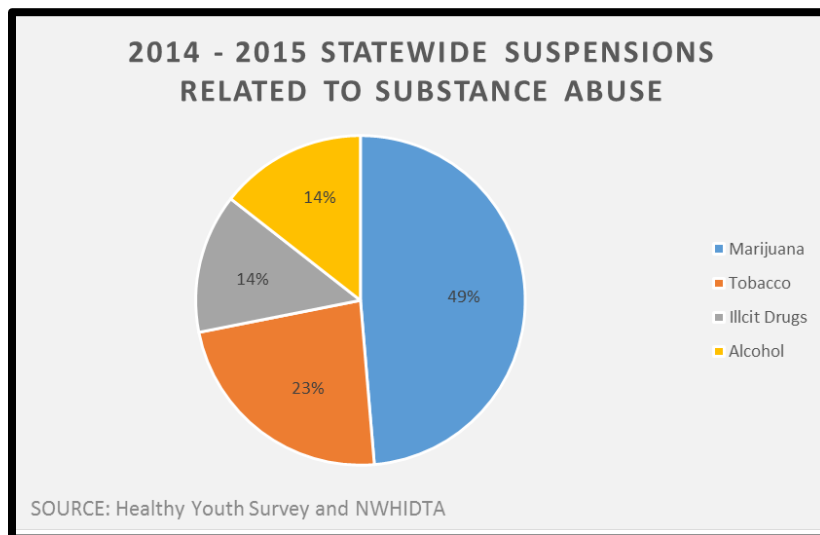
On an annual basis, the Washington State Office of the Superintendent of Public Instruction (OSPI) submits statewide suspension and expulsion data to the United States Department of Education in the form of a Behavior Report⁹⁰. In addition to the numbers submitted, supplemental information identifies the school district and the violation committed. Due to differing disciplinary policies across the state, the information is district-specific and comparisons between districts require additional research.

The behaviors involving marijuana include: unlawful use; cultivation; distribution; sale; solicitation; purchase; possession; transportation of cannabis or violation of district drug policy; and suspicion of being under the influence.

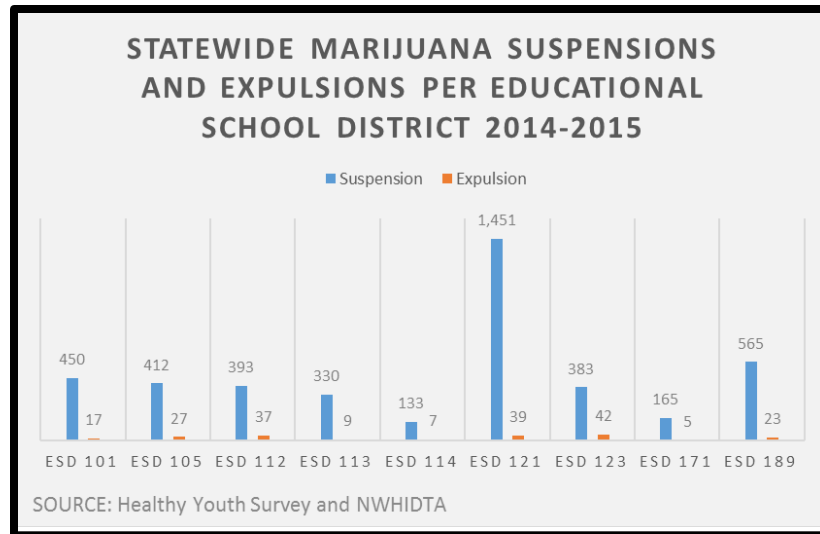
The 2013-2014 Behavior Report was the first report compiled since legalization that separated marijuana from a generic illicit drug category. The following graph depicts the percentage of expulsions associated with the use of a specific drug during the 2014-2015 school year. Data regarding bullying, fighting and other behaviors are not included.



According to the 2014-2015 OSPI Behavior Report, 60% of statewide student expulsions involved marijuana within the substance abuse category. This is an increase of 12% from the previous school year (48%).



According to the 2014-2015 OSPI: Behavior Report, 49% of the suspensions related to substance abuse were associated with marijuana. This is an increase of 6% from the previous school year (43%).



There are nine educational service districts (ESDs) in the state of Washington. They are: ESD 101-Spokane; ESD-105-Yakima; ESD 112-Vancouver; ESD 113-Tumwater; ESD 114-Bremerton (Olympic); ESD 121-Renton (Puget Sound); ESD 123-Pasco; ESD 171-Wenatchee (North Central); and ESD 189-Anacortes (Northwest).

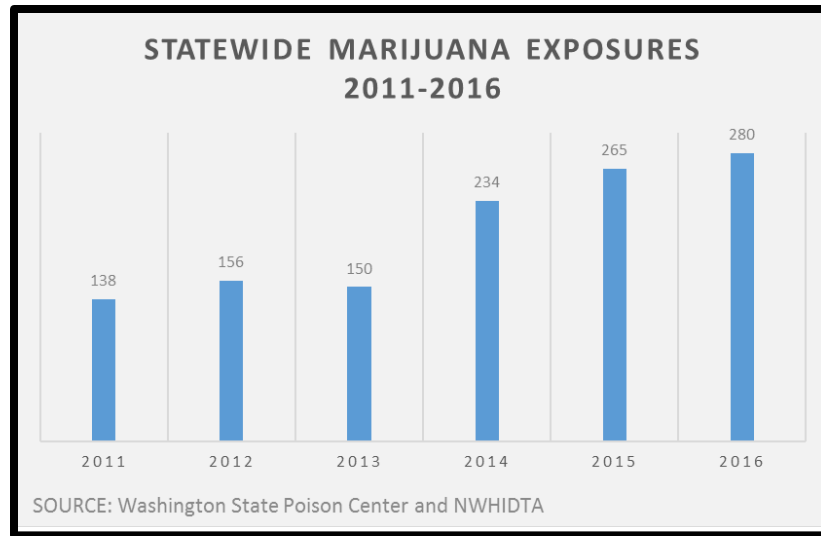
The educational services districts with the highest reported suspensions related to marijuana were ESD 121-Renton (1,451), ESD 189-Anacortes (565), and ESD 101-Spokane (450). For expulsions, ESD 123-Pasco reported the highest number with 42, followed by ESD 121-Renton with 39, and ESD 112-Vancouver with 37.

Depending upon the disciplinary policies and actions of the school district, consequences and sanctions imposed on students vary. A comparison of 2013-2014 and 2014-2015 behavior reports noted substantial changes: ESD 112, ESD 121, and ESD 123 all saw dramatic increases in suspensions – 44.48%, 104.65%, and 199.21% increases respectively. The remaining six ESD's had notable decreases in suspensions ranging from 2.9% to 47.67%.

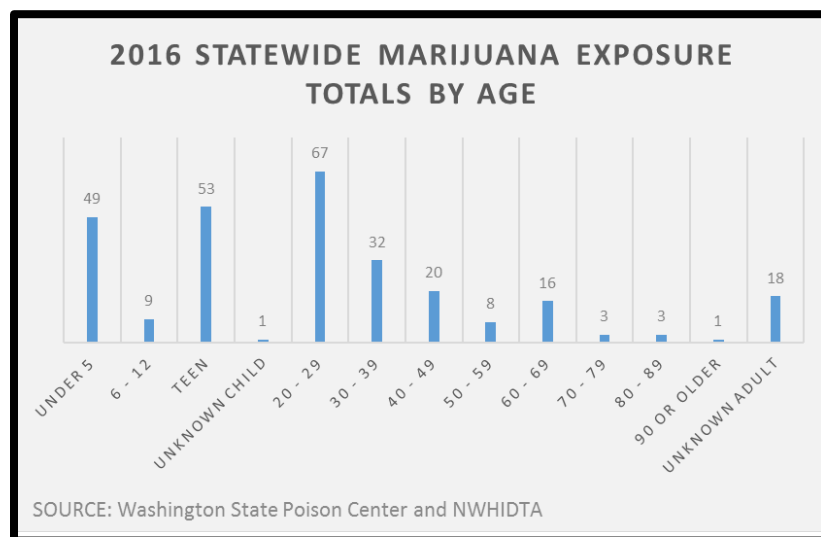
Abuse and Treatment

Washington State Poison Center

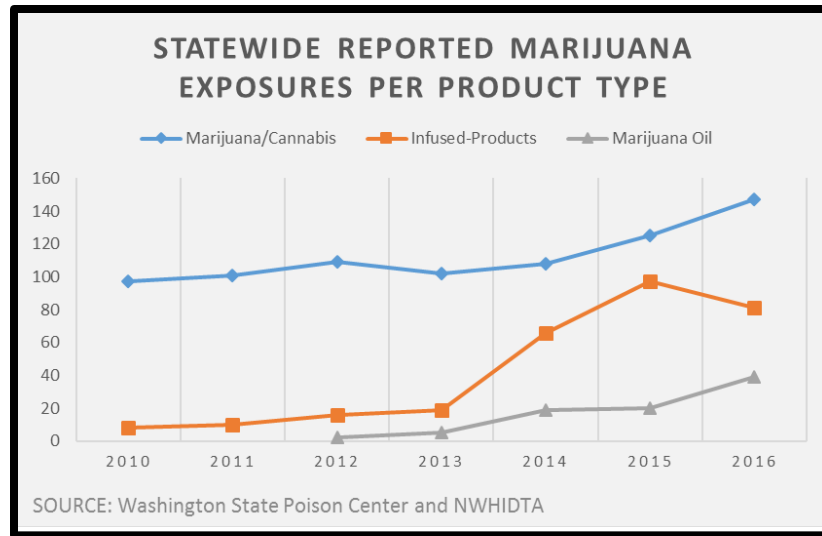
The Washington State Poison Center receives calls from throughout the community that address a range of incidents from accidental exposures and ingestions to potential overdoses involving an array of substances. The data collected by the agency reflects information taken directly from callers⁹¹. The data shown below was obtained from callers who identified marijuana as their cause for concern to the Poison Center.



Statewide marijuana calls to the Poison Center have been increasing since 2006. From 2012 to 2016, calls increased by 79.48%. Exposures increased 19.65% from the time of marijuana commercialization in 2014 to 2016.



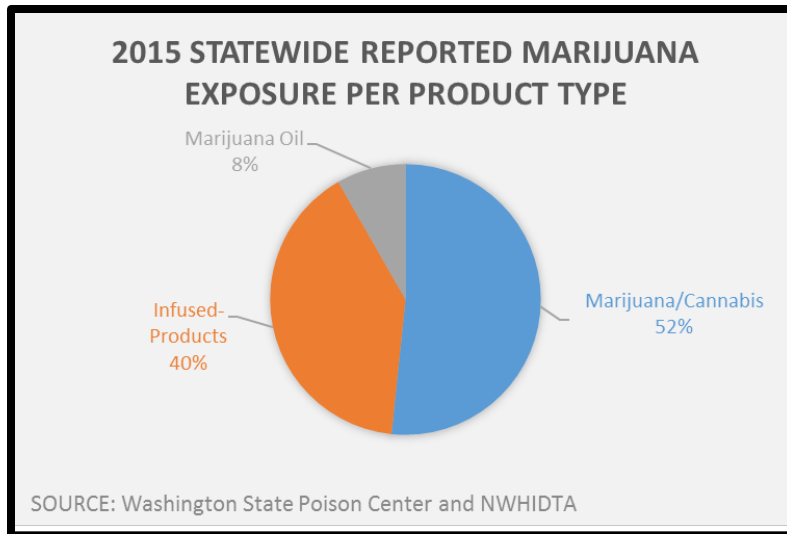
Of the marijuana calls answered by the Poison Center in 2016, youth under the age of 20 accounted for almost 40% of all calls. According to the 2016 Annual Cannabis Toxic Trends Report, 42% of the calls reported were for persons aged 13 to 29. Additionally, among exposures related to children under the age of five, 73% involved children one to three years of age. The counties with the highest reported number of exposures for 2015 remained in the top four for 2016: King; Spokane; Snohomish; and Pierce⁹².



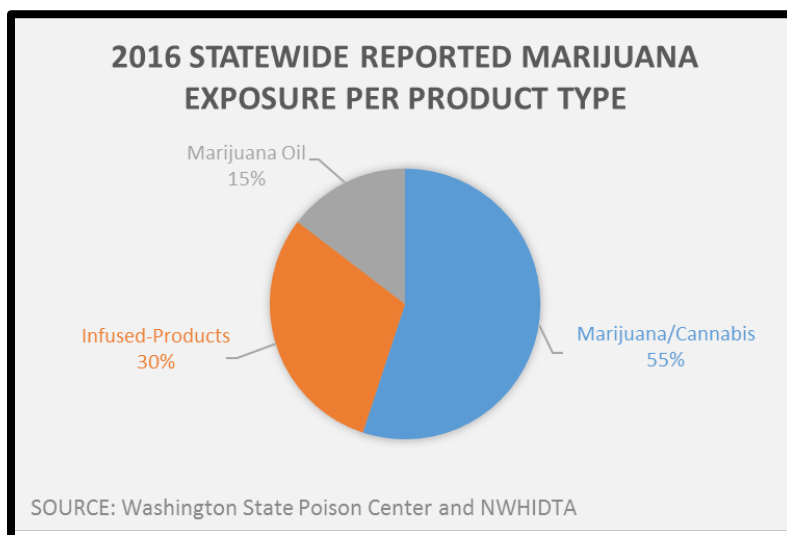
All the information gathered by the Poison Center is documented exactly as stated by the caller. The graph above quantifies the three categories involving calls related to marijuana:

- Marijuana/cannabis:
 - Pot, weed, cannabis, cannabinoid, THC, medical marijuana, and marijuana cigarettes;
- Infused-products:
 - Brownies with marijuana, marijuana candy, candy bar containing marijuana, “Cheeba Chew”, medical marijuana brownie, marijuana butter, marijuana chocolate, marijuana cookie, marijuana edible in cupcakes, marijuana lotion, marijuana rice krispy treat, medical marijuana liquid, THC banana bread, and beverage containing marijuana;
- Marijuana oil:
 - BHO (butane hash-oil), cannabis oil, hash oil, dabs, marijuana oil, and rick simpson oil.

As indicated, calls related to the marijuana/cannabis category have remained relatively constant over time. However, the increases in calls involving infused-products and marijuana oil are of concern. Since commercialization in 2014, calls related to infused-products increased 36.11% and calls related to marijuana oil increased 105% over the course of two years.



Of the total calls reported in 2015, 52% were in the marijuana/cannabis category, 40% were associated with infused-products, and 8% were related to marijuana oil.



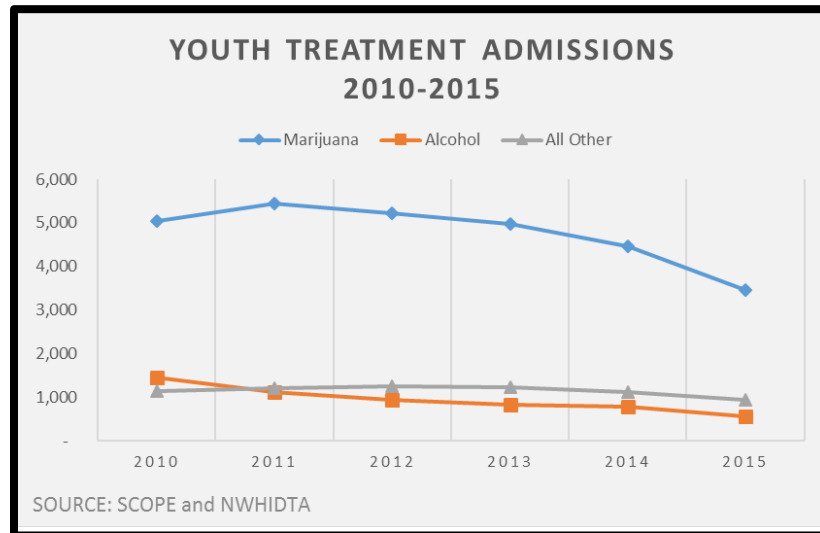
Of the total calls reported in 2016, 55% were in the marijuana/cannabis category, 30% were associated with infused-products, and 15% were related to marijuana oil.

In comparison to the 2015 data, callers reporting exposures to infused-products decreased 10% whereas exposures related to marijuana/cannabis increased 3% and marijuana oil increased the most at 7%.

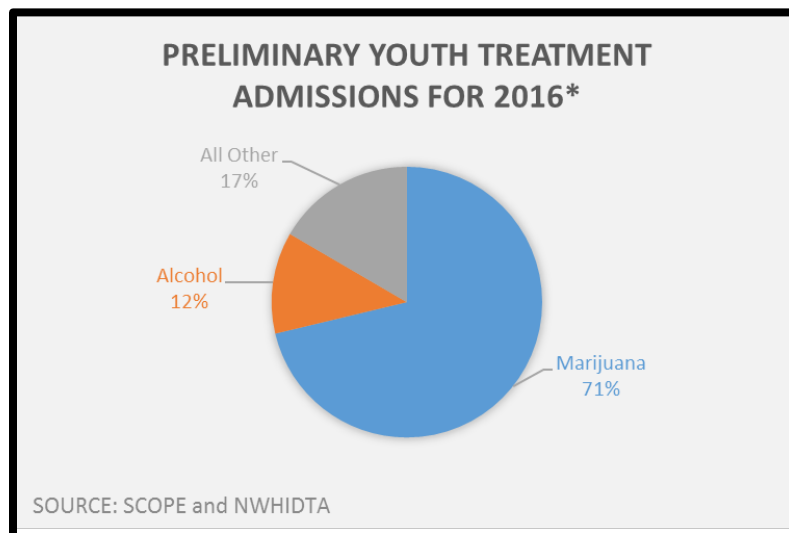
Treatment Admissions

Statewide youth treatment admissions have been decreasing over the past five years. Due to state budget pressures, the realignment of health care administration and their impacts on treatment facilities, access to services is limited and is not adequate to meet demand.

Treatment admission data includes youth admitted to four treatment modalities: outpatient, intensive outpatient, residential, and long-term residential⁹³. Regardless of treatment capacity, marijuana remains a constant for youth who are accessing services. The clients represented by this data are aged 18 years and younger with marijuana cited as the primary substance of abuse.



In 2010, marijuana accounted for 66% of admissions and increased by 5% to 71% of the total admissions by 2015.



Treatment admissions for youth during the first three months of 2016 reflect the same trend. Marijuana admissions totaled 880 by the end of March and accounted for 71% of the total youth admissions.

Section 4: Adult Impacts

Introduction

Persons 21 years of age and older may legally possess and consume marijuana in Washington State, including both medical and recreational marijuana. The following subsections discuss adult consumption and treatment data associated with the use and abuse of marijuana.

Various reports and surveys from across the nation and Washington State provide this data, including:

- Young Adult Survey: internet-based survey published by the Center for the Study of Health and Risk Behaviors at the University of Washington; the Washington State Department of Social and Health Services (DSHS), and the Washington State Community Epidemiology Workgroup;
- National Survey on Drug Use and Health (NSDUH): annual nationwide household survey funded by the Substance Abuse and Mental Health Services Administration (SAMHSA);
- System for Communicating Outcomes, Performance and Evaluation (SCOPE): a web-based database for substance abuse and mental health professionals administered by the Washington State Division of Behavioral Health and Recovery (DBHR).

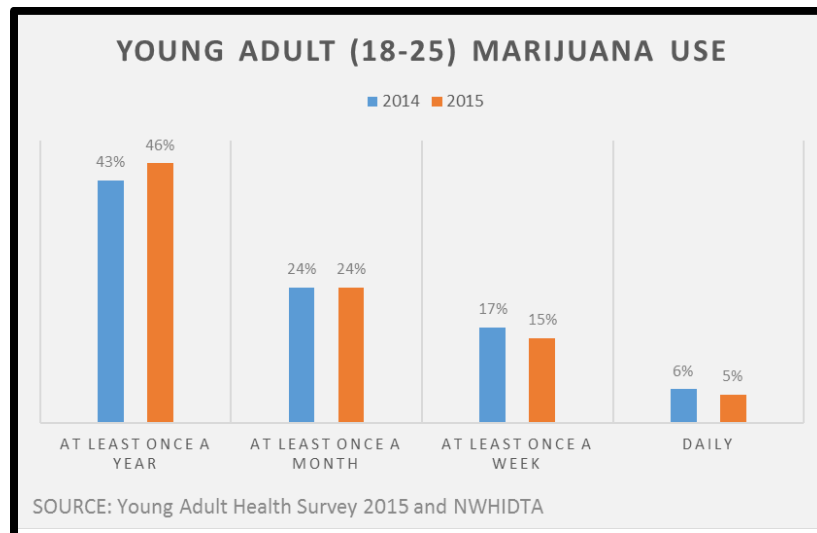
Data Summary

- 24% of young adults (18-25) consumed marijuana at least once during the last month in 2014 – 15% used at least once a week and 5% were daily users;
- 45% of young adults (18-20) perceive marijuana as easy to obtain;
- Washington State young adults' (18-25) past year marijuana use was 4% higher than the National average in 2014-2015 – the rate for Washington adults (26+) was almost 5% higher;
- Washington State young adults' (18-25) past month marijuana use was over 2% higher than the national cohort in 2014-2015 – the rate for Washington adults (26+) was over 3% higher than that of the national cohort;
- Marijuana accounted for 10% of the treatment admissions for adults during the first quarter of 2016.

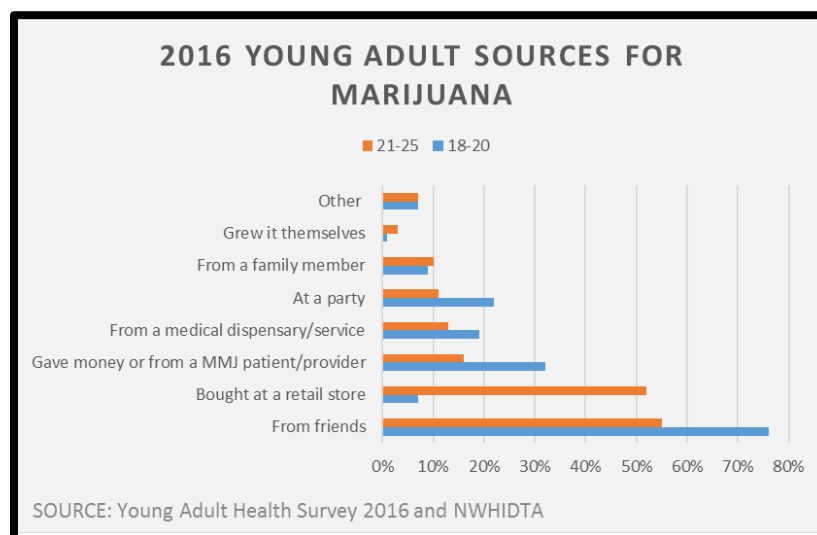
Consumption and Use

Young Adult Health Survey

Data collection for this survey was conducted from June 2016 through November 2016. It should be noted that recreational marijuana commercialization did not begin until July 2014⁹⁴. The age category for young adults encompasses persons aged 18 to 25. All ethnic groups were represented as well as all Washington state counties, with a total of over 2,000 respondents. The questions asked dealt with marijuana use, sources, and perception of risk⁹⁵.



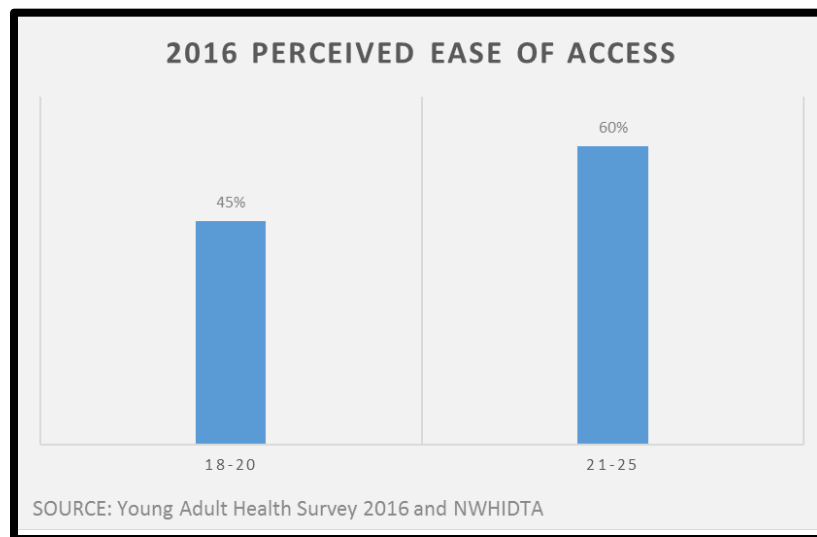
According to the survey findings, there was no significant change in marijuana use among the young adults surveyed from 2014 to 2015. A 3% increase was reported in use occurring at least once in the past year, a 1% increase was reported in use occurring at least once a month, and two decreases in use were reported among young adults who use at least once a week (2%) as well as daily (1%).



Receiving marijuana from friends continues to be the most significant source for young adults. This includes obtaining it directly by 76% of those aged 18-20 and by 55% of young adults aged 21-25.

The second highest reported source of marijuana for those aged 18-20 involved circumstances in which money was given to a medical marijuana patient/provider or the marijuana was provided unreimbursed from those individuals, at a rate of 32%. For those surveyed of ages 21-25, purchasing marijuana at a retail store was the second highest reported source at 52%.

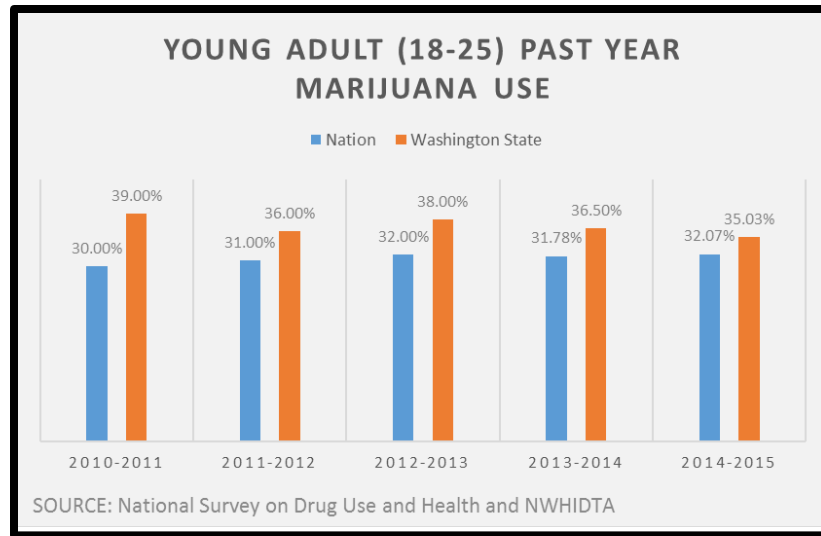
The third highest reported source for 18-20 year olds was from a medical dispensary or service (19%) and for those aged 21-25, giving money to a medical marijuana patient/provider (or obtaining marijuana directly from those individuals) occurred at a reported rate of 16%.



Among the questions posed, respondents were asked about how easy it was to obtain marijuana. Responses indicated that 45% of 18-20 year olds and 60% of respondents aged 21-25 reported that marijuana was easy to acquire.

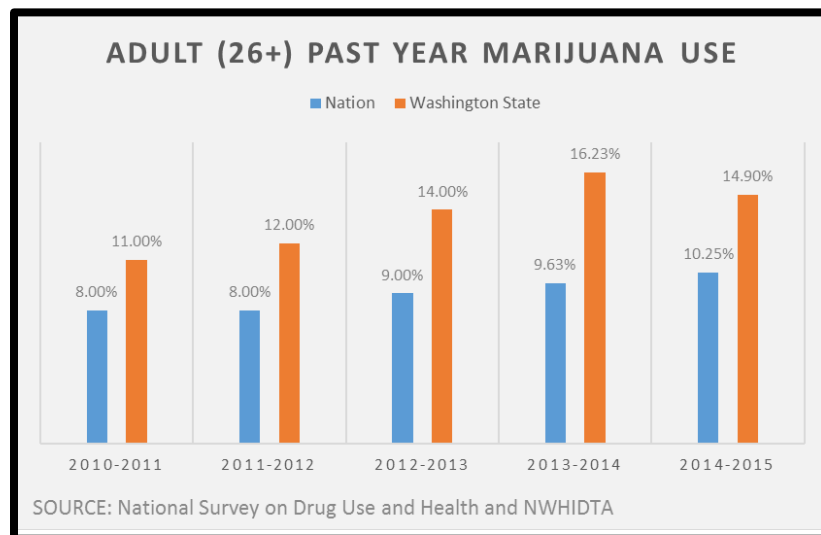
National Survey on Drug Use and Health

The data below compares Washington State to the United States with regard to two cohorts: young adults (18-25) and adults (26+). The data is derived from the 2010-2011, 2011-2012, 2012-2013, 2013-2014, and 2014-2015 NSDUH surveys⁹⁶.

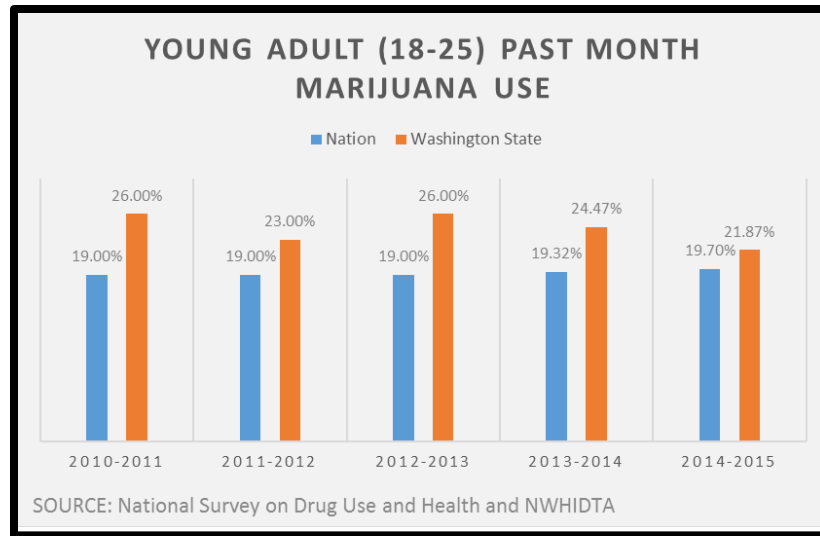


The percentage of Washington State users decreased 3% from 2010-2011 to 2011-2012 and increased 2% after legalization occurred in 2012. A decline was then reported from 2012-2013 to 2014-2015 at a rate of almost 3%.

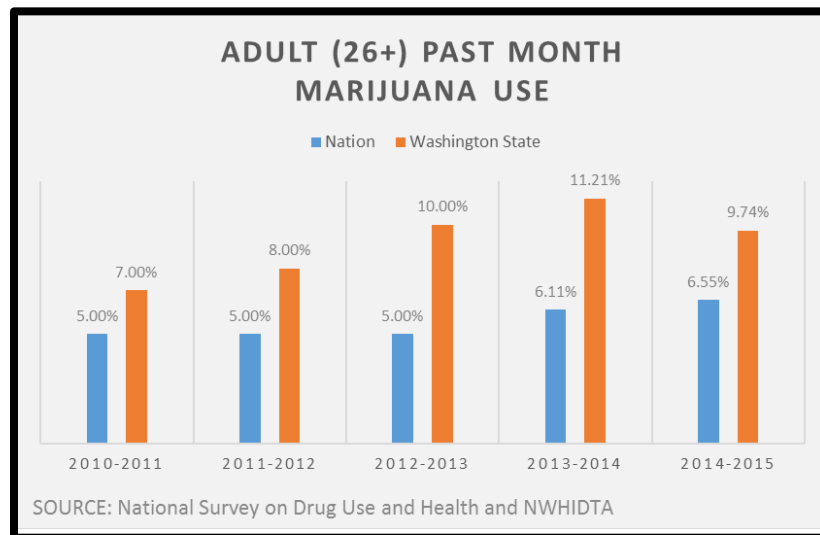
Nationally, young adult past-year marijuana use has been steadily climbing but has remained below the rate reported for those in Washington State. By 2014-2015, 35.03% of Washington young adults had used marijuana during the last year, almost 3% higher than the national figure.



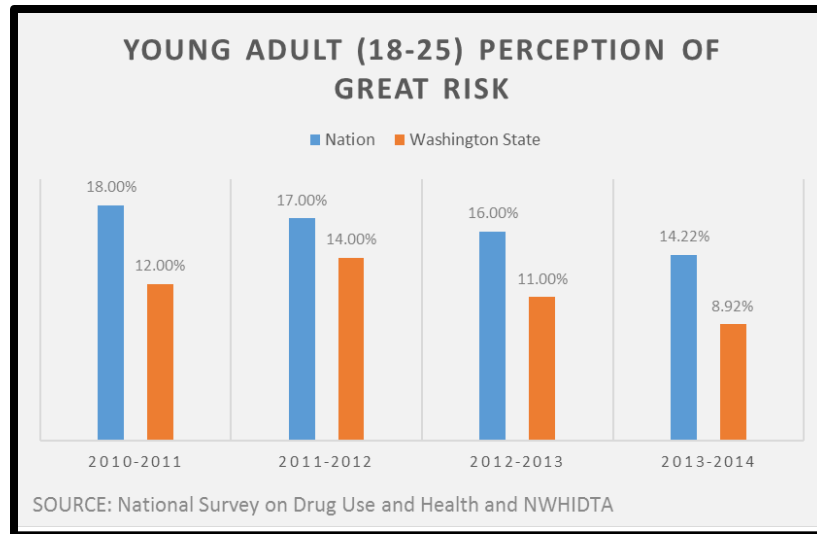
Adult past-year use remained below 10% for the nation from 2010 until the 2014-2015 survey. Past-year use among adults in Washington State however has been increasing with each survey, including a 2% jump from 2011-2012 to 2012-2013, at the time of legalization. An increase of 2.23% then occurred between 2012-2013 and 2013-2014 for Washington State adults, concurrent with the commercialization of recreational marijuana. In comparing 2013-2014 and 2014-2015 data, a decrease of just over 1% was observed.



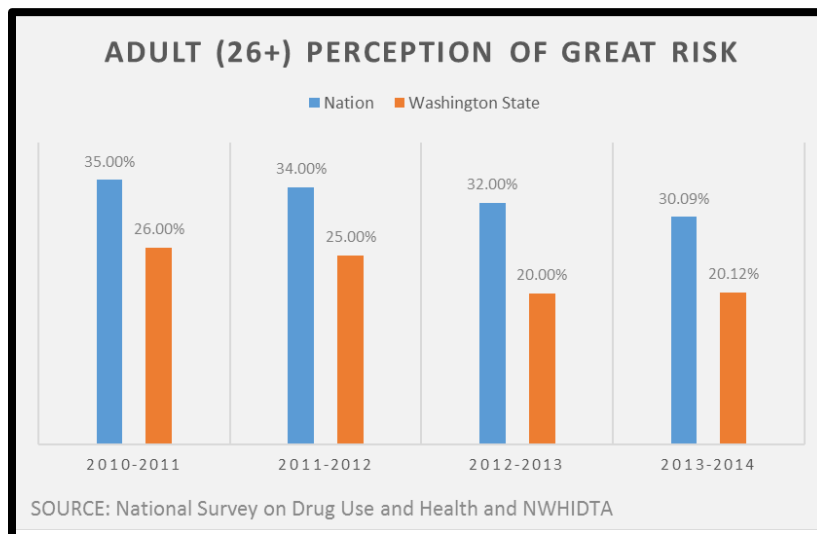
Past-month marijuana use among young adults across the nation has remained almost unchanged since 2010. Past-month marijuana use among young adults in Washington State increased 3% from 2011-2012 to 2012-2013, concurrent with legalization. Since reaching a peak in 2012-2013, past-month marijuana use for young adults has dropped 4.13%.



On a national basis, the rate of use for adults was constant until the 2013-2014 and 2014-2015 surveys. The rate of use for adults in Washington State however increased 2% between the 2011-2012 and 2012-2013 surveys, concurrent with legalization. Adult past-month marijuana use for those in Washington State peaked at 11.21% in 2013-2014 but decreased to 9.74% in the 2014-2015 survey.



The perception of great risk associated with marijuana use across the nation and in Washington State has been steadily declining since the 2010-2011 survey. Young adults in Washington State reported the largest decline, 3%, between the surveys of 2011-2012 and 2012-2013, during the time of legalization. By 2013-2014, only 14.22% of Washington State young adults' perceived great risk associated with marijuana use.

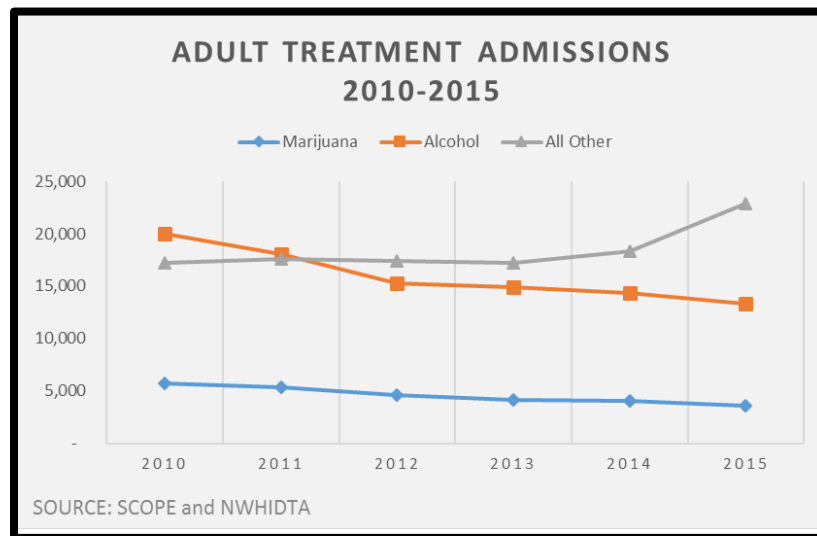


As with the perception of great risk on the part of young adults, the perception of great risk among adults has also been on the decline. Adults in Washington State reported the largest decline, 6%, between the surveys conducted in 2011-2012 and 2012-2013. Responses to the 2013-2014 survey revealed a negligible change in the perception of great risk resulting from marijuana use.

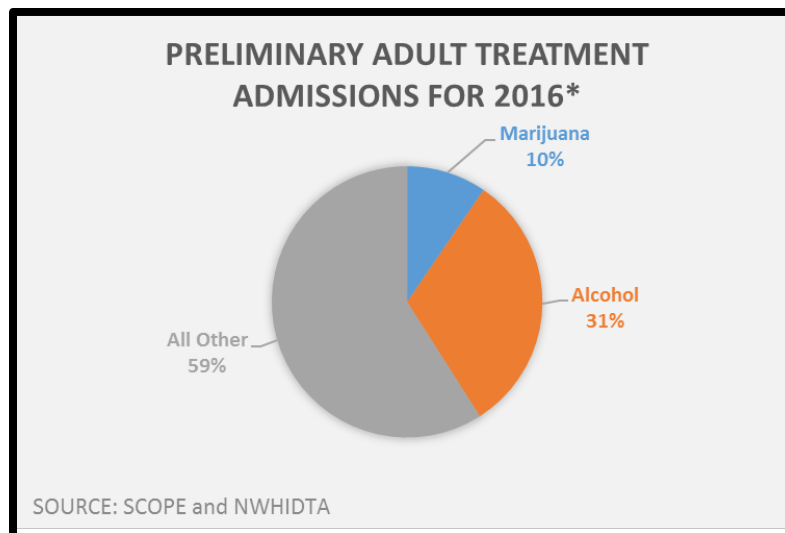
Abuse and Treatment

The perception of harm associated with marijuana use throughout the state has declined over time. Those perceptions are in part reflected in the low numbers of consumers who sought substance abuse treatment for marijuana abuse and addiction.

The available data addresses treatment admissions for those aged 18 years and older.⁹⁷ Program modalities include outpatient, intensive outpatient, residential, and long-term residential. Marijuana admissions are identified when marijuana is cited by clients as their primary substance of abuse.



In 2010, marijuana accounted for 13% of all treatment admissions in the state. This was constant through 2011 and dropped to 12% in 2012 and 2013. By 2015, marijuana accounted for 9% of all admissions.



From January to March 2016, marijuana treatment admissions for adults accounted for 10% of all admissions, totaling 3,615 individuals.

Section 5: Impaired Driving

Introduction

When the State of Washington legalized marijuana in 2012, a new threshold for driving under the influence (DUI) of marijuana was established. According to state law, the DUI limit is 5 nanograms of active THC concentration per milliliter of blood. Carboxy-THC concentration does not apply to the DUI limit.

Data Summary

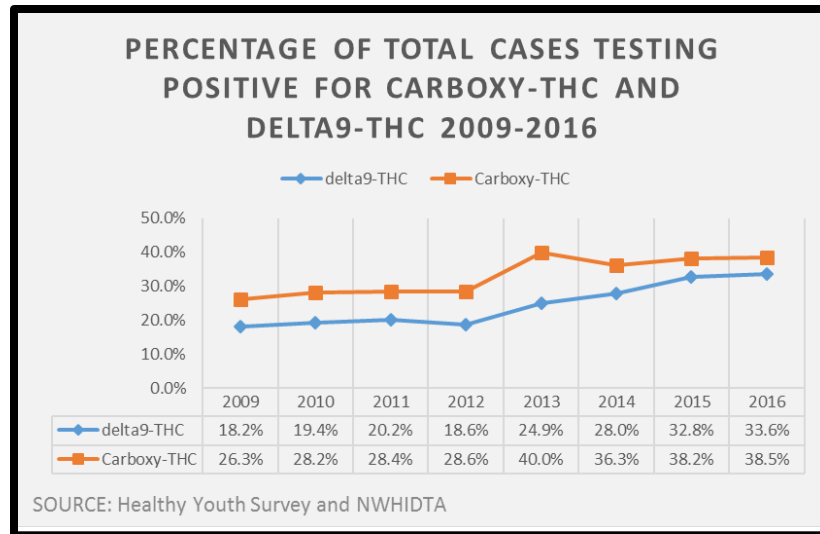
- 38% of marijuana DUI cases tested by the Washington State Patrol (WSP) Toxicology Lab in 2016 were over the legal limit of 5 nanograms per milliliter of blood;
- 33.6% of total DUI cases submitted to the WSP Toxicology Lab tested positive for active THC (delta9-THC);
- The prevalence of THC-positive drivers increased from before commercialization in 2014 to 2015 by 1.9% in Yakima County, 9% in Snohomish County, and 17.4% in King County according to the National Highway Traffic Safety Administration;
- The percentage of THC-positive drivers by day increased significantly from 7.8% before commercialization in 2014 to 18.9% in 2015 according to the National Highway Traffic Safety Administration;
- 10% of Washington State drivers involved in a fatal crash from 2010 to 2014 were THC-positive drivers according to the AAA Foundation for Traffic Safety;
- Fatal crash data from the Washington State Traffic Safety Commission (WSTSC) noted a statistically significant change involving marijuana in deceased drivers from before commercialization in 2013 (7.8%) to 2014 (12.8) – these drivers were above the 5ng/mL per se limit.

Washington State Patrol Toxicology Laboratory

The WSP Toxicology Laboratory receives evidence from DUI cases that occur across the state⁹⁸. All 39 counties are represented. The services provided assist law enforcement, medical examiners and coroners, attorneys, and state agencies.

The costs associated with DUI testing range from \$100 to \$300 per test. Multiple drugs present in an individual's system drive up the cost. DUI cases are first tested for alcohol and other common drugs of abuse prior to testing and confirming THC. The cost for testing THC alone is \$95.

The DUI threshold for Washington State drivers 21 years of age and older is 5 nanograms of active THC per milliliter of blood (5 ng/mL). Active THC is defined as Delta-9-THC, the compound in marijuana responsible for the psychoactive 'high' users' experience. Carboxy-THC is a metabolite that resides in the user for varying lengths of time and is not taken into account for DUI. Carboxy-THC is used to show past use in an individual.



Over the past seven years, the number of cases involving both active THC and Carboxy-THC has been increasing according to DUI submissions to the WSP Toxicology lab. In 2009, active THC was detected in 18% of driving cases; 33.6% of drivers then tested positive for active THC in 2016. Carboxy-THC was present in 26% of cases in 2009 and rose to 38% in 2016.

From 2012 to 2015, the incidence of carboxy-THC increased 34.61% and the incidence of active THC increased 80%.

Summary of Delta-9-THC Blood Concentrations from Driving Cases 2011-2016			
Year	# of Cases Positive for delta9-THC	THC Concentration Range	Average THC Concentration
2011	1,036	1 - 58 ng/mL	6.4 ng/mL
2012	988	1 - 90 ng/mL	8.0 ng/mL
2013	1,362	2 - 77 ng/mL	7.2 ng/mL
2014	1,759	1 - 100 ng/mL	6.1 ng/mL
2015	2,311	1 - 69 ng/mL	5.7 ng/mL
2016	2,848	1 - 71 ng/mL	5.7 ng/mL

SOURCE: Washington State Patrol Toxicology Laboratory and NWHIDTA

In 2011, a year before legalization, the average concentration of active THC in driving cases was above the 5 ng/mL threshold. The average concentration peaked at 8 ng/mL in 2012. Since then, the average has been decreasing slightly but remains above the 5 ng/mL threshold. In 2016, the average THC concentration level was 5.7 ng/mL.

The THC concentration range has remained well above the 5 ng/mL DUI limit. In 2012, the year legalization passed, the highest concentration was 90 ng/mL, compared to the year commercialization began in 2014, when the range reached 100 ng/mL. In 2016, the highest reported THC concentration was 71 ng/mL.

Year	Number of Cases Positive for delta9-THC	Number of These Cases Where THC is ABOVE 5 ng/mL
2011	1,036	506 (49%)
2012	988	610 (62%)
2013	1,362	720 (53%)
2014	1,759	703 (40%)
2015	2,311	922 (40%)
2016	2,848	1,096 (38%)
SOURCE: Washington State Patrol Toxicology Laboratory and NWHIDTA		

At legalization in 2012, 62% of DUI cases submitted to the lab were at or above the 5 ng/mL threshold. In 2016, 38% of the cases tested above the DUI threshold.

To summarize the WSP Toxicology data, more drivers are testing positive for active THC (delta-9 THC) since legalization occurred in 2012. However, the number of drivers above the 5ng/mL DUI limit has been declining. The conclusion drawn is that more drivers are on the road with some level of impairment due to marijuana use but are not exceeding the DUI limit.

Washington Traffic Safety Commission – Roadside Survey

The WTSC is the designated statewide highway safety office. The Commission is responsible for building statewide partnerships and for leading efforts to keep the state roadways safe.

The WSTC in combination with the National Highway Traffic Safety Administration and the Pacific Institute for Research and Evaluation (PIRE) developed a roadside survey for a report released in December 2016: “Marijuana, Other Drugs, and Alcohol Use in Washington State”⁹⁹. The data was collected to evaluate driving behaviors affected by marijuana use. The administration of the survey was conducted in three waves:

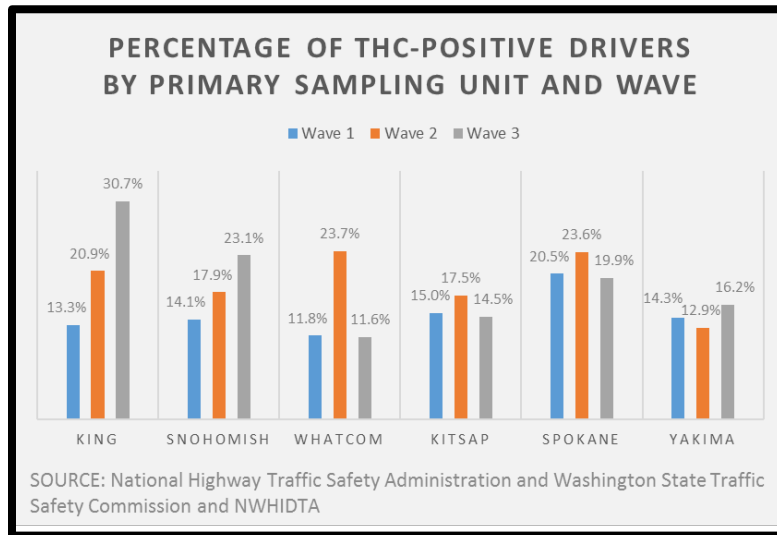
- Wave 1: three weeks before commercialization began in 2014;
- Wave 2: six months after commercialization began in 2014;
- Wave 3: one year after the implementation of commercialization.

In total, over 2,400 participants volunteered to take the survey. Both blood samples and oral fluids collected from those participants were tested for the presence of drugs and/or alcohol.

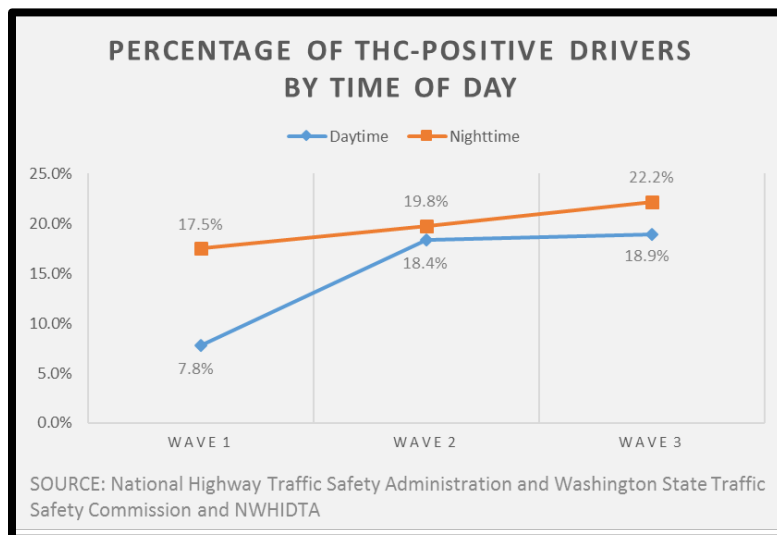
In order to assess any significant change across time in regard to marijuana and drinking behaviors, the results were analyzed and cross-compared after each wave was surveyed. Incidence data collected involving THC-positive drivers were as follows: wave 1 (14.6%), wave 2 (19.4%), and wave 3 (21.4%).

According to the report’s analysis, an increase in the incidence of THC-positive drivers was observed one year after commercialization (wave 2). However, the increase was not

statistically significant from one wave to the next. As explained, this was due in part to the dissimilarities among the variables in each wave being too large.



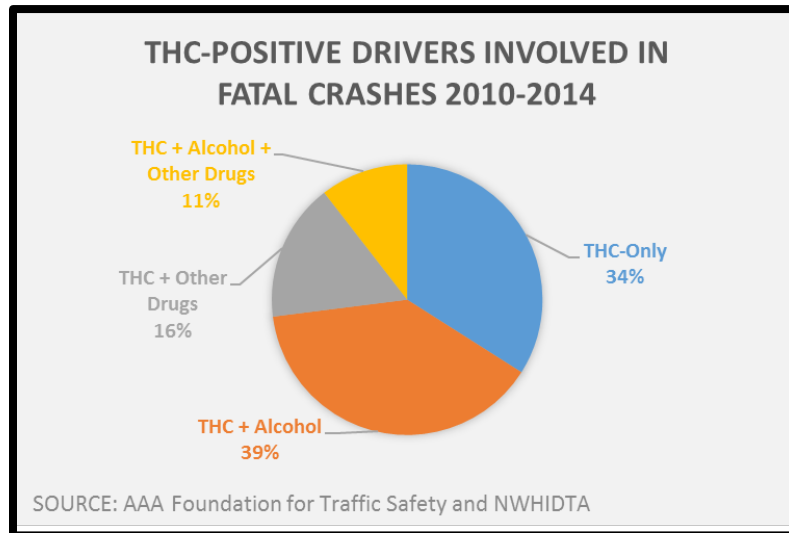
When comparing the survey's Primary Sampling Units (county locations), there were notable increases and decreases involving the number of THC-positive drivers. Comparing all waves, Whatcom County (0.2%), Kitsap County (0.5%), and Spokane County (0.6%) each had percentage decreases. The three counties that had notable increases were Yakima County (1.9%), Snohomish County (9%), and King County, with the largest increase (17.4%).



Another focus of the report showing notable statistical significance involved an increase in the percentage of THC-positive drivers engaged in daytime driving. Nighttime drivers had slight increases that were not statistically significant.

AAA Foundation for Traffic Safety – Prevalence of Marijuana Involvement in Fatal Crashes: Washington 2010-2014

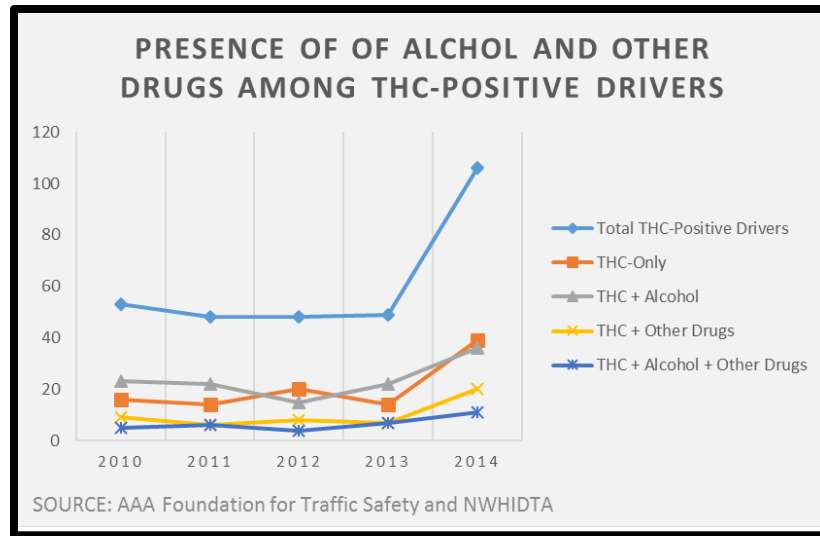
The AAA Foundation for Traffic Safety analyzed the WTSC fatal crash data from 2010-2014 to quantify the involvement of marijuana in crashes post legalization¹⁰⁰.



According to the report, 3,031 drivers were involved in fatal crashes from 2010 to 2014 with 10% estimated to be THC-positive drivers. Of the THC-positive drivers, the majority had detectable alcohol in addition to THC (39%), 34% tested for THC only, followed by THC in combination with other drugs (16.5%), and 10.5% of drivers had all three categories present at time of the crash.

Key findings involving THC-positive drivers pertained to those between the ages of 18 and 34, but especially to drivers between the ages of 18 and 20 – drivers under the age of legal marijuana consumption. These drivers also had a detectable level of alcohol present, had either a suspended or a revoked license, and were driving older vehicles.

The study also revealed a statistically significant change from 2013, before commercialization, to 2014, as commercialization began, involving drivers who died in the crash as opposed to those who survived. Deceased drivers with a blood concentration of 5 ng/mL or more rose 7.8% from 2013 (2.8%) to 2014 (12.8%). In surviving drivers the THC concentration (36.8%) was nearly half that of the deceased drivers (67.6%).



The report calculated the estimated number and proportion of THC-positive drivers involved in fatal crashes pre- and post-legalization. The detectable concentration level of THC in blood tests of individual drivers increased from 48 (7.9%) from 2010 to 2013, to 53 (8.5%) from 2013 to 2014.

News Log

A selection of news articles related to Washington State roadways and marijuana use is provided below. These media accounts include traffic crashes, vehicular homicides, hit-and-runs, driving under the influence, and other vehicular incidents.

- Seattle, February 2016:
 - A driver was charged with DUI after admitting to officers during the stop he had consumed two marijuana cookies before getting behind the wheel. Officers also discovered the driver had an unregistered gun lying on the passenger seat floor¹⁰¹.
- Olympia, April 2016:
 - A 19-year-old driver was arrested for one count of vehicular assault and vehicular homicide after striking two pedestrians in a crosswalk. The driver hit the two with his truck, stopped, then backed over the woman – she was initially declared brain dead but then ultimately died from her injuries. The man who was struck suffered broken ribs and a hip fracture. The driver was under the influence of marijuana in combination with other drugs^{102 103}.
- SeaTac, May 2016:
 - A 15-year-old driver in a BMW was charged with two counts of vehicular assault and one count of reckless endangerment after hitting a pickup truck, splitting it into three pieces. The truck was occupied by a man and his 7-year-old son. Fire crews had to extract the man and child from the vehicle and both suffered critical injuries requiring the child to be intubated at the scene. Two teens ran from the BMW but the 15-year-old driver, a man in his 20's, and a five-year-old in the

vehicle remained on scene. According to officers, the inside of the BMW smelled like marijuana. Photos of the accident are provided below¹⁰⁴.

- Lacey, May 2016:
 - An 18-year-old was charged with vehicular assault, driving under the influence of drugs, third degree driving with a suspended license, reckless driving, and unlawful possession of a controlled substance after driving an open box truck with a woman in the back who fell out and suffered a severe skull fracture and possible brain damage. Officers found a two-foot bong and a jar of marijuana inside the truck; a Drug Recognition Expert (DRE) determined that the 18-year-old had recently consumed marijuana¹⁰⁵.
- Bremerton, July 2016:
 - A 69-year-old driver ran a stop sign, drove through a backyard, down an embankment, and into the side of a house. The 31-year-old homeowner had part of his face torn off according to police as the vehicle almost landed on his head. The driver admitted to smoking marijuana earlier in the evening¹⁰⁶.
- Spokane, August 2016:
 - A motorcyclist under the influence of marijuana fatally crashed into the back of a stopped van. The 57-year-old motorcyclist was pronounced dead that evening despite lifesaving attempts by multiple witnesses to the crash¹⁰⁷.



Section 6: Diversion

Introduction

Washington State has long been an integral part of a distribution network for illegal drugs that extends from Mexico to Canada. The Interstate-5 corridor stretches the entire distance making drug trafficking in vehicles a simple drive north or south. Diverted marijuana is trafficked to, from, and throughout the state. These diversion activities are not limited to any one source or market.

One of the main points made by the pro-legalization movement assumes the eventual elimination of illegal activity involving both local distribution and large scale criminal organizations. However, instances of illegal marijuana being seized in place and in transit by law enforcement are still occurring.

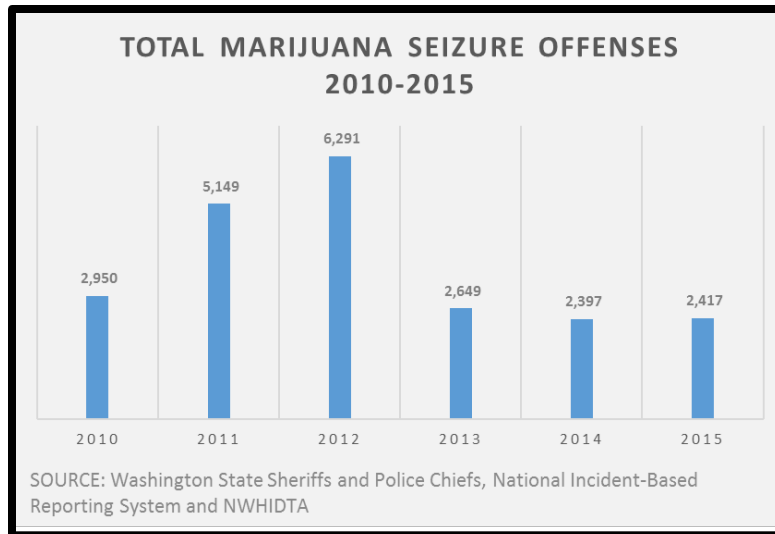
Data Summary

- Youth (12-17) accounted for 64.9% of all state marijuana seizures in 2015 as compared to 29.9% in 2010 according to NIBRS data;
- Since legalization in 2012, Washington State marijuana has been found to have been destined for 38 different states throughout the United States;
- From legalization to preliminary data for 2017, 8,242.39 kilograms has been seized in 733 individual seizure events across 38 states;
- From 2012 to 2016, 470 pounds of marijuana have been seized on Washington State highways and interstates;
- Since 2012, 320 pounds of Washington State-origin marijuana has been seized during attempted parcel diversions.

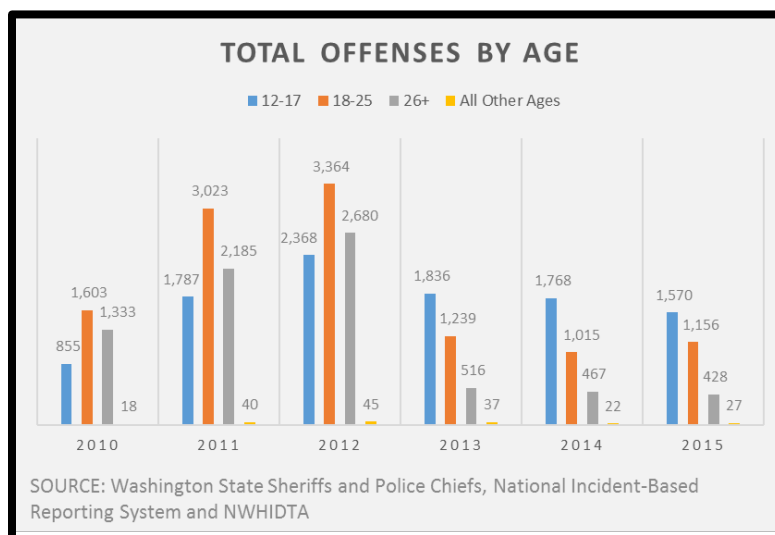
National Incident-Based Reporting System

The Federal Bureau of Investigation is the administrator of the Uniform Crime Reporting system, within which the National Incident-Based Reporting System (NIBRS) compiles more detailed information. In the State of Washington, the Washington Association of Sheriffs and Police Chiefs (WASPC) collates the data submitted and organizes the information to be state specific. In doing so, reports can be written to quantify crime in Washington State as well as to keep track of annual jail statistics. The NIBRS data from WASPC facilitates identifying marijuana crimes pertaining to seizures. Local and federal agencies report seizures into this database.

WAPSC obtains data from NIBRS regarding seizures specific to Washington State¹⁰⁸. The data below have been provided by various local and federal law enforcement agencies.



From 2012 through 2014, marijuana seizure offenses reported to the NIBRS system have decreased 61.58%.



Despite the overall decline in seizures in the state, the activities associated with one age group have countered this trend. In 2010, youth 12 to 17 years old were represented in 29.9% of all seizures. In 2012, they were represented in 36.7% of seizures and in 2013 they were represented in 69.3% of total seizures. Youth seizures peaked in 2014, representing 73.7% of total seizures. By the end of 2015, 64.9% of seizures involved youth aged 12 to 17.

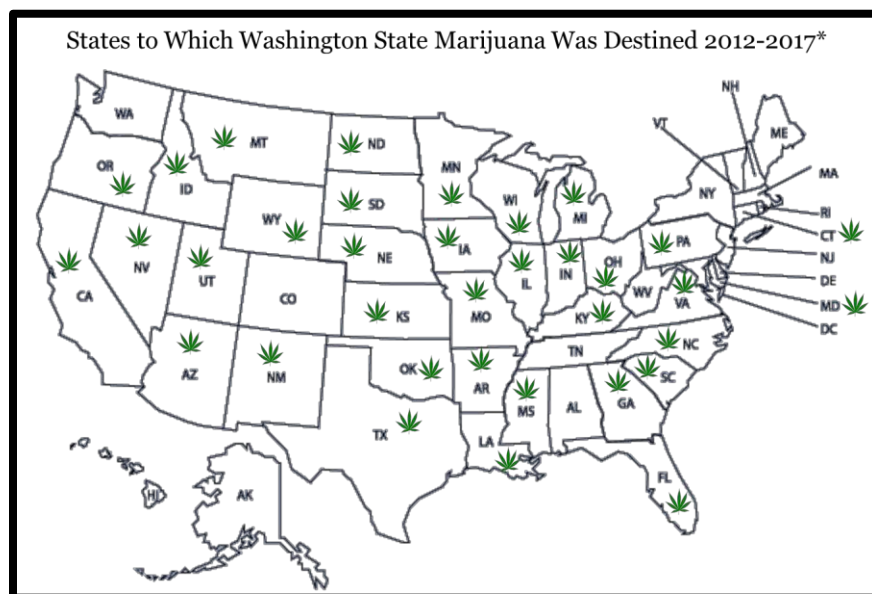
It is important to note that the dynamic between the state, the law, culturally accepted behaviors, and law enforcement goals was fraught with tension as legalization occurred. Due in part to confusion about the new law, officers were unsure of what constituted a seizure, what could be seized, and if courts would move the arrest to the filing of charges. Many prosecutors throughout the state declined to prosecute marijuana cases unless extreme circumstances were involved.

National Seizure System

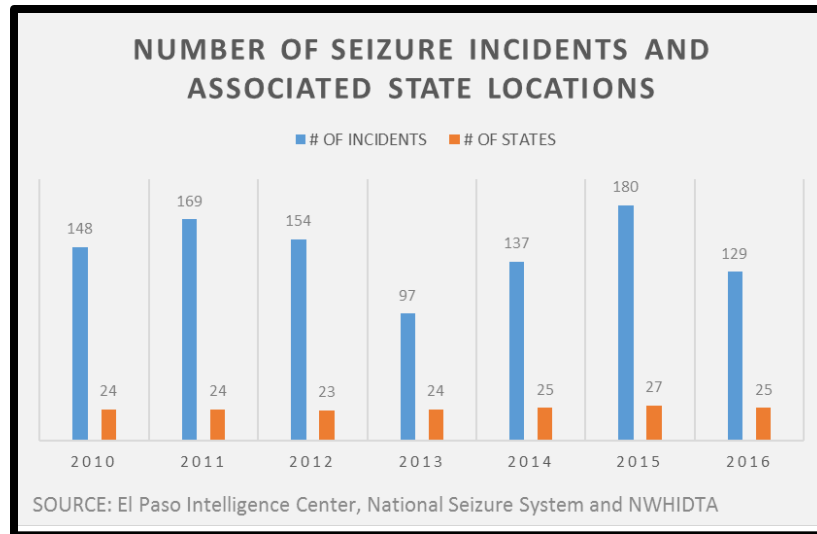
The El Paso Intelligence Center (EPIC) National Seizure System (NSS) logs drug seizures reported by participating law enforcement agencies from across the nation. EPIC is the central point of access for NSS data. Seizure data can be collected from all levels of law enforcement including local and federal agencies. The data in this system specifies the total amounts seized, location information, the seizing agency, and the date of the seizure¹⁰⁹.

Seizures entered into NSS are voluntarily reported by law enforcement agencies. Many agencies have a requirement associated with funding to report but it is not consistent throughout the law enforcement community, which may explain why seizure numbers are low.

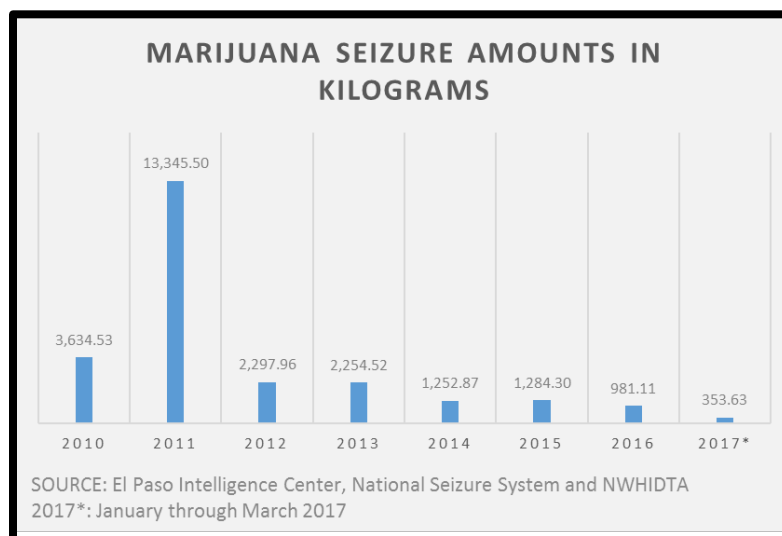
The data available for this report cannot identify and therefore does not differentiate between marijuana that originated from a state-licensed business or from the black market. Furthermore, the data below does not include Washington-plated rental cars as a nexus indicating a Washington State marijuana source.



From legalization in 2012 through the first three months of 2017, seized marijuana from Washington State was found to be destined for 38 other states – almost 80% of the United States.



From 2010 to 2016, information collected in NSS compiled the number of seizure incidents and the number of associated states where the seizures occurred. The number of incidents increased 16.88% from legalization in 2012 to a peak of 180 incidents in 2015. The number of states involved has remained consistently between 23 and 27. First quarter data for 2017 from NSS indicates that 36 seizure incidents have occurred in 13 states.

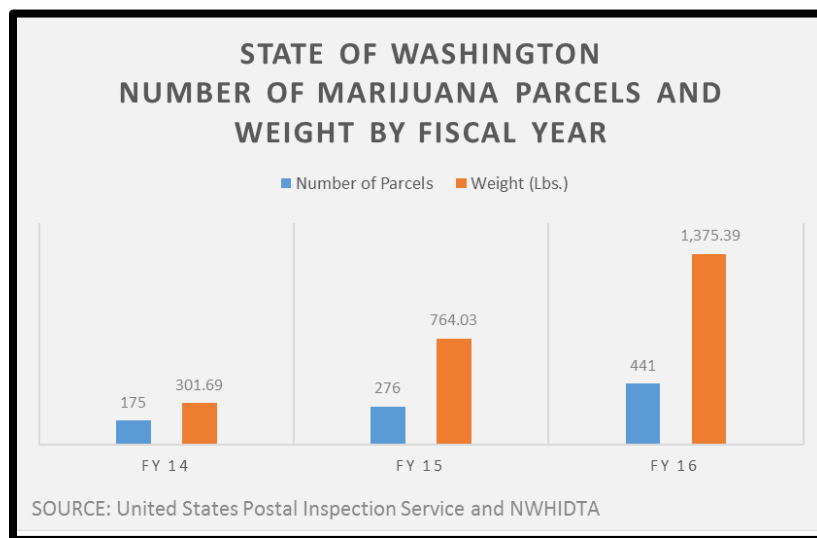


The graph above represents the total amount of useable marijuana destined outside the state that was seized. The amount of marijuana seized decreased dramatically one year before legalization, in 2011. From legalization in 2012 to preliminary data for 2017*, 8,242.39 kilograms have been seized in 733 individual seizure events across 38 states.

United States Postal Inspection Service

The mission of the United States Postal Inspection Service (USPIS) is to enforce, protect, and support the United States Postal Service from illegal or dangerous use and to maintain public trust in the federal mail service¹¹⁰. United States Postal Inspectors are responsible for enforcing 200 federal laws intended to ensure that the mail is not a conduit for illegal goods or operations.

Data obtained by USPIS-Seattle is provided below by fiscal year - October 1 through September 29.

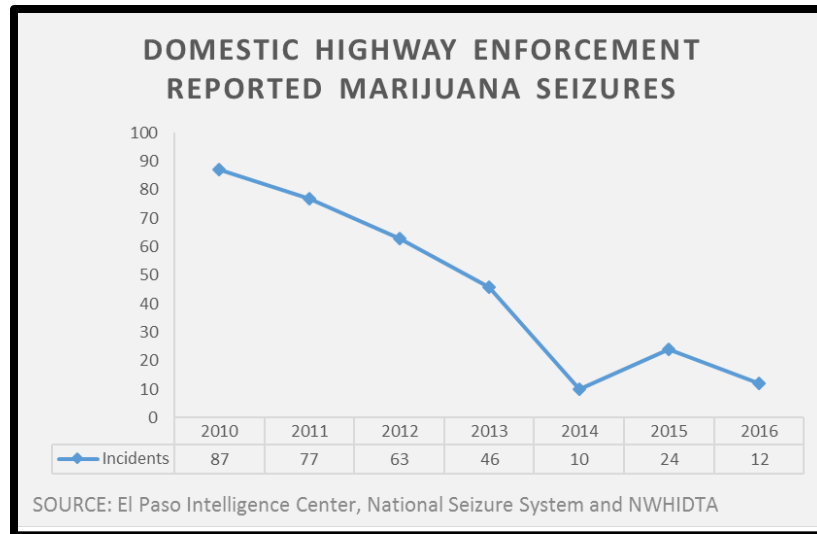


For Fiscal Year 2014, the year of commercialization in Washington State, 175 parcels were seized containing a total of 301.69 pounds of marijuana. Seizures during the next fiscal year increased 57.71% in the number of parcels seized (276) for a total of 764.03 pounds of marijuana, an increase of 153.25%. Seizures during fiscal year 2016 continued to increase with regard to the total number of parcels and the number of pounds of marijuana seized. The rate of increase from fiscal year 2015 to 2016 was 59.78% for parcels and 80% for pounds of marijuana.

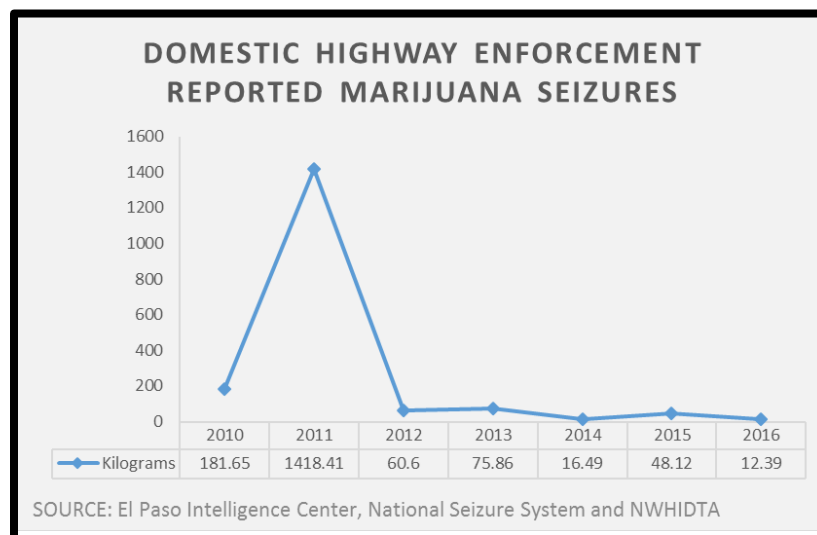
Domestic Highway Enforcement

The Domestic Highway Enforcement (DHE) Strategy operates throughout the nation and emphasizes multi-jurisdictional law enforcement on highways. This program is an asset in providing intelligence information for various drug cases as well as for promoting traffic safety in communities. The WSP submits all seizure information into the DHE database consistent with its responsibility for primary enforcement on the highways and interstates throughout the state.

The WSP enforcement responsibility spans over 17,000 miles of interstates and highways across Washington State and includes the authority to seize any illegal drugs that are transported on those roadways for the purpose of distribution. When seizures occur, the WSP submits a report to the DHE database¹¹¹.



The number of seizure events occurring on Washington State highways and interstates has decreased since 2010. In 2012, 63 marijuana seizure incidents were reported, compared to 10 incidents that were reported in 2014 – an 84% drop.



The amount of marijuana seized also has dramatically decreased since 2011 when 1,418 kilograms were seized. Since legalization in 2012, 213.46 kilograms have been seized on Washington State highways.

Changes in policy, state law, reporting requirements, and enforcement resources are a few of the factors that may be contributing to the decrease in marijuana seizure incidents. However, out of state marijuana seizures continue to occur unabated.

News Log

The following news articles document the diversion of marijuana from Washington State:

- South Dakota, October 2015:
 - Four Everett, Washington residents were arrested and charged with numerous drug, firearm, and attempted murder charges after a traffic stop in South Dakota. During the stop, an assault occurred that placed the trooper in the hospital with skull and facial fractures – the suspects fled the scene. Troopers were able to locate the vehicle which led to the discovery of 50lbs of marijuana, \$33,000 in cash, and a handgun¹¹².
- Oregon, August 2016:
 - A man from Seattle, Washington and a man from St. Louis were arrested in Oregon after being caught with over 25 pounds of narcotics including: 4.5lbs of marijuana, 16.5lbs of marijuana edibles, 108 packages of marijuana “cool-aid”, 3.5 ounces of heroin, one ounce of meth, and one ounce of cocaine. The majority of the illegal substances were hidden inside footballs.

Section 7: Marijuana-Related Crime

Introduction

This section of the report will examine data from the WSP Crime Laboratory and the Pierce County Sheriff's Office. In addition, the news log will highlight crime headlines from across the state. Marijuana-related crimes include robberies, burglaries, home-invasions, illegal marijuana grows, THC-extraction labs/explosions, assaults, drug deals, illegal marijuana sales, possession-related crimes, and additional related crimes.

Data Summary

- 889 THC qualitative cases examined by the WSP Crime Laboratory were closed – almost all were associated with minors;
- The Pierce County Sheriff's Office reported a 31% increase in incidents related to the sale and manufacturing of marijuana in 2015 when compared to the four years prior;
- The Pierce County Sheriff's Office reported a 12% increase in incidents related to the sale and manufacturing of marijuana in 2016 when compared to the four years prior;
- According to the Western States Information Network (WSIN), 25% of the labs seized and reported in 2016 involved honey-oil/THC-extraction activities.

Washington State Patrol Crime Laboratory

With legalization came new processes and considerations bearing on marijuana-related crimes. The WSP Crime Lab has been challenged in adjusting to these changes. Of the eight accredited labs utilized by the WSP, the crime labs located in Vancouver, Seattle, and Spokane have been the primary labs responsible for marijuana testing¹¹³.

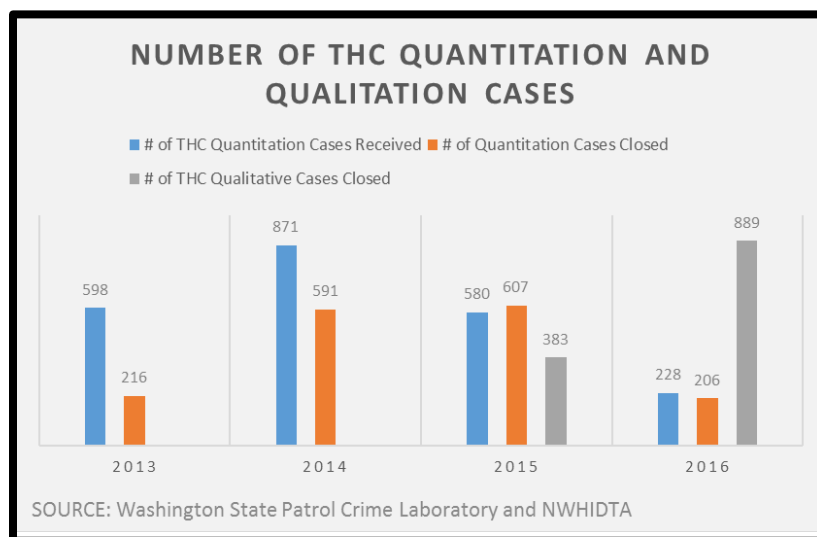
Before legalization, the crime labs typically only conducted qualitative testing on marijuana. These tests would determine if in fact the leafy green material submitted was marijuana. After legalization, the lab was required to conduct quantitative testing to determine the THC percentage of the sample. Because of this change, the lab went from being able to conduct one test in under one hour to a process requiring three to four hours. The scientists who conduct this testing spend between 33% and 75% of their time dealing with marijuana quantitation.

The costs for this change totaled over \$250,000. New supplies, instruments, and software cost approximately \$260,000 in upgrades without funds having been legislatively mandated for the lab. The expense had to be absorbed by the WSP Crime Lab Division.

In addition to changing testing methods, the caseload for the lab also increased post-legalization. With commercialization, marijuana is now an element of numerous types of products and exposures by minors have consequently increased, resulting in a significant

increase in controlled substance case submissions. The lab estimated that 80% of the marijuana cases examined within the first half of 2015 involved minors.

The implementation of Senate Bill 5052 in July 2015 amended multiple laws including the Revised Code of Washington (RCW) 69.50.4013(4)¹¹⁴. Amendments made to this RCW affected those 21 years of age and younger. The RCW now states that minors may not possess, manufacture, sell, or distribute any marijuana or marijuana products regardless of the THC quantitation. Thus, the qualitative testing now conducted by the lab is mostly associated with minors. Essentially, quantitation cases now primarily involve adults.



The graph above represents the total number of cases received and closed by the WSP Crime Lab. As noted, years 2013 and 2014 show the number of quantitation cases received and closed. For 2015 and 2016, quantitation cases are still highlighted but qualitative cases are also shown; 889 THC qualitative cases related to minors were closed in 2016.

Pierce County Sheriff's Office

The Pierce County Sheriff's Office serves Washington State's second most populous county and is staffed by 329 law enforcement officers, 305 corrections officers, and 145 civilian personnel¹¹⁵. The county has a population of over 800,000 including 390,000 who reside in unincorporated areas of the county.

The Sheriff's Office collects trend information involving illegal narcotics including marijuana¹¹⁶. The number of incidents ranging from possession to sale and manufacturing of the identified narcotic are calculated in the county assessment. Information collected for the current year is compared to the previous five years to determine if the number of incidents falls within the expected average and/or normal range for the county.

In comparison to the 2010-2014 yearly averages, incidents involving marijuana possession were down 29% in 2015. However, marijuana sales and manufacturing registered a notable increase of 31%. Similarly, when comparing data for 2016 to the 2011-2015 yearly averages, marijuana possession decreased yet again by 17%. Marijuana sales and manufacturing

increased by 12% in comparison to previous years. While the number of possession incidents has decreased, sales and manufacturing within the county has increased over the past two years.

THC-Extraction

THC extraction involves stripping the trichomes from marijuana plant material, which produce the psychoactive high. This process produces an extremely concentrated form of THC¹¹⁷.

The common names for the concentrated product are butane hash-oil/butane honey-oil (BHO), wax, crumble, shatter, or sugar. This type of marijuana is desired by consumers due to the very small amount needed to experience a powerful high. Users can consume this highly concentrated form by smoking (known as ‘dabbing’), smoking in a vaporizer (including e-cigarettes), infusing into food products, mixing into drinks, or dissolving into various tinctures or topicals.

This product has been made and consumed for decades but commercialization created an incentive for businesses to meet the increasing demands of consumers. Due to the inexpensive materials, do-it-yourself guides on the internet and the availability of marijuana, consumers have been attempting to create the product themselves.

The simplest method used by consumers requires obtaining cans of butane, plastic pipes, a dish to catch the liquid, and a filtration device such as a coffee filter. A heat source is also needed to evaporate the butane before consuming the end product. All of these items are readily available in hardware, grocery, and marijuana stores across the state.

The most alarming safety concern facing a consumer attempting to extract THC using butane involves the use of a gas that is extremely flammable. Butane is colorless, odorless, and heavier than air. Any spark can trigger an explosion. Ignition sources can include static electricity from clothing, a refrigerator clicking on, or a lit cigarette.

The number of reports detailing THC-extraction labs and/or explosions does not accurately represent the phenomenon occurring across Washington State because THC-extraction activities were not common before marijuana was legalized. When commercialization began in 2014, 17 reported labs and/or explosions were reported.

The number of THC-extraction labs and/or explosions in 2015 and 2016 has not surpassed the total that occurred in 2014. A factor in the decline may have been the well-publicized federal “Operation Shattered” case that occurred that same year, focusing on four THC-extraction lab explosions that took place in Kirkland, Seattle, Puyallup, and Bellevue for which eight people were federally charged and sentenced.

WSIN is a regional program established to assist local, state, federal, and tribal criminal justice partners with investigations focused on officer safety in Washington State, Oregon, California, Hawaii, and Alaska. WSIN reports clan lab statistics including THC-extraction occurrences on an annual basis¹¹⁸. For 2016, four honey-oil/THC extraction labs were reported, accounting for 25% of the lab types and ranking second to methamphetamine labs.

Data available through open-source research includes the following references to THC-Extraction labs and/or explosions that occurred in 2015 and 2016:

- Puyallup, July 2015:
 - A 48 year old man from California was arrested for illegally operating a THC-extraction lab in the city of Puyallup. Pierce County Sheriff's Office Deputies went to the medical marijuana dispensary to deliver a cease and desist letter since the business was operating without a valid business license when they discovered the lab in the shop. The man was arrested on suspicion of unlawful manufacture of a controlled substance¹¹⁹.
- Yakima, August 2015:
 - Two men, ages 21 and 38, caused a THC-extraction explosion in the basement of a home while five children and a woman were inside. According to reports, the two men told the children and woman to escape the house before they fled the scene. However, both men suffered second and third degree burns over 45% of their bodies and checked themselves into the Yakima Valley Memorial Hospital where they were identified. Both men were airlifted to Harborview Medical Center in Seattle and were rushed to the Intensive Care Unit (ICU). The local fire department estimated property damage at approximately \$30,000¹²⁰.
- Waterville, January 2016:
 - A 21 year old man caused a THC-extraction explosion in his family's home that left him with burns to his hands. The man was extracting THC in his bedroom when a spark from a nearby lamp ignited the butane vapors in the room. The man pleaded guilty to unlawful manufacture of marijuana and was sentenced to two months of home monitoring¹²¹.
- Greenwood, January 2016:
 - United States Homeland Security was executing a search warrant on a home in the Greenwood neighborhood of Seattle when they stumbled upon a THC-extraction lab in the home. Homeland Security Agents called the local fire department to assess the safety of the air quality and identify the compressed gas canisters found throughout the home – some of which were butane. The fire department concluded the air was safe, but the lab itself was still illegal¹²².
- Spokane, August 2016:
 - A man was critically injured in an attempted THC-extraction process in the basement of a home where two other adults and three children resided. The man was initially transported to a local area hospital, but due to the severity of his injuries, he was flown to Harborview Medical Center in Seattle¹²³.
- Bellingham, October 2016:
 - A 24 year old man caused an explosion within his home, one unit within a triplex, while attempting to extract THC from marijuana. The force was so intense that it blew out the windows and butane canisters were propelled into the ceiling and walls of the unit. The fire was so extensive that it caused major damage to his unit on the second floor and displaced four residents in the unit below. Once the fire was contained, police found 200 ounces of marijuana in his residence. The man was also an employee of a licensed marijuana producer where he held the position of trimmer. According to his employer, he had expressed interest in the marijuana extraction process. The

injuries he sustained from the explosion placed him in the ICU at Harborview¹²⁴.

State law has taken a proactive step in order to emphasize that any THC-extraction attempted outside of a LCB state-licensed processor is illegal. Language included in Senate Bill 5052 specifies that any extraction done outside of a licensed commercial business was only allowed to utilize non-combustible methods for the process such as cooking oil or butter.

News Log

Examples of news articles substantiating the relationship between marijuana and crime in Washington State follow. These stories address illegal possession, illegal manufacturing, homicides, assaults, robberies, burglaries, and home-invasions. Crimes associated with medical marijuana, recreational marijuana, and the black market are included.

Marijuana robberies, burglaries, and home-invasions:

- Vancouver, January 2016:
 - A man in his 20's and a teenaged male knocked on a woman's front door and then threatened her at knifepoint while the two stole marijuana from her home. The two fled the scene on foot.
- Federal Way, February 2016:
 - A woman arranged to buy marijuana in a restaurant parking lot when the dealer robbed her of \$260 in cash at knifepoint.
- Lakewood, May 2016:
 - A 16 year-old boy and a friend arranged to rob a marijuana dealer in Lakewood through Facebook. The friend met with the dealer, stole the marijuana, and then attempted to flee. The dealer and an associate began to chase the friend. That is when the teen, wearing a mask, got involved and pointed a handgun at the two chasing his friend, at which point they ran back to their vehicle. When the teen tried to put the handgun back in his pants, the gun fired through his leg fracturing his pelvis, femur, and severely damaging his femoral artery. The teen, his friend, and a second friend who took the marijuana and weapon from the scene were all arrested¹²⁵.
- Tumwater, July 2016:
 - Three armed men broke into a home, tied up the four residents, and placed duct tape over their mouths. One of the intruders armed himself with the homeowner's AR-15 and demanded the combination to a safe. One of the residents was able to escape and call 911 – that is when the shooting started. When police arrived on scene, seven people ran from the home; four had gunshot wounds including all three suspects and the homeowner. All three suspects were arrested and during the interrogation admitted that the house was picked because one of the suspects knew the homeowner from prison and the home had a lot of marijuana and money¹²⁶.

Commercial marijuana business robberies and burglaries:

- Bellingham, March 2016:
 - Two suspects broke into a marijuana retailer by using a framing hammer to break the glass doors. Once inside, the two broke the glass display cases and stole the marijuana products contained within. The estimated loss was several thousand dollars' worth of product¹²⁷.
- Spokane, June 2016:
 - Police responded to a burglary call at a marijuana retailer. Once on scene, officers discovered that unknown suspects broke into the business through a window. According to police, the suspect(s) were only after marijuana products inside the retailer and were not after money¹²⁸.
- White Center, July 2016:
 - Two suspects broke into a marijuana retailer by using a ladder to climb through a second-story bathroom window. Once inside, the two suspects started filling garbage bags with marijuana products. This was the third break-in for the retailer – the first was in September 2015 when a suspect rammed a truck through the front door and stole marijuana and money. The second was a month later in October 2015 when three suspects armed with guns again stole marijuana products and money¹²⁹.
- Tonasket, September 2016:
 - Unknown suspects cut a hole in the fence of a licensed producer and stole 40lbs worth of mature marijuana. This was the third producer robbery in the area since December 2015. The first robbery was conducted by three suspects who stole 60lbs from the grow operation – all three were arrested and most of the marijuana was recovered. In the second robbery, the suspects are still unknown and 144lbs of processed marijuana was taken from the licensed producer¹³⁰.
- Wenatchee, October 2016:
 - Two suspects broke through the security fence of a licensed producer and proceeded to fill up plastic totes with dried marijuana until the business owner confronted them. One of the suspects fired seven times at the owner, who in turn returned five shots. The suspects fled and got away¹³¹.

Illegal marijuana grows:

- Maple Valley, February 2016:
 - After discovering brown ooze seeping from a home, the Maple Valley Police Department and the King County Sheriff's Office investigated the grounds to discover an illegal marijuana growing operation. Officers executed a search warrant at the Maple Valley house, which revealed that the owner also owned a home in the Beacon Hill neighborhood of Seattle. Officers executed a secondary search warrant and confiscated over 500 marijuana plants and more than \$30,000 hidden in a dresser¹³².

- Vancouver, March 2016:
 - During an Easter egg hunt, a man nearby was heard screaming that his roommates were going to kill him. The Clark County Sheriff's Office responded and discovered the disturbance between the man and roommates was in connection to a large illegal marijuana distribution operation at a nearby home. The Clark County Regional Drug Task Force executed a warrant at the identified house and confiscated 45lbs of processed marijuana valued at \$200,000 and seized \$108,000. The three suspects linked to the operation were arrested¹³³.
- Seattle, April 2016:
 - A break-in at a local non-profit organization that helps children in need learn to read led to the discovery of 531 marijuana plants. Officers on scene discovered the front door of the non-profit was the entry point but also found that the suspects smashed a hole inside to access the commercial office space next door which housed an extensive illegal indoor marijuana grow. Nothing inside the non-profit was stolen but detectives concluded that a few marijuana plants were taken¹³⁴.
- Bellevue, April 2016:
 - The Bellevue Police Department executed search warrants at two homes; both were one block away from elementary schools. Each home was converted for the sole purpose of illegally growing marijuana. Detectives confiscated 1,649 marijuana plants from the houses¹³⁵.
- Parkland, May 2016:
 - The Central Pierce Fire Department responded to a 911 call where two people were found unresponsive in a bedroom. Firefighters learned from the caller that the two residents had recently moved a generator into the home since the power had been shut off. Firefighters on scene discovered an alarmingly high carbon monoxide reading and several marijuana plants which prompted a request for assistance by the Pierce County Sheriff's Office. Deputies discovered 101 marijuana plants in the yard and 10 located in a detached garage. Additionally, methamphetamine, stolen handguns, a security system with motion cameras, and an improvised explosive device were found. One of the residents died from carbon monoxide poisoning from the generator and the other resident was rushed to the hospital¹³⁶.

Assaults and marijuana deals gone bad:

- Pasco, October 2015:
 - A 16-year-old teen was shot in the arm after attempting to steal marijuana from a backyard grow. Police responded to the hospital to speak with the teen who explained that he and a friend spotted the grow and when he reached over the fence to grab some marijuana, he was shot. Officers went to the house and found the 24 year old homeowner hiding within the marijuana grow. Located inside the grow was a .22 caliber rifle and a stolen .24 caliber pistol partially buried in the dirt. The Drug Enforcement Administration

served a warrant on the property days later and confiscated 15 marijuana plants and 22lbs of processed marijuana¹³⁷.

- Spanaway, January 2016:
 - A Walla Walla State Penitentiary corrections officer and his brother, owner of a marijuana collective, arranged to meet a buyer for 3lbs of marijuana, but a shootout ensued. During the attempted drug deal, an argument erupted and gun fire was exchanged between them¹³⁸.
- Federal Way, February 2016:
 - Two teenage boys, 14 and 16 years old, fatally shot a 16 year old in the back of the head over a marijuana deal in a Taco Bell parking lot. After the shooting, witnesses saw the teens flee from the car after grabbing a bag, which was determined to be full of marijuana. Both teens were found and arrested after the shooting¹³⁹.
- Parkland, April 2016:
 - A 21 year old suspect fired four shots during an argument over someone stealing his marijuana months prior. One of the bullets went through the windshield of an uninvolved woman's car and struck her in the arm and chin. All the suspects involved in the argument fled the scene, including the shooting suspect. The suspect was charged with two counts of first-degree assault and drive-by shooting¹⁴⁰.
- Tacoma, September 2016:
 - An argument involving a marijuana deal ended in gunfire and one dead outside of a house in the Hilltop neighborhood. The suspected shooter, a 50 year-old man, fled the scene, and according to officers, traveled to Oregon with the help of his wife. The suspected shooter was charged with second-degree murder¹⁴¹.

Investigations:

- Seattle, April 2016:
 - Seven men and one woman were arrested and charged with misdemeanors for illegally operating a marijuana delivery service in Seattle. The couriers were arrested after responding to undercover police wanting to purchase marijuana from their service – the purchases were between \$100 and \$260. Each courier faced a \$1,000 fine and 90 days in jail¹⁴².
- Bridgeport, May 2016:
 - An investigation led by Douglas County Sheriff's Office detectives uncovered a drug manufacturing and distribution operation in a home. Sheriff Deputies and Bridgeport Police Department officers executed a search warrant at the house and found prescription medications, marijuana products and marijuana oil. Police also discovered 40 marijuana plants and butane used to manufacture marijuana oil. The suspect, a 26 year old male, was arrested and charged with unlawful manufacture and delivery of marijuana and possession of prescription medications without a prescription¹⁴³.
- Waterville, August 2016:

- An illegal marijuana grow was discovered on Badger Mountain after law enforcement personnel spotted the operation by helicopter. The Douglas County Sheriff's Office conducted surveillance and ultimately executed a search warrant on the property. Deputies confiscated 646 marijuana plants with a street value of \$840,000, a .40 caliber pistol, a flatbed pickup truck used to haul water, generators for lights, and a bulldozer to clear the land within the grow. No one was located on the property at the time of the warrant but evidence was present that indicated someone was living at the grow location¹⁴⁴.
- Wenatchee, November 2016:
 - The Wenatchee Police Department and the Columbia River Drug Task Force executed a search warrant at a home where individuals were known to have been actively dealing marijuana from a bedroom window over the course of a year. Three teenage boys, two 15 year olds and a 17 year old, were identified as the dealers of marijuana and marijuana oil. Per the investigation, their primary customers were fellow teenagers – the house was located five blocks away from Wenatchee High School. Officers discovered marijuana, money and scales in the bedroom. All three teens were charged¹⁴⁵.
- Seattle, November 2016:
 - A violent street gang member utilized a marijuana dispensary as a front to sell cocaine, guns, and body armor. Undercover buys of weapons, including a .38 caliber pistol, were arranged by law enforcement. Officers executed a search warrant on the suspect's apartment and discovered an assault rifle with a 100-round drum¹⁴⁶.

Section 8: Environmental Impacts

Introduction

In accordance with a memorandum issued by former Deputy Attorney General James Cole, growing marijuana on public lands is an enforcement priority for the Department of Justice as it impacts public safety and creates environmental dangers associated with marijuana production. This section will examine the environmental impacts of the regulated marijuana industry as well as illegal marijuana growing operations and other environmental issues involving marijuana.

Data Summary

- An estimated 1% of the total energy use in Washington State is attributed to marijuana growing operations – this equates to providing power to two million homes at a cost of \$6 billion and the emission of carbon dioxide by three million cars;
- 373,778 marijuana plants found growing illegally on public and private lands were eradicated from 2012 to 2016;
- 60% of the illegal marijuana plants eradicated in 2016 were cultivated on state land;
- The 58,604 illegal marijuana plants that were eradicated in 2016 consumed an estimated 43.2 million gallons of water during a full growing season (120-day cycle);
- Over 400 pounds of fertilizers, chemicals, and pesticides were removed from illegal marijuana growing operations in 2016;
- Furan, a neurotoxin that is extremely dangerous to humans and has been banned by the Environmental Protection Agency (EPA), was found in an illegal marijuana growing operation in 2016.

Marijuana Production Energy Use

Collecting data on the environmental impacts of marijuana cultivation is very specific to the individual grow itself. Depending on whether the grow site is located outdoors or indoors, variations will be observed. Both indoor and outdoor marijuana grows rely heavily on access to water and electricity. Data on cultivation sites has historically come from illegal operations dismantled by law enforcement and from researchers endeavoring to generalize the impacts of such operations on a statewide scale.

According to the Lighting Design Lab in Seattle, 200 watts of lighting power density per square foot are typically used in grow operations¹⁴⁷. Generally, indoor grows utilize 1,000-watt light bulbs; the problem with these types of bulbs, however, is the heat that is produced. This requires indoor grows to install exhaust fans and air conditioning units for the plants to ensure proper growth, increasing the demand for electricity. It has been determined that if the plant canopy for cultivation covered 4 million square feet, licensed producers would account for 1.63% of the state's total energy use.

EQ Research also addressed marijuana cultivation energy use in a report entitled “A Chronic Problem: Taming Energy Costs and Impacts from Marijuana Cultivation”, released in 2016¹⁴⁸. The report discussed common trends among Washington State’s and other legalized states’ energy use and concluded that the 1% of total energy used for marijuana cultivation would equate to the power needed for two million homes with a collective energy bill of \$6 billion annually. Additionally, the carbon dioxide produced by marijuana production would equal the emission of three million cars.

When Washington State legalized marijuana, no consideration was given to how these additional resources would be managed or mitigated, and what long-term impact legalization would have on the environment. As the commercialized marijuana industry grows in Washington State, more research needs to be done regarding energy use.

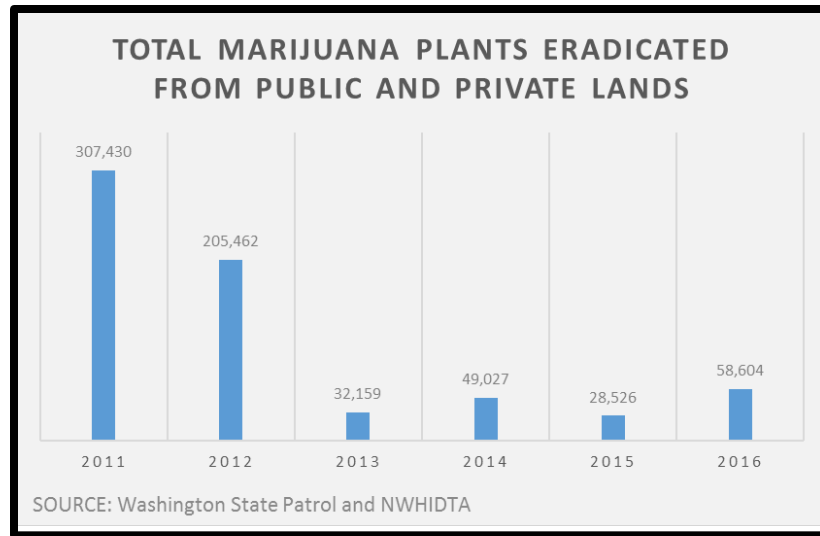
Marijuana Eradication Program

The WSP manages the Marijuana Eradication Program (MEP) for the state as sponsored by the Drug Enforcement Administration (DEA) Domestic Cannabis Eradication/Suppression Program (DCE/SP). The program focuses on the eradication of illegal marijuana growing operations and is conducted by federal, state, and local law enforcement agencies¹⁴⁹.

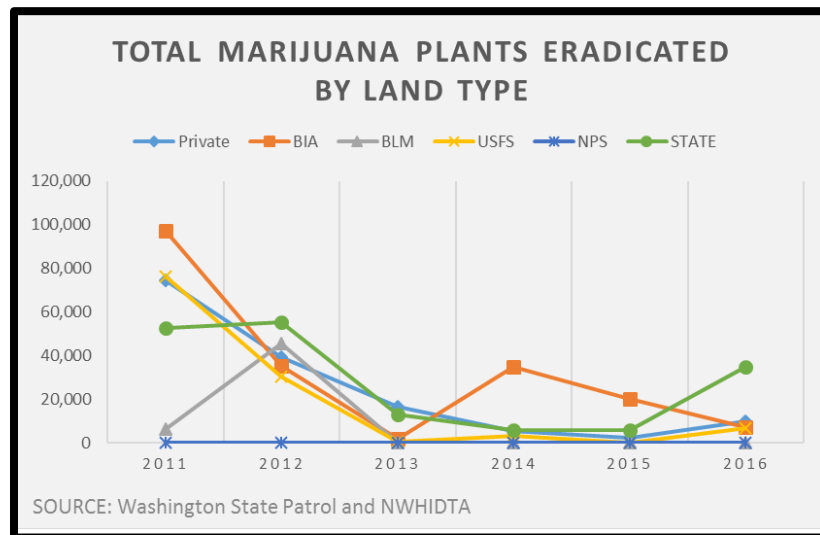


Washington State has long been exploited by large, illegal outdoor marijuana growing operations on public and tribal lands. The majority of these enterprises are situated on the eastern side of Washington State due to optimal weather conditions and terrain suitable for plants to flourish outdoors. Mexican cartels, predominantly the Sinaloa cartel, have controlled these marijuana operations over the past few decades¹⁵⁰. The photo above provides an example of an illegal outdoor marijuana growing operation¹⁵¹.

The combined resources and efforts of local, state, tribal and federal law enforcement agencies have had a dramatic impact on the activities of cartels intent on growing on public lands in the state. Through various investigative and proactive tactics, the eradication team has been able to identify, disrupt, and dismantle a significant number of these illegal growing operations.

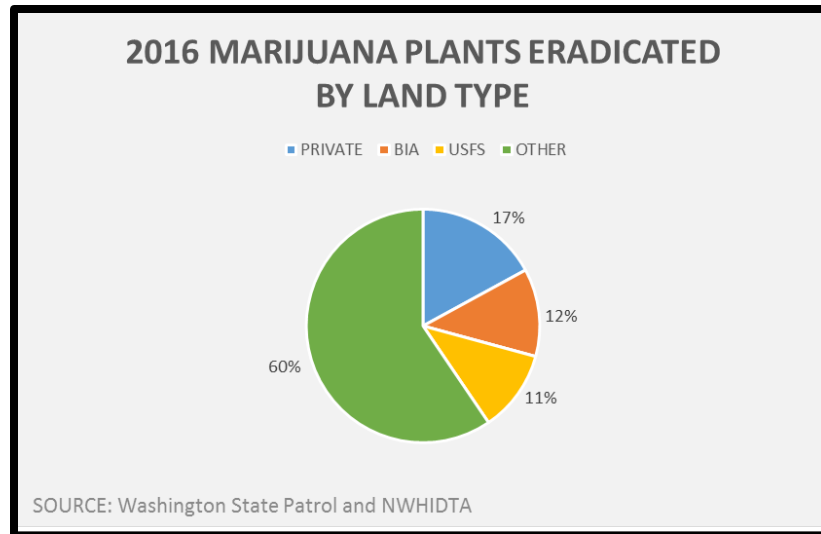


In 2011, 307,430 marijuana plants were eradicated in Washington State. When legalization was then approved in 2012, the MEP experienced a 33% decrease in seizures. A 19.5% increase was then observed from 2014 to 2016. In total, since legalization in 2012, 373,778 marijuana plants have been eradicated.



The graph above indicates where these illegal grows have been eradicated, including: private land, Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), United States Forest Service (USFS), National Park Service (NPS), and parcels owned by the state of Washington.

Growing environments for marijuana are located throughout the state, particularly in Eastern Washington. Yet indications are that illicit growers avoid private land due to the greater likelihood of discovery. Over the past six years, BIA land has yielded the majority of plants with 196,350 eradicated, followed by other public land types (such as state owned land) with 167,689 plants eradicated, and private land with 148,019 marijuana plants eradicated.



In 2016, the majority of plants (60%) were located on state land. Private land was utilized by 17% of the grows, followed by BIA land (12%) and USFS land (11%).

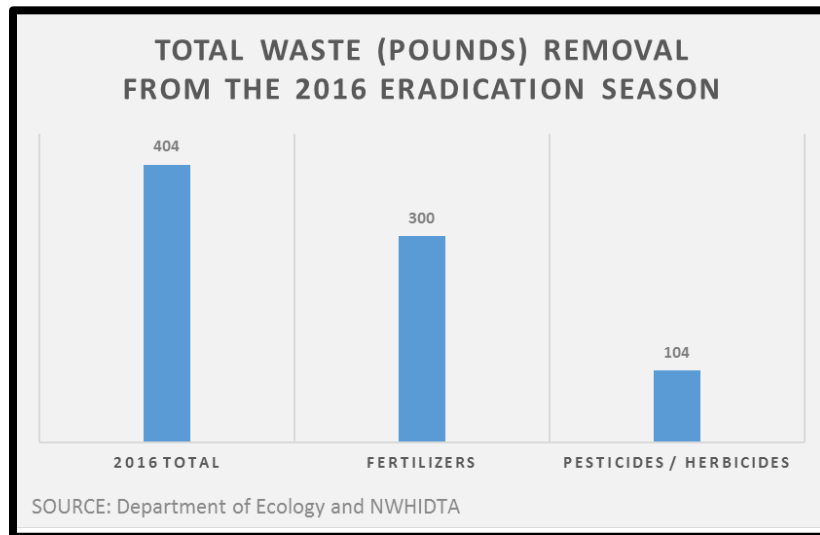
A marijuana plant needs 6 gallons of water per day according to a report titled *'Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds'*¹⁵². During the 2016 outdoor marijuana eradication season in Washington State, law enforcement eradicated nearly 60,000 plants. When applying 6 gallons of water per plant during a full growing season (120-day cycle), a total of 43.2 million gallons of water would therefore be needed.

Cultivators who establish illegal marijuana grow operations historically divert water from nearby water sources such as streams, rivers, ponds, and lakes. Commonly used techniques include the use of black poly-pipe to divert the water and construction of a reservoir to hold the water necessary for the marijuana plants. The photo below provides an example of a reservoir constructed to supply an illegal marijuana grow by diverting water from a nearby stream¹⁵³.



Washington State Department of Ecology

For the 2016 eradication season, the Washington State Department of Ecology (DOE) was asked to assist the Marijuana Eradication team with the removal of hazardous chemicals from illegal grow sites. Data collected from the DOE Response Team is given below¹⁵⁴:



Over 400lbs of waste was removed from grow sites in 2016. Of that, 300lbs included fertilizers that ranged from granular, which is commonly used by home gardeners, to liquid fertilizers which are specifically designed for marijuana production. According to WAC 173-303-100, which establishes dangerous waste criteria, these fertilizers in their concentrated form are designated as dangerous waste when disposed¹⁵⁵. If human contact is made with these fertilizers, symptoms include irritation of the respiratory tract, gastrointestinal tract and skin.

DOE team members also removed 104lbs of pesticides/herbicides from the illegal growing operations. Pesticides are commonly used in these sites to eliminate insects infesting the marijuana plants, but the toxicity can be spread to animals and humans if contact is made. Examples of symptoms experienced by humans due to exposure to certain pesticides/herbicides include vomiting, spasms, breathing difficulties, hypothermia, convulsions and nausea.

An extremely toxic pesticide was discovered at one illegal marijuana grow locations in 2016: Furadan. This pesticide is known to have specific neurotoxic effects with an extremely high risk involving human contact as it is easily absorbed through inhalation. When applied to marijuana plants, Furadan will dry into a powder which may be released into the air when plants are disturbed. The photo on the right shows Furadan on a marijuana leaf from the identified grow.



When the discovery of Furadan occurred the Eradication Team and DOE team members immediately stopped working in the grow. All team members then had to don personal protective equipment to reduce the risk of exposure when eradicating the illegal grow location.

Section 9: The Current Markets

Introduction

This section will examine the current markets for both recreational and medical marijuana. Topics that will be addressed include taxes, banking, industry trends, and tribal relations.

Data Summary

- Total Marijuana Sales:
 - Fiscal Year 2015: \$259,785,729;
 - Fiscal Year 2016: \$972,729,675;
 - Fiscal Year 2017: \$800,590,866* through January 2017;
- Total Excise Taxes Generated:
 - Fiscal Year 2015: \$64,882,333;
 - Fiscal Year 2016: \$185,678,650;
 - Fiscal Year 2017: \$271,838,049;
- Local Distributions of Generated Excise Taxes:
 - FY 16: \$3,261,496.58 for cities:
 - Vancouver, Tacoma, Seattle Millwood, and Everett received 57% of the total distribution (\$1,863,933.46);
 - FY 17: \$2,738,503.42 for counties:
 - King, Spokane, Snohomish, Whatcom, and Thurston Counties received 74% of the total distribution (\$2,036,416.24);
- According to the Washington State Department of Financial Institutions, 12 financial institutions are currently serving the marijuana industry in the state;
- Four Sovereign Indian Nations have entered into the Washington State regulated marijuana industry: the Muckleshoot, Puyallup, Squaxin Island, and Suquamish nations.

Marijuana Sales and Taxes

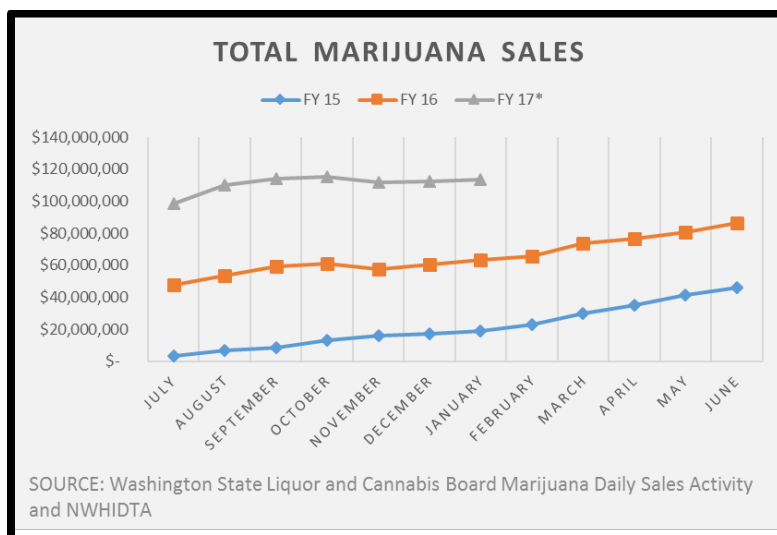
Sales:

Initiative 502 did not set parameters for the price of recreational marijuana. The market was expected to establish its own prices based upon demand and production costs. Competition among recreational businesses was also taken into account, as was competition from the black and medical marijuana markets prior to the enactment of Senate Bill 5052 in 2016.

The data shown below for fiscal years (FY) 2015, 2016, and 2017 include sales among and by all producers, processors, and retailers. Data collected for FY 2015 only includes marijuana sales and excise tax information from the recreational market. No department or agency in the state, other than the Washington State Department of Revenue -- which is only responsible for

collecting taxes -- gathered information regarding sales or any other commercial activities undertaken by the medical marijuana market.

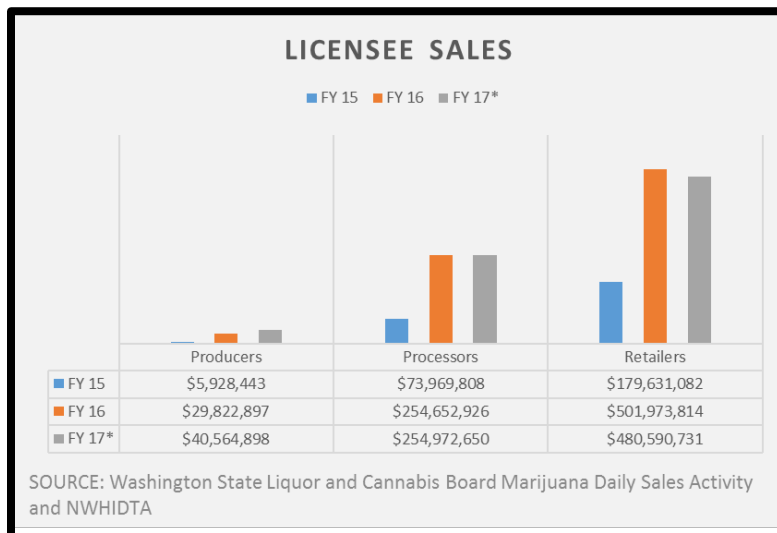
Regulation of the medical marijuana industry began in July 2015 with the implementation of Senate Bill 5052. The data for FY 2017 represents the first year wherein both recreational and medical marijuana sales and tax information was collected.



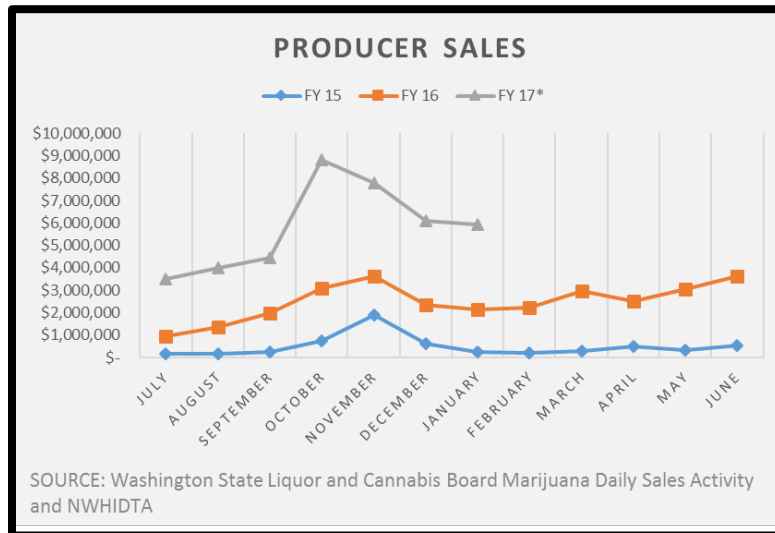
This graph depicts sales for each of the three fiscal years by month. In FY 2015, the state generated \$259,785,729 in recreational sales¹⁵⁶. Retailers in July 2015 were averaging \$1,910,070 in sales per day¹⁵⁷.

In FY 2016, which entailed a full year of recreational sales and six months of medical marijuana sales, generated \$972,729,675 in total sales. Retailers in June 2016 were averaging \$3,409,692 in sales per day¹⁵⁸.

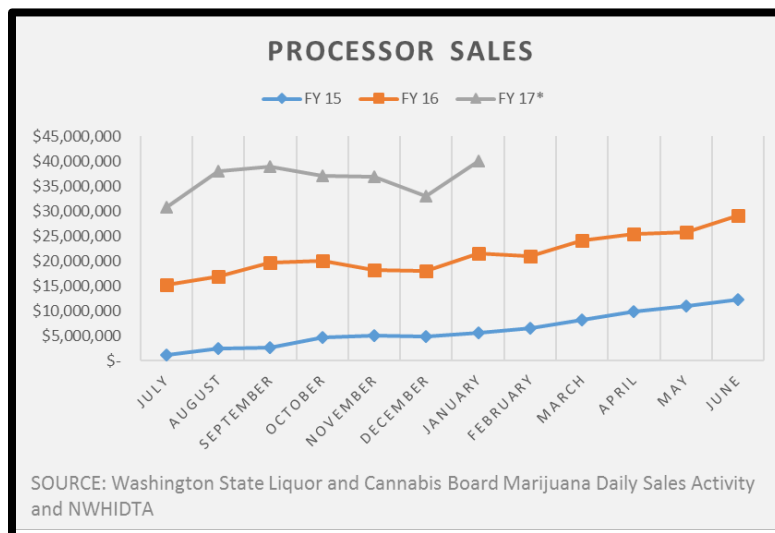
Preliminary data for FY 2017, which includes all recreational and medical marijuana sales data, shows that \$800,590,866 in sales have occurred as of January 2017.



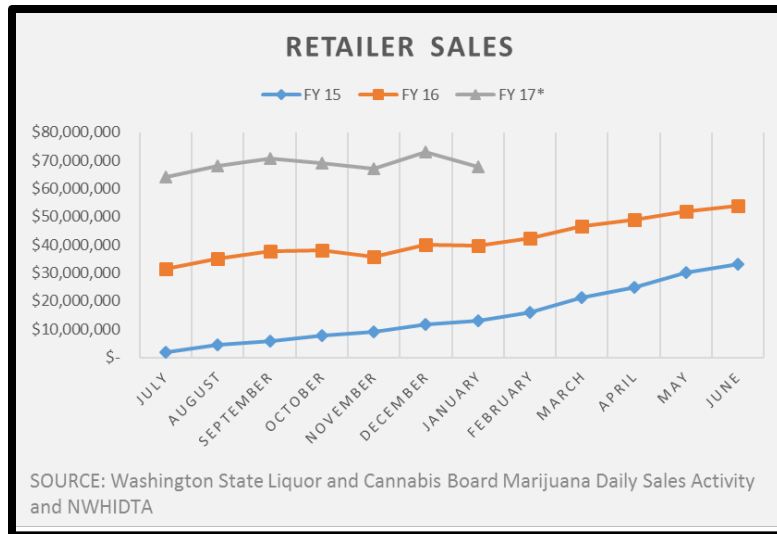
Displayed by license type, retailers generated the most sales, with producers generating the lowest sale amounts. Since FY 2015, producers have generated \$76,316,238 in sales, processors have generated \$583,595,384 and retailers have generated well over one billion dollars in sales, \$1,162,195,627.



Producer sales since FY 2015, have increased; sales from FY 2015 to FY 2016 increased 403% while sales including FY 2016 and preliminary data for FY 2017 have increased 36%.



Processor sales increased 244% from FY 2015 to FY 2016.



Retailer sales from FY 2015 to FY 2016 increased 179%.

Taxes:

When I-502 was originally passed by Washington State voters, it included a specific state taxing scheme that applied to recreational marijuana businesses.

The initiative imposed a 25% excise tax on each of the three tiers of the system. This meant that from producers to processors, processors to retailers, and retailers to consumers, a 25% tax was applied to each transaction. However, if a business was a dually-licensed producer/processor, the tax would not be imposed between those two licenses. This tax was applied in addition to state and local taxes.

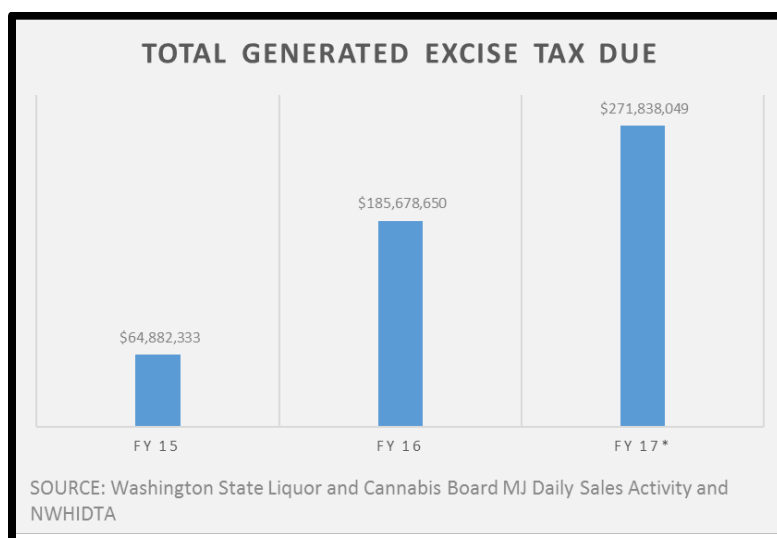
The generated excise taxes were to be deposited into a Dedicated Marijuana Fund for disbursement¹⁵⁹. The account is required to make quarterly and annual disbursements, including:

- Quarterly disbursements and priorities :
 - Department of Social and Human Services: \$125,000
 - Administration, implementation, and analysis of the Healthy Youth Survey;
 - Department of Social and Human Services: \$50,000
 - Contract for the Washington State Institute of Public Policy to conduct cost-benefit evaluation reports;
 - University of Washington Alcohol and Drug Abuse Institute: \$5,000
 - Production of web-based materials regarding the health and safety risks associated to marijuana use;
 - Washington State Liquor and Cannabis Board: \$1,250,000
 - Administration of Initiative-502.
- After quarterly disbursements, additional recipients and priorities:
 - 50% to the Basic Health Plan Trust Account;

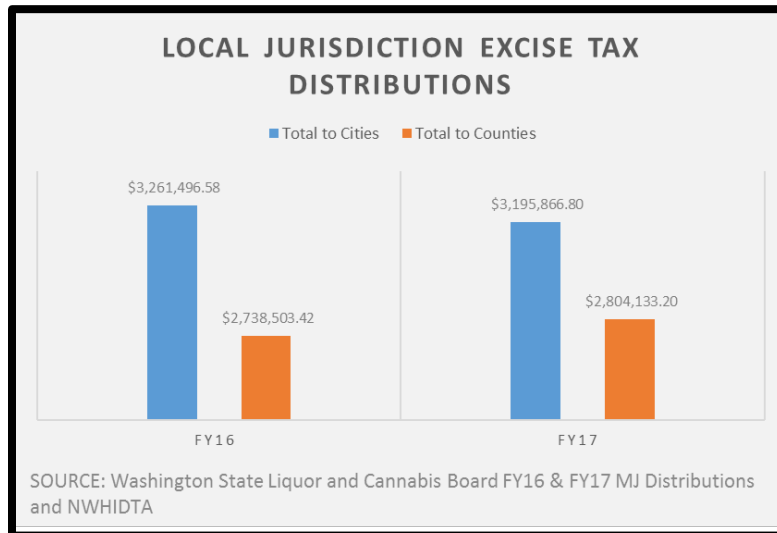
- Health Care Access Act (Medicaid Matching Funds);
- 19.7% to the State General Fund
 - Unspecified priorities;
- 15% to the Department of Social and Health Services Division of Behavioral Health and Recovery:
 - Implementation of programs and practices aimed at the prevention or reduction of substance use;
- 10% to the Department of Health:
 - Creation and implementation of marijuana education and public health programs including a marijuana use hotline, a grant program for local community agencies focusing on prevention and reduction programs prioritizing marijuana use by youth, and media-based education campaigns regarding the health risks associated to marijuana;
- 5% to Washington State Health Care Authority:
 - Contracts with community health centers to provide primary health and dental care services as well as migrant and maternity health care services;
- 0.3% to the Office of the Superintendent of Public Instruction:
 - Fund grants to the Building Bridges program.

During the 2015-2016 Washington State Legislative Session, House Bill 2136 was passed in order to restructure the existing tax scheme¹⁶⁰. Thereafter, the 25% excise tax imposed on each tier of the licensed system was eliminated and a new 37% excise tax was imposed at the final point of sale – from licensed retailer to consumer.

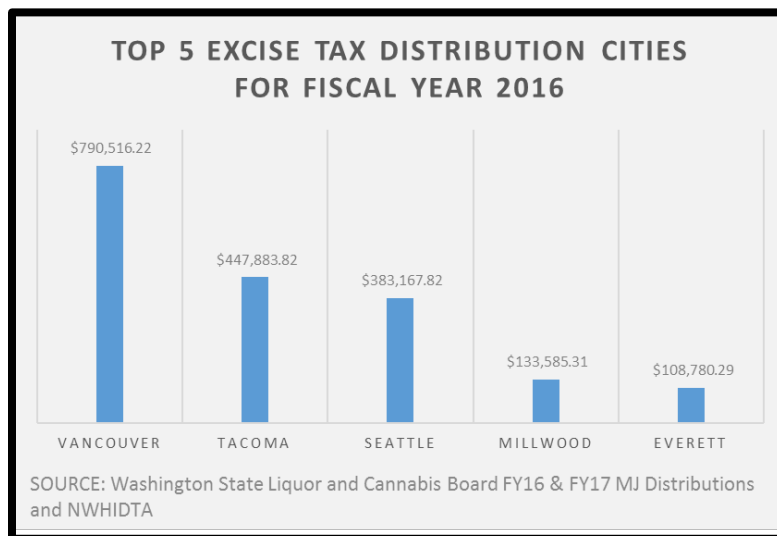
In addition to the higher excise tax rate, the distribution of those revenues was also changed. For fiscal years 2016 and 2017, \$6 million in excise taxes are to be dispersed to cities and counties that have approved licensed marijuana businesses to operate within their jurisdictions. These changes became effective on July 1, 2015.



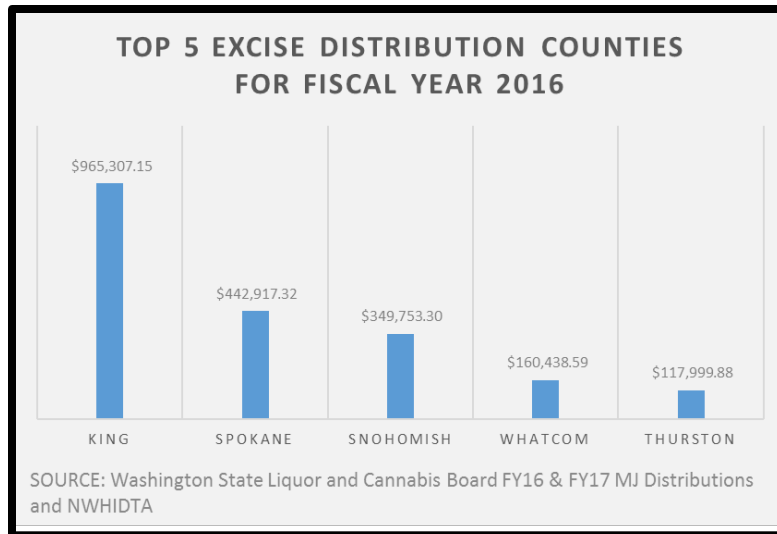
FY2015 data captured the excise tax dollars collected by means of the 25% imposed on each licensed tier. During that year, \$64,882,333 was generated in excise taxes. FY 2016 involved revenues resulting from the new taxing structure – 37% imposed from retailer to consumer at the point of sale. For that year, \$185,678,650 was generated in excise taxes. Preliminary excise tax information for FY 2017 shows that \$271,838,049 is due to the state.



According to data from the LCB, counties with marijuana businesses received \$3,261,496.58 in FY 2016 and \$3,195,866.80 in FY 2017. As for cities, \$2,738,503.42 was distributed in FY 2016 and \$2,804,133.20 has been distributed in FY 2017.



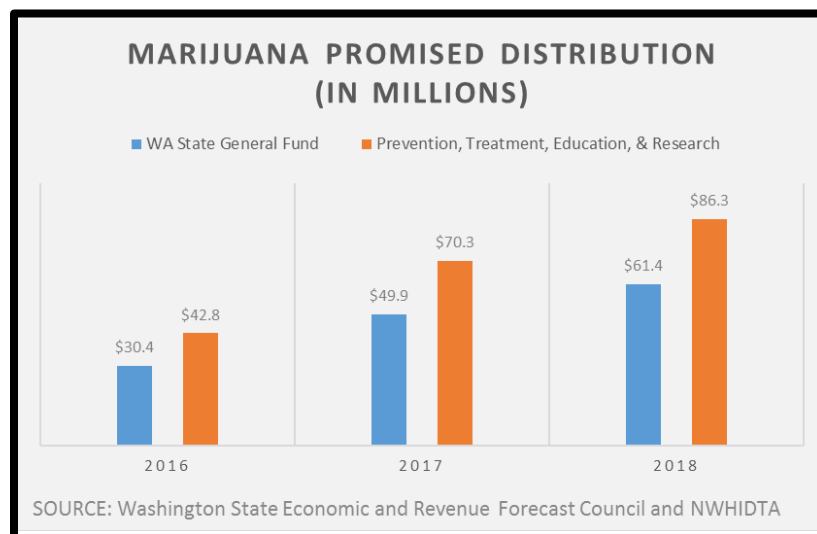
For FY 2016, the five cities that received the largest distributions from excise taxes were Vancouver, Tacoma, Seattle, Millwood, and Everett. In total, these five cities received \$1,863,933.46 or 57% of the total excise taxes generated for cities in FY 2016 (\$3,261,498.58).



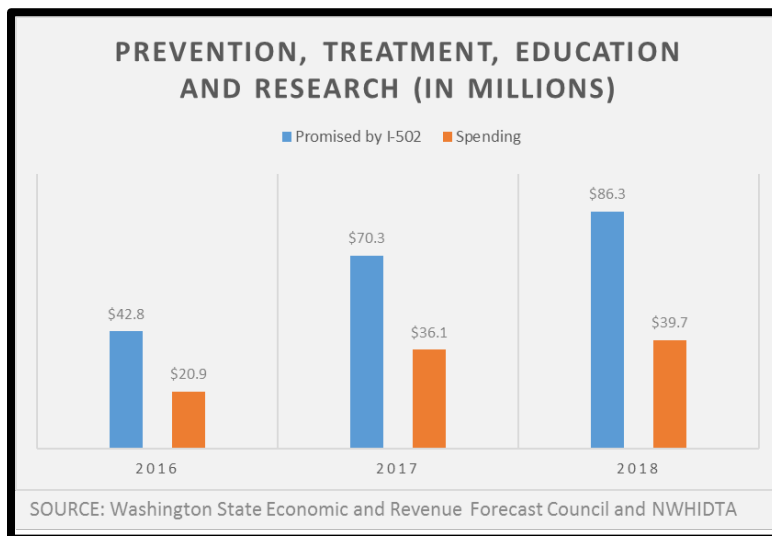
The top five counties receiving the largest distributions from excise taxes were King, Spokane, Snohomish, Whatcom, and Thurston. In total, these five counties received \$2,036,416.24 or 74% of the total excise taxes generated for counties in FY 2016 (\$2,738,503.42).

Distributions to cities and counties were not the only revisions made to the distribution of excise taxes – other recipients were also impacted. As explicitly passed, Initiative 502 voters approved the distribution of sizeable revenues for prevention, treatment, education, and research; unfortunately, what was promised has not unfolded.

According to an article published by *The Seattle Times* that reviewed the details of Initiative 502 and examined data from the Washington State Economic and Revenue Forecast Council, earmarked funds have been reduced by half in some instances¹⁶¹. The agencies negatively impacted by these changes include DSHS, DOH, the University of Washington (UW) and Washington State University (WSU), and the Office of the Superintendent of Public Instruction (OSPI). The article reveals that the Washington State General Fund is now the recipient of those tens of millions of dollars instead.

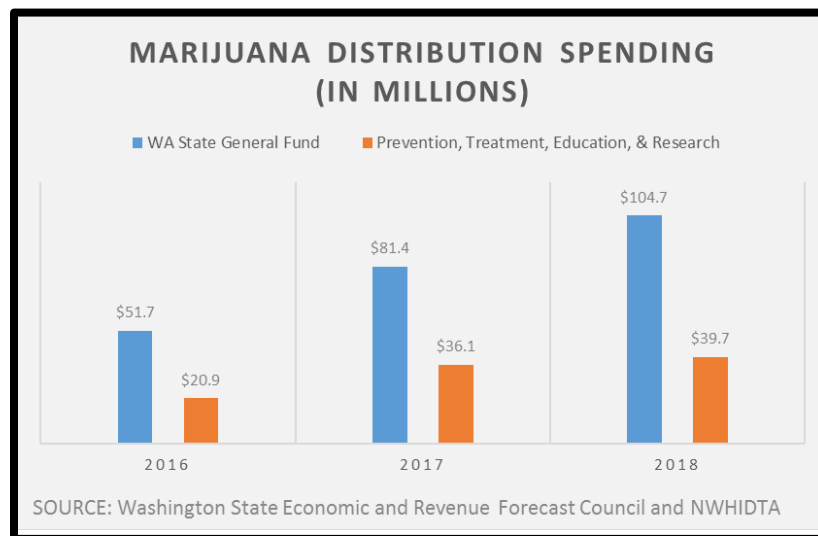


As depicted above, Washington State's voters approved Initiative 502 with the understanding that revenues collected from marijuana production and sales were to be prioritized for prevention, treatment, education, and research.



The chart above depicts the number of tax dollars originally allocated to DSHS, DOH, UW, WSU, and OSPI for prevention, treatment, education, and research in blue. For example, of the current and future revenues expected in 2018, DSHS alone was slated to receive \$113 million for substance abuse prevention and intervention programs. However, the agency is only to receive about half of that amount.

In addition, \$77 million was originally earmarked for a DOH marijuana education hotline and a statewide marijuana public education campaign intended for adults and youth. However, two-thirds of that allocation was eliminated, with only \$24 million remaining. Additionally, as of May 2016, the marijuana education hotline had not yet been created.



The graph above depicts how much has actually been allocated and is forecasted for allocation to the State General Fund and for public health related services. Almost \$100 million was dedicated to the General Fund in the budget passed by the Legislature in 2015.

Banking

Marijuana remains a Schedule I substance as defined by the Federal Controlled Substance Act (CSA). When Washington State legalized marijuana, the need for banking services to support this new market was not addressed. Banks are regulated by federal agencies and, despite some assurances made by those agencies, have been quite reluctant to establish business relationships with the marijuana industry.

The Department of the Treasury Financial Crimes Enforcement Network (FinCEN) is one of the entities that protects the financial system in the United States. Among other charges, it is responsible for prosecuting money laundering crimes and for keeping terrorist finances from infiltrating the system. Given that marijuana is illegal under federal law, providing financial services to the recreational marijuana industry could be considered to be money laundering.

In February 2014, a few months before Washington State's commercialization, a guidance letter was published by FinCEN to clarify the Banking Secrecy Act¹⁶². The letter addressed the same eight priority points specified in former Deputy Attorney General James Cole's memorandum and stated that if a bank or credit union decides to accept accounts from marijuana businesses, the risk and responsibility falls on them.

Banks must act on their due diligence to ensure that business partners are operating within the legal framework of the state and in accordance with the DOJ policy. If not, the banks must file suspicious activity reports (SARs) when questionable situations arise, including:

- Marijuana Limited:
 - Identifying that the banking customer is involved with a marijuana-related business and no suspicious activity has been identified;
- Marijuana Priority:
 - Identifying that the banking customer is involved with a marijuana-related business and suspicious activity has been identified;
- Marijuana Termination:
 - Identifying that the banking customer is involved with a marijuana-related business and suspicious activity has been identified, such as money laundering, and filing to terminate the customer relationship.

FinCEN gives examples in its guidance for the types of activities banking institutions should be monitoring such as: more revenue than reasonably suspected; rapid movement of funds between deposits and withdrawals; unsatisfactory documentation; and business owner(s) who live outside of the state in which the business is located.

With the guidance issued from FinCEN, banks and credit unions can operate with some assurance. Three institutions in the state of Washington have openly opted to service the recreational marijuana business industry.

Numerica Credit Union was the first institution to take this step. Located in Eastern Washington, it is the fifth largest credit union in the state. Numerica opened its doors to licensed recreational producers and processors but continues to exclude licensed marijuana retailers¹⁶³. Restrictions were imposed on the businesses to ensure legitimate banking accounts and compliance with federal guidelines. Some restrictions include no issuance of debit or credit

cards, all deposits need to be made in person, and the account holders must reside in the community where one of the 17 branches is located.

Salal Credit Union was the second institution to welcome licensed recreational marijuana businesses¹⁶⁴. The credit union is located in Seattle. Similar to Numerica, Salal only agreed to provide banking for producers and processors. One service this credit union is offering that Numerica did not is business loans. According to National Public Radio, Salal approved its first equipment loan for a licensed recreational marijuana processor to purchase a \$400,000 extraction system in order to create marijuana oil for edibles.

O’Bee Credit Union became the third institution to offer services to recreational marijuana businesses. The Olympia-based credit union became involved at the beginning of 2015 and has reported 30 marijuana related clients located in Thurston and Pierce Counties¹⁶⁵. The credit union has reported that these account holders deposit anywhere from \$5,000 to \$25,000 at least once or twice a week. The credit union takes anywhere from three days to two weeks to approve an account for a marijuana-related business. Services provided by O’Bee include deposit services, checking, savings, and the ability for marijuana business employees to cash their checks.

Aside from these three credit unions, there are several other banking establishments quietly serving the industry. According to the Director of the Washington State Department of Financial Institutions, several dozen financial institutions are involved with the marijuana industry.

Outside of the banking system, some marijuana businesses have opted for alternative fiscal solutions. With significant amounts of cash on hand, the businesses are targets for crime such as burglary or robbery. Some retailing locations have therefore opted to utilize mobile apps allowing businesses and consumers to purchase marijuana on an online platform, eliminating the need for cash.

One example is PayQwick, which operates in partnership with multiple retailing locations across Washington, Oregon, and Arizona. PayQwick is also a federally registered money services business licensed by the Washington State Department of Financial Institutions, the Oregon Division of Finance and Corporate Securities, and the Arizona Department of Financial Institutions. The app links to a consumer’s bank account directly from his or her phone or from a card issued by the company. The site also allows for businesses to pay their state mandated taxes through the money service¹⁶⁶.

Industry Expansion

When recreational marijuana became legal, it not only opened up a market for sales but also provided an opportunity for a new multi-faceted industry to flourish. Washington State has, for example, become a tourist attraction that offers recreational marijuana to visitors.

Some of the first tourist businesses to open included guided bus tours of several licensed marijuana businesses; painting classes where patrons are allowed to bring marijuana for consumption during class; and transportation services based at the airport and ferry terminals to take tourists to licensed marijuana retailers. Other novel businesses include rental

accommodations that permit marijuana consumption on the premise, including rental marijuana paraphernalia for occupants.

National expansion for local marijuana businesses, trademarks, and products is a common aspiration. With more states legalizing, and with Washington State now allowing out-of-state investors, the beginning of national brands is on the horizon.

The LCB passed emergency rules in March 2016 that lifted the ban on out-of-state investors under WAC 314-55-035¹⁶⁷. Investors will, however, be subjected to a financial investigation and are not allowed any ownership of the specific licensed marijuana business¹⁶⁸. Subsequently, the state's ties to other legalized as well as non-legalized states are strengthening.

A marijuana branding company based in Las Vegas, Nevada, has collaborated with partners in Washington State as well as Colorado under the name 'Strainz'¹⁶⁹. The company has built manufacturing facilities for marijuana-infused products in Colorado, medical marijuana dispensary shipping services in Nevada, and is partnering with a Washington State-based infused-product manufacturer to support not only the licensee's product line, but 'Strainz' as well.

The Cannabis Investment Network (CIN) launched in early 2017 as an angel-investment firm for marijuana businesses in Alaska, Oregon, and Washington State¹⁷⁰. The CIN's main function is to link investors with potential investment opportunities in the marijuana industry. Marijuana businesses include those specifically licensed for production, manufacturing, and retail sales as well as businesses that support other functions of the industry within the Pacific Northwest.

The exponential growth of the marijuana industry has led to the development of various expositions and conventions addressing all aspects of the recreational and medical markets. On an annual basis, CannaCon hosts a three-day exposition for persons involved either directly or indirectly with the industry. From production seminars, panels on banking, and first-hand interaction with manufacturing suppliers, the expo has become a growing event in the city of Seattle¹⁷¹.

The National Cannabis Industry Association hosted annual Cannabis Business Summits across the United States and in Washington State in 2016¹⁷². The three-day summit advertises over 100 speakers, upwards of 4,500 attendees, and exhibitors displaying the latest technology for growing and manufacturing marijuana as well as operating strategies for marijuana businesses.

The local medical marijuana community has been active in Washington State for decades. The annual Hempfest event in Seattle is an attraction for active medical and recreational, as well as potential, consumers. According to its webpage, Hempfest is a political protest rally organized to change the nation's stance on illegal marijuana. Even after legalization occurred in Washington in 2012, the 'protestival' continues to occur on an annual basis to advocate for decriminalization and legalization across the United States¹⁷³. In 2016, Hempfest marked its 25th anniversary in Seattle.

The weekend-long event is culturally accepted as a venue for users of all ages to attend and consume marijuana in the spirit of legalization. The event includes speakers, concerts, and a variety of food vendors that contribute to the atmosphere of the event. Roughly 100,000 people attend annually.



Contests and competitions featuring marijuana products are highly anticipated events within the marijuana industry. In the state of Washington, however, state-licensed recreational marijuana businesses are not allowed to partake in such events. Before medical marijuana was integrated into the regulatory system, it was the only local industry allowed to participate. Now with both markets under the regulatory mantle, neither is permitted to partake.

The DOPE Cup has become an annual marijuana competition held in Washington State, continuing now for six years. Marijuana flower, concentrates, infused edibles and topicals compete for recognition and status.¹⁷⁴ Competition categories include 'Best THC', 'Best Edible Sweet', 'Best BHO THC', and 'Best Topical' for both medical and recreational products.



Sovereign Indian Nations

Tulalip Marijuana Conference

Tribal leaders from across the nation met in Washington State in 2015 to participate in the first Tribal Marijuana Conference at the Tulalip Reservation. Over 75 leaders met to discuss how to become involved in the commercial marijuana market. Political and policy leaders from Washington State were present along with the chair of President Barack Obama's National Indian Law and Order Commission¹⁷⁵.

A memorandum authored by former Director Monte Wilkinson, Executive Office of the United States Attorney, in 2014 provided guidance to tribal nations. The conference was an opportunity to ask questions and to discuss the language and intent of the law as to how it specifically applies to tribes and how it pertains to both the medical and recreational marijuana markets.

During the conference, many tribes disclosed an interest in becoming active members of the marijuana industry. As of this Report's publication, four tribes have signed marijuana compacts with the state of Washington and the LCB: the Muckleshoot; Puyallup; Squaxin Island; and Suquamish nations. Additionally, six more tribes – the Port Gamble S'Klallam, Jamestown S'Klallam, Samish, Spokane, Stillaguamish, and Tulalip nations – are in discussions and preparations for signing compacts to join the recreational and medical marijuana industries¹⁷⁶.

Section 10: The Upcoming Market

Introduction

During the 2017 Washington State legislative session, one consolidated bill was passed addressing the medical and recreational marijuana markets:

- Senate Bill 5131: Addressing Provisions Concerning Marijuana with Respect to Research Licenses, Local Authority Notifications, the Retail Licensing Application Process, Processor Wholesale Events, and Jurisdictional Requirements

Senate Bill 5131:

On May 16, 2017, Washington State Governor Jay Inslee signed Senate Bill 5131 into law, effective July 23, 2017¹⁷⁷. This omnibus bill added provisions to existing state law while adding new regulations to both the recreational and medical marijuana markets.

State-licensed marijuana producers may now sell immature marijuana plants, marijuana clones, and/or marijuana seeds to registered cooperatives, qualified medical marijuana patients, and medical marijuana designated providers. All plants grown by cooperatives are now required to be obtained from a licensed marijuana producer. Qualifying patients and designated providers must possess a valid marijuana recognition card to purchase plants, clones, or seeds from a producer.

A retail licensee may not possess more than five total marijuana retail licenses. This provision also applies to those with a financial or other ownership interest in the retail business. If a retailer license is issued but the business does not become operational within two years the LCB may require the licensee to forfeit the license. This forfeiture occurs at the full discretion of the LCB. A possible exception to such forfeiture would pertain if the license was granted in a jurisdiction where a ban or moratorium prohibits retail sales. The LCB may not issue a license within Indian Country that is located on fee patent lands within the exterior boundaries of a reservation without the consent of the federally recognized tribe that is associated with the reservation.

Advertising is also addressed: messaging for marijuana businesses or products may not be displayed within 1,000 feet of a school, playground, recreation center or facility, childcare center, public park, or library; or any game arcade that is not restricted to persons aged 21 years or older. Additionally, no advertisements may be placed at, on, or within any bus stop, taxi stand, transportation waiting area, train station, airport, or a similar transit-related location. Also, advertisements may not directly target persons outside of the State of Washington. Lastly, no signs or placards may be placed within arenas, stadiums, shopping malls, fairs that receive state allocations, farmers markets, or video game arcades.

With regard to other marketing restrictions, no advertisements or promotions may target youth either directly or indirectly. The use of toys, inflatables, movies, cartoon characters, or any other depiction or image likely to be appealing to youth is not permitted. Any marketing targeted to the interests of youth to engage in purchasing or consuming marijuana or marijuana

products is not allowed. Signs may not depict any marijuana plants, marijuana products, or images that may be appealing to children. Furthermore, commercial mascots are not permitted. These mascots would include persons in costume, inflatable tube displays, and sign twirlers. The use of these advertising techniques may not be outside or in proximity to a marijuana business in order to attract vehicles or passersby.

Billboards may be used by retail marijuana businesses for the sole purpose of identifying the business name, the nature of the business, and providing directional information to the retailer. The use of billboards outside of that provision is prohibited if seen from any street, road, highway, right-of-way, or public parking area. Any advertisement restrictions may be enhanced if the local jurisdiction adopts an ordinance addressing marijuana marketing. The LCB may collect fines resulting from any advertisement violations which will be deposited into the Dedicated Marijuana Fund.

Marijuana delivery for non-commercial purposes is now permitted for those over the age of 21. The delivery may be to one or more persons, occur within a single 24-hour period, and may not be connected to any financial consideration. The amounts that may be delivered are one-half ounce of useable marijuana (roughly 14 grams), 3.5 grams of marijuana concentrate, 8 ounces of marijuana-infused product (solid form), and 36 ounces of marijuana-infused product (liquid form). The delivery must occur outside of the view of the public and in a nonpublic place. Most importantly, the marijuana products must be in the original packaging as purchased from a marijuana retailer.

Marijuana businesses may enter into licensing agreements or consulting contracts with any person(s), partnerships, employee cooperative, association, nonprofit corporation, or corporation. These business deals may involve any goods or services that are registered as a trademark under federal law; any unregistered trademark, trade name, or trade dress; or any trade secret, technology, or proprietary information used in relation to marijuana product manufacturing or service(s) for a marijuana business. All such agreements must be disclosed to the LCB.

The Washington State Department of Agriculture (WSDA) is to develop a self-sustaining program certifying state-licensed marijuana producers and processors who adopt manufacturing practices that adhere to the federal Department of Agriculture's National Organic Program. In order for producers and processors to be certified, facility and production inspections along with routine product testing must be completed. Even once a certificate is granted to a licensee, the marijuana or marijuana products may not be labeled "organic"; however, the word "natural" would be permitted. WSDA anticipates a fully functioning certification program by 2019.

The LCB will also be required to complete a study focused on the regulatory option of recreational plant possession and cultivation for consumers. The findings of the report are due December 2017 for review by the appropriate legislative committees. The report must address all findings, recommended adoptions and implementations for the regulatory system in addition to enforcement. The study must also abide by the 2013 Deputy Attorney General Cole Memorandum.

Section 11: Conclusion

The impetus for developing and publishing Volume 2 of the *Washington State Marijuana Impact Report* derives more from the significant policy and administrative changes made to the marijuana industry since the publication of Volume 1 than the advent of unforeseen, adverse consequences.

While production continues to increase, accessibility and availability does so in step. Wholesale and retail prices are stabilizing, and while some communities continue to grapple, most are adjusting to and accommodating legalization. In contrast to the landscape in other states where marijuana has been legalized, commercialization is occurring throughout Washington State, not just in a minority of counties, cities, and towns.

Which is not to say that adverse consequences have diminished. The incidence and prevalence of drivers impaired by marijuana continues to increase as do fatal crashes involving both youth and adults. Calls to the Poison Center regarding marijuana-related incidents continue to increase at an alarming rate for children and toddlers. Two thirds of the seizures in Washington State in 2015 involved youth aged 12 to 17 years. The diversion of marijuana grown in Washington State continues at a steady rate, impacting 38 different states across the nation. Public schools continue to experience increases in marijuana-related suspensions and expulsions. And illegal outdoor growing operations on public and Native American lands continue unabated, significantly degrading the environment.

Yet the travails and excesses experienced in other states where marijuana has been legalized do not seem as severe and unrelenting in Washington State, due perhaps to both prescience and luck. Initiative 502 prohibits the cultivation of marijuana in one's home or personal property without a medical authorization, and then only in a very limited way, closing illicit avenues left open elsewhere. And the recreational marketplace in Washington State was not superimposed on an existing medical market. It was implemented as an entirely separate enterprise and was enhanced with the eventual elimination of collective gardens and dispensaries – quite unlike any other state's model.

Of the promises made while Initiative 502 was on the ballot, only one has come to pass. Legalization did not empty the state's correctional facilities. It did not diminish or eliminate the black market. And it did not ameliorate racial disparities in the criminal justice system. But it has, and will likely continue to do one thing very well: generate sales and revenue. Unlike the "retail apocalypse" occurring in many parts of the country, retail sales in Washington State increased 6% in 2016, led by drug and health stores – the category that includes recreational marijuana stores. Sales at drug and health stores increased 17% to \$2.63 billion, and marijuana sales made up 27% of that. Marijuana has become – and will continue to be – an unequivocal cash crop.

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