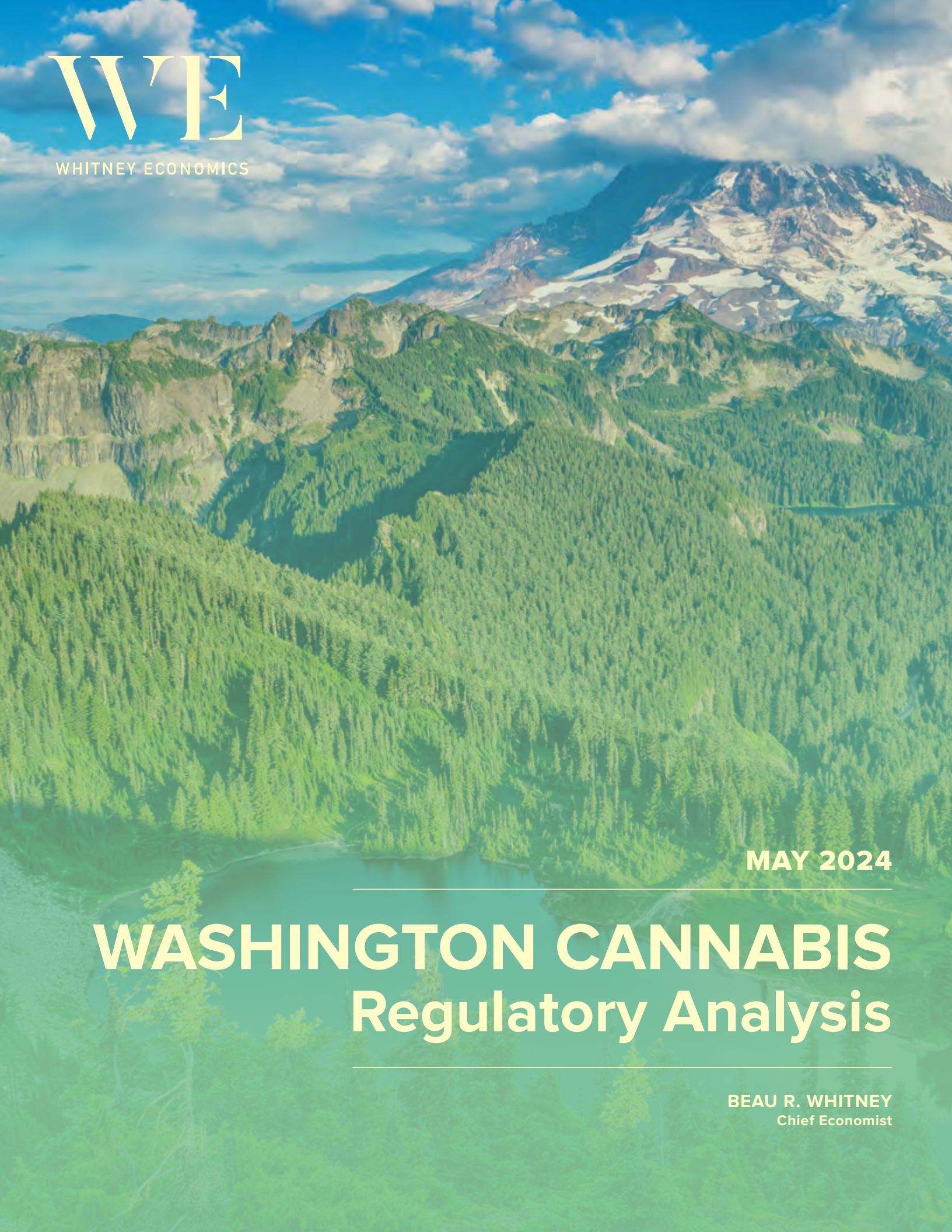

WHITNEY ECONOMICS

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WASHINGTON CANNABIS
Regulatory Analysis

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EXECUTIVE SUMMARY

In 2012, the state of Washington legalized cannabis for adult-use purposes. It authorized the Washington State Liquor and Cannabis Board (LCB) to develop and deploy a cannabis regulatory program. A lot has changed since 2012 and now 40 states have deployed a medical cannabis regulatory program of which 24 are also adult-use. As the market has changed, so too have the views of consumers, regulators and legislators. In order to keep pace with the changing environment, the Washington legislature passed RCW 69.50.335 and RCW 69.50.345 into law and the LCB was tasked with developing thresholds for licensure and to focus these thresholds at the county level.

An analysis was commissioned by the LCB and Whitney Economics was contracted to provide both data and insights pursuant to these laws. Below are some of the findings.

Retail Licensure

- There are 473 cannabis retail licenses issued by LCB. In 2023, Washington retailers sold $1.22 billion in cannabis products.[1]
- By 2030-2035, 634 retail licenses across Washington are estimated to be economically viable.
- While opportunities exist in the retail sector in the 2025 – 2026 timeframe, they are more limited in scope and must be examined on a county-by-county basis.
- There was between 50% - 55% legal consumer participation. Described differently, between 45% - 47% of the total demand was satisfied via illicit channels.[2] This is a lower number than previous reports provided to the LCB due to differences in the methodological approaches and the number of consumers in the market.
- If greater legal participation is achieved, there will be an increased demand for additional retail outlets sooner.[3]
- If there was 100% legal participation by consumers (zero illicit demand) there would be a maximum potential of 793 retail licenses at any given time. This is considered the theoretical maximum in terms of licensure. Most states achieve between 80%-85% legal participation once their markets have matured. Therefore, the actual number of viable licenses to support legal demand will be lower than this maximum.

Producer Licensure

- In 2034-2035, there is an estimated demand for 891 thousand square feet that can be allocated to various producers depending on license type. The total market demand is the total amount of cultivated output required to support all cannabis product types Flower, pre-rolls, edibles, tinctures, etc.[4]
- Current total supply capacity is 2.6 million pounds. In 2024, total supply requirements (Cultivated output) are 612 thousand pounds. This means that all supply required to satisfy the legal demand would only require producers to operate at less than 30% capacity.[5]
- Oversupply is a key driver in declining prices. This is impacting producer profitability, but is good for consumer conversions into the legal market.

- With the saturation of supply, opportunities for additional licensure in producer/cultivation sectors are limited or non-existent. Additional licenses would only lead to more excess supply.

Processor Licensure

- In 2034-2035, 1,782 to 3,340 processor licenses in Washington are estimated to be economically viable. This includes such businesses as edible manufacturers, tinctures, balms, vapes and other non-flower oriented "derivative" products.
- Processor licenses are a large opportunity for greater participation in the cannabis industry. With low barriers to entry and an abundance of both biomass supply and consumer demand, there is significant opportunity for processors and product manufacturing.
- Processors and product manufacturers are mostly made up of smaller businesses, so this opens up an entire sector for innovation and product development. This is a highly favorable sector for applicants regardless of size.

Overall, in Washington

- The key to increasing license demand in all areas is to drive more legal participation. This will, in turn, open up opportunities for greater operator participation.
- There is limited economic viability opportunities for retail licenses in 2024 and 2025. There are 569 licenses allocated by the LCB, but not all will be needed until the 2027/2028 timeframe. If greater legal participation is achieved, there will be an increased demand for additional retail outlets sooner.
- In terms of producer licenses, Washington is oversupplied. Theoretically, the total market with 100% legal participation requires only 1.1 million pounds.
- Processors are an important sector in the cannabis industry. This license type has the largest number of economically viable licenses through 2035. This is because processors have stable prices, are not as dependent on scale, and have more predictable revenues. There is a demographic shift in consumer demand in favor of derivative products (such as beverages), with 50% and 55% of all retail revenues coming from derivative products.[6]
- Some focus by LCB to establish some guardrails related to the expansion of licenses is required, but overall the LCB has managed the industry well, especially considering it was the first to legalize.

The below chart shows the estimated forecasted demand for cannabis licenses in Washington. For reference, there are currently 473 retail licenses, 1,039 processor licenses (with most attached to a producer license as well), and a total supply capacity of 2.6 million pounds from producers.

Projected Number of Cannabis Licenses To Be Economically Viable	Estimated Demand for Producer (pounds)	Processors	Retail
5-Year Forecast (2029)	**835 thousand pounds**	**1,670**	**595**
10-Year Forecast (2034)	**891 thousand pounds**	**1,782**	**634**

Note:
Producer demand is defined in terms of pounds of output, given the different variety of license types.
Processor forecasted licenses assumes 500 pounds of cultivated output per processing license.
Retail license forecast assumes a TEV (Threshold of Economic Viability) of $2.5 million per licensee
Source: LCB, Whitney Economics

Whitney Economics would like to thank the LCB for this opportunity to provide our expertise.

Beau Whitney, Chief Economist, Whitney Economics

OBJECTIVE

The objective of this report is to examine the level and extent of cannabis licensure at cultivation, processing and retail levels in the state of Washington, in order to assess whether additional licenses issued would be economically viable at each level. The analysis is broken down at state and county levels.

Pursuant to RCW 69.50.335, the Washington State Liquor and Cannabis Board (LCB) was asked to adopt rules establishing a threshold of the number of retail, producer, and processor licenses that can be located in each county. Pursuant to RCW 69.50.345, the LCB was asked to adopt rules establishing the maximum number of retail cannabis licenses for each county. As such, this report determines the appropriate number of licenses for retail, producers, and processor licenses through 2035.

INTRODUCTION

Regulating cannabis is not easy and determining the appropriate number and type of cannabis licenses is very complex. The two most common approaches by legislatures and regulators are to either offer an unlimited number of licenses, or to restrict the number of licenses either based on population or other (in some cases, arbitrary) metrics.

As one of the first states to deploy statewide legal adult-use cannabis, Washington has long been used as a basis of comparison by other states. Washington took a different approach to cannabis licensing, limiting the number of retail licenses (The application window was open for only a limited amount of time after both I-502 in 2012 and SB-5052 in 2021-2022 and has not been re-opened), while largely keeping cultivation and processing licenses unlimited. Meanwhile, the state's cannabis market has evolved, and so has policy. In 2022, the Washington legislature tasked the Liquor and Cannabis Board (LCB) to assess the potential markets at a county level, and develop a methodology whereby licenses of all classifications could be allocated at that county level.

U.S. CANNABIS MARKET UPDATE

State vs. Federal Dynamic

There are billions of dollars of demand for cannabis in the United States, and yet only a minority of the demand is satisfied via legal, regulated markets. Of the $105 billion in U.S. Total Market Demand (TAM)[7] only $28.8 billion was satisfied through legal channels that are regulated by the states.[8] Cannabis remains illegal at the federal level in the U.S. Despite its illegality, state-based regulatory programs have been established in 40 states for medical purposes, with 24 also allowing for sales of cannabis for adult-use purposes. Given this state versus federal dynamic, the cannabis industry does not operate like other regulated industries. As such, cannabis operators are not afforded a broad set of federally sanctioned benefits including bankruptcy protection and common business tax deductions. Also, as a result of federal cannabis prohibition, typical agencies in charge of data collection are not collecting data on the cannabis industry. Federal agencies that aren't collecting cannabis data include the Bureau of Labor and Statistics, the Department of Census and the Bureau of Economic Analysis. Without public data, policy makers and regulators are challenged when attempting to make informed, data-driven decisions.

Market Distortions

In addition to the lack of data collection, the federal illegality also creates distortions in the marketplace. For example, cannabis operators often find it difficult to obtain banking services, basic financial services, and even insurance. Cannabis operators also cannot participate in interstate commerce, because all cannabis produced in a given state system must remain in that state. Without a system of interstate commerce, there will be limits to growth and to expansion opportunities. Cannabis operators are also taxed heavily at the federal level, which puts an undue burden on operators operating on razor thin margins. States have also added a heavy layer of regulatory compliance onto cannabis operators. The cost of compliance is very high in most cases. It is no surprise that in a recent survey on business conditions, cannabis operators reported that only 24% of operators nationally were profitable. While inputs from Washington on the survey were limited, this trend appears to also hold true for Washington operators.[9]

Three Kinds of Cannabis State Market: Mature, Ramping and Emerging

Despite many obstacles, the U.S. market continues to grow. The source of national growth is coming from newer emerging states. For perspective, states in our national analysis are broken out into three categories: **1)** Mature states, **2)** Ramping state markets, and **3)** Emerging state markets.

1. Mature state markets have deployed legal programs and have converted a majority of the total potential demand into the legal marketplace. **The state of Washington would be considered a mature state market**.

2. Ramping state markets are states that have deployed legal regulatory programs but are still in the process of converting consumers away from the illicit market and into the legal one. Ramping states tend to be the source of the largest amount of growth and are the largest contributors to growth from 2024 through 2030 and beyond.

3. Emerging state markets are those that have just recently deployed a legal program, but is still in its first few years of operation. Emerging states tend to have large amounts of demand remaining supported by illicit suppliers. In recent years, mature markets have seen a general decline in their overall markets, or whose growth has leveled off. Emerging states are still experiencing growth as they continue to convert consumers into their legal systems.

Even with this set of complex market conditions, the total legal revenues associated with cannabis sales in the U.S. totaled $28.8 billion in 2023. Legal U.S. cannabis retail sales were an average of $2.4 billion per month. This was an increase from $26.1 billion the year before.[10]

WASHINGTON STATE CANNABIS MARKET UPDATE

Since its legalization of cannabis in 2012, Washington has established itself as a major cannabis market. Washington ranks 14th overall in terms of total addressable market (This number is based on the number of consumers in the state).[11] National statistics rank Washington 9th overall in the number of consumers based in 2022.[12] At $1.2 billion in sales in 2023, Washington ranked 10th in total legal sales.[13]

From a revenue perspective, the Washington market is roughly split between flower sales (47.5%) and derivative product sales (52.5%).[14]

Washington has issued approximately 2,498 active cannabis licenses for producers, processors, retailers and distributors. These licenses represent more than 4% of all U.S. cannabis licenses. Washington also employs more than 18,700 workers, out of the 440,445 total workers in the U.S. legal cannabis industry.[15] With over $1.2 billion in sales, and such strong employment, the Washington cannabis market is a strong driver of economic activity in the state.[16]

KEY ELEMENTS THAT DETERMINE SUCCESS OR FAILURE IN A STATE REGULATORY SYSTEM

Just because a regulated adult-use or medical market is deployed does not guarantee the success of the program. There are several key factors that influence the level of success a regulatory program will have. Each factor influences another, so striking a balance between the elements is challenging. Despite the fact that many new or emerging states look to previous roll-outs for guidance, no one model has emerged as the one to duplicate exactly. Each regulatory program has strengths and weaknesses and is unique. Price, structure, supply and access determine the success of a roll out, and are the four key factors of the analysis in this report.

Price of cannabis relative to the illicit market – Consumers are extremely cost conscious when it comes to making a purchasing decision. Regular consumers are savvy enough to know the differences in price in the legal and illicit channels. If the difference in price is too great, where illicit prices are lower than legal, the pace of conversion by consumers into the legal channel will slow considerably.

Regulatory structure – Regulatory structure plays a role in the success or failure of a program, since it can influence the amount of access a consumer may have to cannabis products or the amount of supply available. Regulations can also influence the potential success of the licensees. Maintaining a healthy group of licensees is a major challenge for regulators. If licensees are not profitable, or face operational challenges, the regulators may unintentionally create externalities, such as diversion, that may exacerbate public safety related issues.

Supply of cannabis – Supply plays a major role in the success of a regulated market. If there is too little supply, prices will remain elevated, and consumer participation in the legal market will slow. If the supply is in excess, prices will fall, which increases legal consumer participation, but if prices fall too much, it may result in a lack of profitability, economic stress and poor decisions by operators when it comes to diversion and public safety.

Consumer access to cannabis – Consumer access helps to reduce the influence of the illicit market and helps drive legal participation. Consumers will drive up to 30 minutes to purchase cannabis products legally, however if they have to travel too far, legal participation declines.[17] The more access a consumer has, then better economic opportunities there are for the entire cannabis supply chain.[18]

> *The key is to incentivize consumer conversions INTO the legal market. Without access to legal cannabis, the choice is already made.*

THE INFLUENCE OF LOCAL JURISDICTIONS

The Influence of Local Regulations

City and county rules and regulations can have a profound impact on the success or failure of a cannabis operation. In some instances, city and county ordinances can eliminate an opportunity entirely.[19] Currently there are both cities and counties that prohibit cannabis sales or operations in Washington. The impact of opting out of allowing cannabis cannot be overstated. By opting out of legal cannabis, counties and cities are not allowing its citizenry access to legal, tested and regulated cannabis products. Without access, consumers are forced to purchase through illicit channels, in addition, cities and counties are opting out of generating additional economic opportunities that extend beyond the mere sale of cannabis. The lack of access was mentioned as a primary reason for consumers purchasing from the illicit market.[20]

Opting Out Also Leads to Additional Public Safety Risks

Driving consumers into the illicit market is just one issue relating to opting out. In addition, there are increased public safety issues that result from the lack of access. For example in a study from the National Institute of Health (NIH), in states where there is access to legal cannabis, prescriptions for opioids decline 11%[21] and opioid related deaths decline 24.8%.[22] **Providing access may help address the issue of opioid use while at the same time have the potential to reduce health care expenditures by the cities, counties and state.**

It is Critical to Remain Vigilant on Reducing Youth Usage

Research on the impact of cannabis on drug use and the impacts of legalization is still an area that requires further research. In some instances, research results from one study may contradict another. Research related to the impact of legalization on youth usage is incredibility important in order to ascertain the effectiveness of regulatory prevention policies.

Recent AMA Research on Youth Usage and Propensity to Use

In a report published by the American Medical Association (AMA),[23] access to legal cannabis results in a decrease in youth usage. The report indicated that passage of recreational cannabis laws (RCL) "was not associated with adolescents' likelihood or frequency of cannabis use," the analysis found, "although negative total effect estimates indicated significantly lowered use following RCL." Nor were increases associated with the launch of recreational cannabis retail sales (RCR). "Results," the study concludes, "suggest that legalization and greater control over cannabis markets have not facilitated adolescents' entry into substance use." Over time, it seems adult-use marijuana laws led to lower odds of any cannabis use. "Each additional year of RCL," the study says, "was associated with 8% higher odds of zero cannabis use (lower likelihood of any use), with non-significant total estimates." So, the benefit of opting into providing legal cannabis in a regulated market is that may reduce youth usage and issues associated with opioid use as well. **While cannabis legalization is by no means a panacea, the economic and public safety benefits support many public policy objectives that extend beyond the simple issue of providing access to legal cannabis.**

Prohibition Through Legalization.

Local zoning and licensing laws can influence or even prevent cannabis operators from establishing a business. It is important that there is a balance maintained between state regulations and local controls. Opt-out is often considered an opt-in to the illicit market. It is imperative that when establishing policy at one level, lawmakers consider the business environment and impacts at other levels as well. If these important considerations are ignored, policy changes may result in unintended consequences such as economic stress on operators, disincentivizing consumer participation, increased illicit diversion, and failure to meet public policy objectives related to social equity and public safety. **The more difficult a city or**

county makes it for businesses to operate, the less legal participation there is. The analysis in this report does not adjust for cities and counties that currently have moratoriums in place.

Collaboration Between States, Counties and Municipalities is Crucial for Success

Collaboration between cities, counties and state regulators is critically important from a public policy perspective. It is equally important for states to understand the federal environment as well. Despite the federal illegality of cannabis, cities, counties, states and the federal government all must be aware of the impact each group is having on cannabis operators, or otherwise they can have a negative impact on the businesses, which, in turn can negatively impact other public policy objectives related to illicit activity, public safety, protection of the youth and addressing social justice issues. Cannabis is a local issue, so while acting locally one must think globally as well.

RETAIL CANNABIS LICENSES IN WASHINGTON

The retail sector is critically important to any cannabis supply chain, because it provides consumers with access to cannabis products, it is a source of significant economic activity, and retailers generate significant amounts of business and tax revenue.

- Overall, the revenues in the retail sector account for roughly 59.3% of the entire U.S. cannabis value chain.[24]
- U.S. retailers averaged $2.5 million per year in revenue.[25]
- Several states had retail averages in excess of $10 million, while others were at or below $1 million.[26]
- Washington retailers averaged $2.6 million ranking 23rd out of the 38 states with some form of legal access.[27] It is somewhat coincidental that Washington retail averages mirror the U.S. national average for retail sales per store.

Retailers Pay Significant Federal Taxes

While it is a significant source of economic activity, the retail sector also pays the most in terms of business taxation, particularly at the federal level. Due to the federal illegality of cannabis, cannabis operators are not permitted to claim many deductions off of their federal tax liability. As a result, cannabis retailers often experience an effective tax rate in excess of 70%. In a recent study conducted by Whitney Economics, the overall cannabis industry paid in excess of $2.12 billion in federal taxes in 2022 as a result of the federal tax code 280E limiting standard business deductions. Of this amount, $1.81 billion was paid by retailers.[28]

How do Federal Taxes Impact Retail Licensees?

Federal taxes can make or break the profitability of a cannabis company, and particularly at the retail level. If a retailer falls behind on tax payments, there are very few tools available to catch back up. Retailers cannot simply raise prices to make up the difference, since so much will be taxed. Also, typical financial instruments are not available to cannabis operators, since banks are reluctant to make loans. The loans that are made are often high interest loans, with rates in the range of 25% - 35%.[29] With higher interest rates and fewer lenders, access to capital has made it difficult for cannabis operators to start-up or fund ongoing operations. This situation can lead to economic distress, loss of business, or desperate actions taken by the retail operators.

How Much Do Retailers Need to Generate to Remain Viable?

Considering the cost structure of a cannabis retailer, the highest costs to run the business are product acquisition, labor and federal taxes. In order to cover additional costs of doing business such as rent, health care, security, compliance, etc. A retailer needs to generate approximately $2.5 million per year in order to remain viable.[30] Smaller operators in rural parts of the U.S. require approximately $1.6 million per year as they require less labor. This does not mean to imply that if a business generates revenues below this threshold, that they will immediately go out of business. However, the farther below this level of revenue, the greater the propensity for business failure, diversion of products and other illicit activities. Whitney Economics uses this Threshold of Economic Viability (TEV) as its guiding principle in determining the number of licenses in a given market. A more aggressive analysis is also included in this report, but these more aggressive models are more viable in rural areas than in the more densely populated counties.

Chart: Determinants in the Threshold of Economic Viability

Description: This chart examines some of the main components of determining the threshold of economic viability by county. It examines sales, product acquisition costs, labor, federal taxes, additional costs (Rent, Debt Service, Insurance, Compliance, etc). The model also incorporates roughly $100,000 of additional expenses that are required throughout the year.

The key here is that it takes a minimum amount of revenue for a retailer to be viable and sustain its operations. If a retailer dips below this threshold, it can still operate, but not in the long run. The operator may have to cut expenses, or make a decision to operate in both the illicit and legal markets in order to avoid business failure. The TEV is an indicator of how close is the operators to economic distress.

Washington	Sales per Month	TEV Sales	Product acquisition costs	Labor units	Per capita Income by county	Labor Cost	280E Taxes	Remainder	Additional Expenses	Remainder - addtl
Adams	$190,000	$2,280,000	$1,140,000	10	$47,933	$479,330	$239,400	$421,270	$302,917	*$118,353*
Asotin	$205,000	$2,460,000	$1,230,000	10	$54,340	$543,400	$258,300	$428,300	$313,631	*$114,669*
Benton	$205,000	$2,460,000	$1,230,000	10	$54,454	$544,540	$258,300	$427,160	$313,807	*$113,353*
Chelan	$225,000	$2,700,000	$1,350,000	10	$62,685	$626,850	$283,500	$439,650	$327,613	*$112,037*
Clallam	$205,000	$2,460,000	$1,230,000	10	$55,566	$555,660	$258,300	$416,040	$315,519	*$100,521*
Clark	$230,000	$2,760,000	$1,380,000	10	$65,522	$655,220	$289,800	$434,980	$332,264	*$102,716*
Columbia	$225,000	$2,700,000	$1,350,000	10	$62,566	$625,660	$283,500	$440,840	$327,430	*$113,410*
Cowlitz	$205,000	$2,460,000	$1,230,000	10	$54,630	$546,300	$258,300	$425,400	$314,078	*$111,322*
Douglas	$190,000	$2,280,000	$1,140,000	10	$49,114	$491,140	$239,400	$409,460	$304,735	*$104,725*
Ferry	$180,000	$2,160,000	$1,080,000	10	$44,144	$441,440	$226,800	$411,760	$296,516	*$115,244*
Franklin	$185,000	$2,220,000	$1,110,000	10	$46,072	$460,720	$233,100	$416,180	$299,768	*$116,412*
Garfield	$215,000	$2,580,000	$1,290,000	10	$58,112	$581,120	$270,900	$437,980	$320,005	*$117,975*
Grant	$190,000	$2,280,000	$1,140,000	10	$48,963	$489,630	$239,400	$410,970	$304,503	*$106,467*
Grays Harbor	$185,000	$2,220,000	$1,110,000	10	$46,878	$468,780	$233,100	$408,120	$301,009	*$106, 46*
Island	$230,000	$2,760,000	$1,380,000	10	$65,564	$655,640	$289,800	$434,560	$332,329	*$102,231*
Jefferson	$225,000	$2,700,000	$1,350,000	10	$62,898	$628,980	$283,500	$437,520	$327,941	*$109,579*
King	$350,000	$4,200,000	$2,100,000	10	$113,819	$1,138,190	$441,000	$520,810	$413,424	*$107,386*
Kitsap	$240,000	$2,880,000	$1,440,000	10	$68,198	$681,980	$302,400	$455,620	$336,951	*$118,669*
Kittitas	$205,000	$2,460,000	$1,230,000	10	$55,076	$550,760	$258,300	$420,940	$314,765	*$106,175*
Klickitat	$200,000	$2,400,000	$1,200,000	10	$53,305	$533,050	$252,000	$414,950	$311,755	*$103,195*
Lewis	$200,000	$2,400,000	$1,200,000	10	$52,769	$527,690	$252,000	$420,310	$310,929	*$109,381*
Lincoln	$200,000	$2,400,000	$1,200,000	10	$51,953	$519,530	$252,000	$428,470	$309,673	*$118,797*
Mason	$195,000	$2,340,000	$1,170,000	10	$51,375	$513,750	$245,700	$410,550	$308,500	*$102,050*
Okanogan	$195,000	$2,340,000	$1,170,000	10	$49,552	$495,520	$245,700	$428,780	$305,692	*$123,088*
Pacific	$185,000	$2,220,000	$1,110,000	10	$46,498	$464,980	$233,100	$411,920	$300,424	*$111,496*
Pend Oreille	$190,000	$2,280,000	$1,140,000	10	$48,892	$488,920	$239,400	$411,680	$304,393	*$107,287*
Pierce	$220,000	$2,640,000	$1,320,000	10	$59,986	$599,860	$277,200	$442,940	$323,174	*$119,766*
San Juan	$290,000	$3,480,000	$1,740,000	10	$89,744	$897,440	$365,400	$477,160	$372,958	*$104,202*
Skagit	$225,000	$2,700,000	$1,350,000	10	$62,915	$629,150	$283,500	$437,350	$327,967	*$109,383*
Skamania	$225,000	$2,700,000	$1,350,000	10	$62,472	$624,720	$283,500	$441,780	$327,285	*$114,495*
Snohomish	$240,000	$2,880,000	$1,440,000	10	$69,010	$690,100	$302,400	$447,500	$338,201	*$109,299*
Spokane	$205,000	$2,460,000	$1,230,000	10	$54,223	$542,230	$258,300	$429,470	$313,451	*$116,019*
Stevens	$185,000	$2,220,000	$1,110,000	10	$46,750	$467,500	$233,100	$409,400	$300,812	*$108,588*
Thurston	$215,000	$2,580,000	$1,290,000	10	$59,697	$596,970	$270,900	$422,130	$322,446	*$99,684*
Wahkiakum	$195,000	$2,340,000	$1,170,000	10	$50,372	$503,720	$245,700	$420,580	$306,955	*$113,625*
Walla Walla	$205,000	$2,460,000	$1,230,000	10	$55,436	$554,360	$258,300	$417,340	$315,319	*$102,021*
Whatcom	$215,000	$2,580,000	$1,290,000	10	$58,993	$589,930	$270,900	$429,170	$321,362	*$107,808*
Whitman	$185,000	$2,220,000	$1,110,000	10	$46,672	$466,720	$233,100	$410,180	$300,692	*$109,488*
Yakima	$190,000	$2,280,000	$1,140,000	10	$49,266	$492,660	$239,400	$407,940	$304,969	*$102,971*

Source: Whitney Economics

The Key to Retail Success is Competitive Pricing and Incentivizing Consumers to Participate Legally

Demand that changes significantly due to changes in price is defined in economics as elastic. Demand that does not change very much when prices change is defined as inelastic. Cannabis consumers are very price sensitive. Therefore, the demand is considered elastic. Given how sensitive consumers are to pricing changes, price and pricing strategy, including taxation, can play a key role in incentivizing consumers to participate legally.

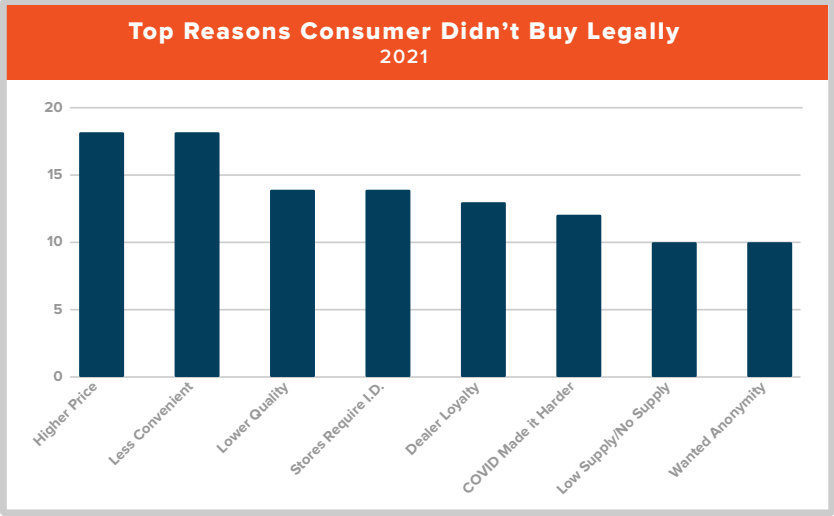
Digging into Demand Elasticity

Previous economic and academic models on pricing sensitivity assumed a high level of addiction and limited product substitutes, leading to the conclusion that cannabis consumers would pay nearly any price to acquire cannabis products[31] and is therefore inelastic.

While the potential addictive nature of cannabis is outside the scope of this report and requires further research, data on consumer participation gathered by Whitney Economics and other researchers indicate that consumers are very price sensitive and that substitute products could be found via the illicit market. Therefore, demand have been proven to be quite elastic. The demand elasticity has been affirmed by studies from NIH.[32] Once these two assumptions were addressed, it was concluded that demand is highly elastic, meaning the higher the price, the lower the demand. Whitney Economics has set the industry standard for cannabis demand elasticity at between -2.1 to -2.4, where any number greater than -1.0 is considered elastic. As a result, the key to consumer participation is keeping prices low (relative to the illicit channel) and providing consumers with access.

Chart: Top reasons consumers did not buy legally

Description: This chart is a summary of the University of Waterloo report to the LCB on why consumers do not purchase cannabis in the legally regulated retail stores in Washington.



Higher prices and less convenience led the list of reasons buyers said they chose to buy cannabis illegally last year, with 18% of respondents citing each of those categories.

(Source: Retail — and illicit — cannabis markets endure; medical in 'dire straits' - Salish Current (salish-current.org) also data from University of Waterloo – Washington 2022 Cannabis Report (May 2023) University of Waterloo – Washington 2022 Cannabis Report (May 2023) - HAMMOND D, CORSETTI D, FATAAR F, IRANIPARAST M, DANH HONG D, BURKHALTER R. INTERNATIONAL CANNABIS POLICY STUDY - WASHINGTON 2022 SUMMARY. MAY 2023.) The chart was used as it summarized the data better visually.

Current Status of Retail Licenses in Washington

At the time of this report, there were 473 active retail licenses issued by LCB. Not all of these were operational, as some are in jurisdictions that have some form of restriction on cannabis businesses. The retail license grouping generated over $1.22 billion in cannabis sales in the state.[33] There was between 53% and 55% legal participation by consumers in 2023. (Please see appendix 3 - Methodology) In addition, there were also sales on tribal lands, which are not included in this analysis. Washington ranks 23rd Nationally in Average Revenue per Retailer.[34]

Chart: Total Current Retail Licenses

Description: This chart lists the number of licenses issued for retail in Washington as of 04/03/2024. While there are additional licenses allocated and some that are banned in counties, this chart is intended to show how many licenses that are currently active by the LCB at the county level.

Washington	473	Retail Licenses			
Adams	2	Grays Harbor	10	Pierce	32
Asotin	3	Island	7	San Juan	3
Benton	4	Jefferson	6	Skagit	18
Chelan	8	King	104	Skamania	2
Clallam	10	Kitsap	20	Snohomish	50
Clark	17	Kittitas	6	Spokane	33
Columbia	1	Klickitat	2	Stevens	7
Cowlitz	13	Lewis	4	Thurston	21
Douglas	3	Lincoln	3	Wahkiakum	2
Ferry	1	Mason	9	Walla Walla	3
Franklin	3	Okanogan	9	Whatcom	25
Garfield	0	Pacific	3	Whitman	7
Grant	10	Pend Oreille	1	Yakima	11

Source: Whitney Economics

Maximum Potential Retail Licenses in Washington

The maximum potential for licenses in Washington, and by county, assumes that there is 100% consumer participation and that there are no illicit sales. This is the upper bound for licenses. Most states peak at roughly 80% - 85% legal consumer participation.[35] Other states may appear to have greater than this amount, and the percentage is influenced upward by canna tourism.

License Issuance Should Consider Licensee Health in Addition to Legal Participation

The number of potential retailers is determined by balancing the total number of consumers in a market and how much they spend, against the number of retailers needed to support them. Retailers require a minimum threshold of revenue in order to cover the cost of their operations, as well as federal taxation. **Licensee health is equally as important at incentivizing consumer legal participation.** If there are too few retailers, prices will remain high, consumers will not have adequate access and legal consumer participation will slow. If there are too many retailers, they will not have enough revenue to be sustainable in the long run. Knowing the upper bound is critical in determining where the balance lies.

From a theoretical perspective, 793 is the maximum number of retail licenses that the state of Washington could support assuming all sales were made from the legal market. Given most states achieve between 80%-85% legal participation, retail licenses issued would be less than this amount and would cap out at roughly 630 - 650 retail licenses.

From a county-to-county perspective, there are opportunities to add licenses. A chart on the number per county is listed in the below. The chart below examines the total number of additional licenses a county could ***potentially issue***, assuming that there are no illicit sales. **This is the *upper bound for cannabis retail licensure***.

Chart: Maximum Number of Retail Licenses for Washington

Description: This chart lists the total maximum number of retail licenses by county assuming all cannabis demand is satisfied via legal channels. Any additional license issuance would be greater than the demand in the market.

Washington	793	Max Potential			
Adams	2	Grays Harbor	10	Pierce	103
Asotin	3	Island	10	San Juan	2
Benton	24	Jefferson	4	Skagit	14
Chelan	9	King	168	Skamania	1
Clallam	10	Kitsap	29	Snohomish	86
Clark	55	Kittitas	6	Spokane	65
Columbia	0	Klickitat	3	Stevens	6
Cowlitz	13	Lewis	10	Thurston	35
Douglas	5	Lincoln	1	Wahkiakum	1
Ferry	1	Mason	9	Walla Walla	7
Franklin	12	Okanogan	5	Whatcom	27
Garfield	0	Pacific	3	Whitman	6
Grant	12	Pend Oreille	2	Yakima	31

Source: Whitney Economics

Given that there is a delta between the number of licenses issued (473) and the total number of license potential (793), there is an opportunity to add more licensees at the retail level. ***The number of new licenses though will be dependent upon how quickly the legal consumer participation grows. It will also depend upon whether or not the city or county will allow a cannabis business to operate.***

Washington's Retail Licensing Model

Most state markets tend to deploy licenses based on certain metrics, such as population. Others choose to issue unlimited licenses. Both licensure models can create distortions in the marketplace. For example, too many licenses can impact the health of the business and profitability, and too few can result in slower conversions due to lack of access. Deploying licenses that are in line with the demand allows for a predictable process, is transparent and will enable a healthy business operator.

Based on a survey deployed in 2022, a majority (49.1%) of the general public in Washington felt that the number of cannabis retail outlets was "about right", while 25.0% of survey respondents thought there were already too many. The issuance of new retail licenses in a controlled manner can help maintain the current sentiment, and help educate others that the market may in fact be underserved.[36]

Chart: Summary of University Report for LCB on Perception of Retail Saturation

Description: This chart, taken directly from the University of Waterloo LCB report on cannabis examines consumer perception on if there are enough stores in their community.

Policy_Store: Do you feel the number of marijauna stores in your community is...

Policy Store	Frequency	%	95% CI	
Too low	248	7.9	6.8	9.0
About right	1536	49.1	47.1	51.1
Too high	783	25.0	23	26.7
Don't know	520	16.6	15.1	18.1
Refuse to answer	45	1.4	0.9	2.0
Total	**3131**	**100.0**		

Citation: University of Waterloo – Washington 2022 Cannabis Report (May 2023) HAMMOND D, CORSETTI D, FATAAR F, IRANIPARAST M, DANH HONG D, BURKHALTER R. INTERNATIONAL CANNABIS POLICY STUDY - WASHINGTON 2022 SUMMARY. MAY 2023.

In 2023, the number of licenses issued at the retail level was mostly in line with demand coming from legal participation. **However, by 2025 and 2026, there will be too few licenses.** This delta is forecasted to grow throughout the decade. By identifying this demand for new licenses now, it will give the legislature time to also develop policy to help new and existing licensees to be successful.

At a high level, Washington should support more retail licenses beginning in 2026. It is important to recruit new applicants now as it will take time to identify a business location, secure enough funding and obtain the appropriate permits. This process is quite lengthy and can take between 1 – 2 years to complete.

Chart: Current active licenses versus future demand

Description: This chart examines the current total number of licenses issued in Washington and then compares that to the total number that are forecasted in the future. The forecast is based on the level of legal participation that is anticipated for each year through 2035. Any negative number (in red parenthesis) is considered an opportunity to issue more licenses. *(A definition of legal participation is listed in the glossary).*

Washington	Current Licensed Retailers	Difference: Current Licenses vs. Forecast
	473	*Negative means more viable licenses needed*
2024 Retail Forecasted Licenses	436	37
2025 Retail Forecasted Licenses	476	(3)
2026 Retail Forecasted Licenses	515	(42)
2027 Retail Forecasted Licenses	555	(82)
2028 Retail Forecasted Licenses	595	(122)
2029 Retail Forecasted Licenses	595	(122)
2030 Retail Forecasted Licenses	634	(161)
2031 Retail Forecasted Licenses	634	(161)
2032 Retail Forecasted Licenses	634	(161)
2033 Retail Forecasted Licenses	634	(161)
2034 Retail Forecasted Licenses	634	(161)
2035 Retail Forecasted Licenses	634	(161)
Potential - Upper Bound (MAX)	793	(320)

Source: Whitney Economics

Chart: Forecasted Retail License Amounts by County (2024 – 2035)

Description: This chart forecasts the number of licenses for each county in a given year. The forecast considers the amount of legal participation, total revenue and then estimates the number of viable retail licenses that would support the demand. The issuance of licenses greater than forecast may impact the viability of the other licensees. (For more information on how to calculate license amounts, please see appendix) This retail license projection is based on the Threshold of Economic Viability assuming 10 employees.

Jurisdiction	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	473	436	476	515	555	595	595	634	634	634	634	634	634
Adams	2	1	1	1	2	2	2	2	2	2	2	2	2
Asotin	3	2	2	2	2	2	2	2	2	2	2	2	2
Benton	4	13	14	16	17	18	18	19	19	19	19	19	19
Chelan	8	5	5	6	6	7	7	7	7	7	7	7	7
Clallam	10	6	6	7	7	8	8	8	8	8	8	8	8
Clark	17	30	33	36	39	41	41	44	44	44	44	44	44
Columbia	1	0	0	0	0	0	0	0	0	0	0	0	0
Cowlitz	13	7	8	9	9	10	10	11	11	11	11	11	11
Douglas	3	3	3	4	4	4	4	4	4	4	4	4	4
Ferry	1	1	1	1	1	1	1	1	1	1	1	1	1
Franklin	3	6	7	8	8	9	9	9	9	9	9	9	9
Garfield		0	0	0	0	0	0	0	0	0	0	0	0
Grant	10	7	7	8	8	9	9	10	10	10	10	10	10
Grays Harbor	10	6	6	7	7	8	8	8	8	8	8	8	8
Island	7	5	6	6	7	7	7	8	8	8	8	8	8
Jefferson	6	2	2	3	3	3	3	3	3	3	3	3	3
King	104	92	101	109	117	126	126	134	134	134	134	134	134
Kitsap	20	16	18	19	21	22	22	24	24	24	24	24	24
Kittitas	6	3	3	4	4	4	4	5	5	5	5	5	5
Klickitat	2	2	2	2	2	2	2	2	2	2	2	2	2
Lewis	4	6	6	7	7	8	8	8	8	8	8	8	8
Lincoln	3	1	1	1	1	1	1	1	1	1	1	1	1
Mason	9	5	5	6	6	7	7	7	7	7	7	7	7
Okanogan	9	3	3	4	4	4	4	4	4	4	4	4	4
Pacific	3	2	2	2	2	3	3	3	3	3	3	3	3
Pend Oreille	1	1	1	1	1	1	1	1	1	1	1	1	1
Pierce	32	57	62	67	72	77	77	82	82	82	82	82	82
San Juan	3	1	1	1	1	1	1	1	1	1	1	1	1
Skagit	18	8	9	9	10	11	11	11	11	11	11	11	11
Skamania	2	1	1	1	1	1	1	1	1	1	1	1	1
Snohomish	50	47	52	56	60	65	65	69	69	69	69	69	69
Spokane	33	36	39	43	46	49	49	52	52	52	52	52	52
Stevens	7	3	4	4	4	5	5	5	5	5	5	5	5
Thurston	21	19	21	22	24	26	26	28	28	28	28	28	28
Wahkiakum	2	0	0	0	0	0	0	0	0	0	0	0	0
Walla Walla	3	4	4	5	5	6	6	6	6	6	6	6	6
Whatcom	25	15	16	18	19	20	20	22	22	22	22	22	22
Whitman	7	3	4	4	4	5	5	5	5	5	5	5	5
Yakima	11	17	18	20	21	23	23	24	24	24	24	24	24
		436	**476**	**515**	**555**	**595**	**595**	**634**	**634**	**634**	**634**	**634**	**634**

Rural Counties May be Able to Add More Licenses Sooner Due to Lower Labor Requirements

When assessing the number of viable licenses to support demand in Washington, a threshold of economic viability (TEV) used assumed 10 full time employees (FTE) per retailer. This is based on surveys of cannabis retailers across the U.S. Whitney Economics uses this Threshold of Economic Viability (TEV) as its guiding principle in determining the number of licenses in a given market. A more aggressive analysis is also included in the appendix of this report that uses 5 FTE. By employing a fewer number of workers and having less labor costs, the TEV is also lowered, which increases the number of potentially viable licenses. However, these more aggressive models are more applicable in rural areas than in the more densely populated counties.

Retail Licenses in Washington - Summary

The cities, counties and state can work together, balancing the demand for cannabis with an appropriate level of access. Then, they can expand that access as more consumers participate through legal cannabis channels. This will enable the state to maintain public policy objectives, provide a healthier environment for operators, reduce illicit diversions, and take advantage of the economic opportunities that cannabis offers in counties throughout the state. **The key is not to grow too fast, nor so slow that consumers choose illicit participation over legal.**

PRODUCER LICENSING ANALYSIS (CULTIVATION)

Cultivators Sell into Two Main Channels

In the case of cannabis economics, it all starts with the plant. Cultivation is the key to understanding the entire industry. There are two paths that cultivated output can take. It can go directly to retailers in the form of flower and pre-rolled cannabis joints, or it can go to processors who then extract the essential oils out of the plant's biomass. Once the oil has been separated from the plant matter, it can then be productized into a variety of products that have different delivery mechanisms. These are called derivative products. Cannabis flower and pre-rolled 'joint' demand make up between 45% - 50% of the total retail sales revenue, while derivative products such as vaporizers, edibles and tinctures make up the rest.[37]

It is a Tough Market for Cultivators

While they are important to the industry, cultivators tend to be at the whim of both nature and the consumer. Cultivators have the least power in the supply chain, particularly when there is excess cultivation capacity. A state's regulatory structure can also determine the fate of cannabis cultivators' profitability. The producer sector is the one sector often overlooked by regulators when it comes to limiting licenses. This leads to oversupply issues. Due to federal illegality of cannabis, if a company fails in this space, there is no safety net. A failed business results in personal wealth destruction. If there is too much capacity or too much output, the market can easily be oversupplied. This hurts cultivators.

Many Factors Influence Business Success and Failure

If supply is greater than demand, prices will fall. If prices fall too much, cultivators will not be profitable and may make poor choices when faced with survival decisions. Typically, in markets that have excess supply, prices will fall until they reach a point where producers can no longer decrease prices further due to costs. There are instances where panicked producers sell into the illicit market in order to backfill their revenue and remain in business. In a period of falling prices, consumer participation in the legal market accelerates. The cannabis cultivation sector should be measured by the amount of capacity and capacity utilized, rather than the number of licenses. In the cultivation sector, it is necessary to monitor different indicators, like price per pound and total capacity per capita.

Determining the Level of Cultivated Output to Support the Demand

Before delving into the amount of capacity that has been licensed and assessing the opportunities for licensure, it is important to understand the level of demand for the cultivated output. The level of demand is based on the total number of consumers in the state or county. It also considers per capital consumption. An analysis published in 2022 on the total supply of cannabis in the U.S.[38] showed that the amount of per capita supply that will satisfy consumer demand is remarkably similar regardless of which state the consumer is in. The amount of per capita supply needed to satisfy demand in a given market is measured by examining how much was produced (Cultivated) and sold through directly to consumers or to processors and how many consumers purchased that output, regardless of product type. In the case of Washington, the per capita supply was multiplied by the total number of consumers in order to get the total potential supply (**1.11 million pounds**) and the total potential supply was multiplied by the level of legal participation forecasted each year to provide yearly cultivated output demand projections from 2024 – 2035.

Current Status of Cannabis Cultivation Licensing in Washington

There are currently 986 active producer and producer processor licenses in Washington. The total capacity associated with this level of licensure is 2.61 million pounds of cultivated output (See calculations in the appendix). We are examining this from a supply capacity perspective, instead of from the number of licenses issued, due to the fact the size of a producer operation can vary based upon its tier. The

total demand, assuming that all 100% of the market is satisfied via legal channels, is 1.11 million pounds. Therefore, there is 1.50 million pounds of excess capacity assuming full capacity utilization. The entire market (illicit and legal) can be supported with less than 45% of current capacity utilization.

Chart: Output per square foot by grow type

Description: Each grow type (Indoor, Outdoor or Greenhouse (Both)) has different output for each square foot of canopy. The estimates in this chart are provided by Resource Innovation Institute (RII).[39] RII tracks output per square foot for producers across the country in their "Power Score" tool. **Given that this is national data, RII estimates per square foot can be used for estimates regardless of region or state**. Some state regulators mandate that each producer log in their output data into the RII tool. They also track electricity and water consumption in the tool.

For simplicity's sake and conservatism, Whitney Economics used the outdoor output of 0.101 pounds per square foot for Washington licensees that were designated as "Both" rather than assume the designation of both implied it was a greenhouse.

Grow Type	Output /sq ft
Indoor	0.432
GH	0.217
Outdoor	0.101

Source: Resource Innovation institute

Normal Capacity Utilization

Cultivators are savvy enough to modulate their supply to market conditions. If prices are too low, they will only plant what they need to cover expenses for the year. These are not uncommon ratios across the United States when it comes to balancing cannabis supply relative to legal demand. This actually shows the extent of the potential overage. Given the fact that not all of the demand is supplied via legal channels, the current annual legal demand could be supported through 2035 with a capacity utilization of 30% - 35%. The lower the capacity, the greater risk there is to producer profitability. Based on previous LCB statements in 2022[40], cultivators ran on the average at 50% capacity utilization.

Despite Nimble Farmers' Best Efforts, Overages Still Happen

When overages occur, it means that there is greater supply than demand. This leads to falling prices and economic distress for the farmers. When cycles of excess supply occur, producers are nimble enough to adjust their planting schedules in response. That is supported by the recent LCB comments (2022) that producers were only utilizing roughly 50% of their capacity. However, given the level of the overage, prices are predicted to continue to fall. In a period of rising input costs (Labor, electricity, interest rates, etc.), producers may struggle with profitability. This is one reason why a majority of the producers (84.2%) are also cannabis processors.[41]

Maximum Potential for Supply

The maximum potential for supply in Washington, and by county, assumes that there is 100% consumer participation and that there are no illicit sales. Maximum potential for supply is the upper bound for licensed capacity. Currently, if fully utilized, Washington has 2.6 million pounds of licensed capacity and 1.1 million pounds of demand. Therefore, the state currently has too much supply.

Jurisdiction	Current Licensed Capacity	Potential - Upper Bound (MAX)	Current vs Potential
Washington	2,610,639	1,113,484	1,497,155 (Excess)

In some states, like Colorado, if capacity is not fully utilized and that the producer cannot prove that they have demand for 75% - 85% of their output, then regulators are empowered to reduce the amount of licensed canopy of that operator. **In the case of Washington, they have already exceeded the upper bound. This means that there are no economically viable opportunities for the issuance of additional cultivation licenses**

Washington's Cultivation Licensing Model

The current supply capacity in Washington can meet the legal demand for cannabis through 2035. The chart below examines the amount of supply forecasted to meet legal demand for all cannabis products (Flower, trim, derivative products, etc) and lists the total supply that could be produced at various levels of capacity utilization.

Chart: Supply Output Scenarios (based on utilization rates) vs. Forecasted Demand in 2024

Description: This chart examines the amount of supply in pounds that is forecasted to meet the 2024 legal demand in the state. It then examines how much capacity needs to be utilized in order to meet that demand.

	Current Supply Capacity Licensed	20% Utilization	30% Utilization	40% Utilization	50% Utilization	60% Utilization	70% Utilization	80% Utilization	90% Utilization
Supply Based on Utilization --->	2,610,639	522,128	783,192	1,044,256	1,305,319	1,566,383	1,827,447	2,088,511	2,349,575
2024 Supply Forecast based on Demand	612,416		2024 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2025 Supply Forecast based on Demand	668,090		2025 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2026 Supply Forecast based on Demand	723,765		2026 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2027 Supply Forecast based on Demand	779,439		2027 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2028 Supply Forecast based on Demand	835,113			2028 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2029 Supply Forecast based on Demand	835,113			2029 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2030 Supply Forecast based on Demand	890,787			2030 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2031 Supply Forecast based on Demand	890,787			2031 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2032 Supply Forecast based on Demand	890,787			2032 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2033 Supply Forecast based on Demand	890,787			2033 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2034 Supply Forecast based on Demand	890,787			2034 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2035 Supply Forecast based on Demand	890,787			2035 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized

Source: Whitney Economics

Although excess supply can present economic challenges for producers, many remain in the market with the hope of full federal legalization or hoping that federal reform will open up the national market.

Chart: Supply vs. Demand

Description: This chart examines the total capacity by county and then lists the total amount of supply forecasted each year that will meet the demand for all products. Supply is defined as cultivated output, since the output can be used in multiple products, besides flower and pre-rolls.

Washington county	Active Producer Licenses in 2024	Total Supply Capacity 2024	Demand 2024	Estimated Demand 2025	Estimated Demand 2026	Estimated Demand 2027	Estimated Demand 2028	Estimated Demand 2029	Estimated Demand 2030	Estimated Demand 2031	Estimated Demand 2032	Estimated Demand 2033	Estimated Demand 2034	Estimated Demand 2035
Washington State	986	2,610,639	612,416	668,090	723,765	779,439	835,113	835,113	890,787	890,787	890,787	890,787	890,787	890,787
Adams	36	82,268	1,362	1,486	1,610	1,734	1,858	1,858	1,981	1,981	1,981	1,981	1,981	1,981
Asotin	1	864	1,786	1,948	2,110	2,273	2,435	2,435	2,597	2,597	2,597	2,597	2,597	2,597
Benton	41	123,212	15,606	17,025	18,444	19,863	21,281	21,281	22,700	22,700	22,700	22,700	22,700	22,700
Chelan	3	4,947	6,249	6,817	7,386	7,954	8,522	8,522	9,090	9,090	9,090	9,090	9,090	9,090
Clallam	14	36,936	6,493	7,083	7,673	8,263	8,854	8,854	9,444	9,444	9,444	9,444	9,444	9,444
Clark	14	74,466	40,021	43,659	47,298	50,936	54,574	54,574	58,213	58,213	58,213	58,213	58,213	58,213
Columbia	1	518	325	355	384	414	443	443	473	473	473	473	473	473
Cowlitz	20	52,392	8,600	9,382	10,164	10,946	11,727	11,727	12,509	12,509	12,509	12,509	12,509	12,509
Douglas	21	59,237	3,273	3,571	3,868	4,166	4,463	4,463	4,761	4,761	4,761	4,761	4,761	4,761
Ferry	2	3,504	599	653	708	762	816	816	871	871	871	871	871	871
Franklin	0	0	6,806	7,425	8,044	8,662	9,281	9,281	9,900	9,900	9,900	9,900	9,900	9,900
Garfield	0	0	179	195	212	228	244	244	260	260	260	260	260	260
Grant	88	218,645	7,237	7,895	8,553	9,211	9,869	9,869	10,527	10,527	10,527	10,527	10,527	10,527
Grays Harbor	30	117,949	6,106	6,662	7,217	7,772	8,327	8,327	8,882	8,882	8,882	8,882	8,882	8,882
Island	10	19,824	7,191	7,845	8,499	9,152	9,806	9,806	10,460	10,460	10,460	10,460	10,460	10,460
Jefferson	8	11,850	2,951	3,219	3,487	3,755	4,023	4,023	4,292	4,292	4,292	4,292	4,292	4,292
King	44	104,242	185,507	202,371	219,235	236,099	252,964	252,964	269,828	269,828	269,828	269,828	269,828	269,828
Kitsap	13	33,722	22,311	24,339	26,368	28,396	30,424	30,424	32,453	32,453	32,453	32,453	32,453	32,453
Kittitas	7	20,336	3,656	3,988	4,321	4,653	4,985	4,985	5,318	5,318	5,318	5,318	5,318	5,318
Klickitat	11	22,952	1,857	2,026	2,195	2,364	2,533	2,533	2,701	2,701	2,701	2,701	2,701	2,701
Lewis	4	15,552	6,439	7,024	7,609	8,195	8,780	8,780	9,365	9,365	9,365	9,365	9,365	9,365
Lincoln	16	49,823	865	943	1,022	1,101	1,179	1,179	1,258	1,258	1,258	1,258	1,258	1,258
Mason	32	92,163	5,359	5,847	6,334	6,821	7,308	7,308	7,795	7,795	7,795	7,795	7,795	7,795
Okanogan	112	259,513	3,332	3,635	3,937	4,240	4,543	4,543	4,846	4,846	4,846	4,846	4,846	4,846
Pacific	12	41,477	1,974	2,153	2,333	2,512	2,692	2,692	2,871	2,871	2,871	2,871	2,871	2,871
Pend Oreille	4	6,388	1,115	1,217	1,318	1,420	1,521	1,521	1,622	1,622	1,622	1,622	1,622	1,622
Pierce	61	192,449	71,598	78,107	84,616	91,125	97,634	97,634	104,143	104,143	104,143	104,143	104,143	104,143
San Juan	3	3,877	1,576	1,720	1,863	2,006	2,149	2,149	2,293	2,293	2,293	2,293	2,293	2,293
Skagit	24	62,203	10,210	11,138	12,066	12,994	13,923	13,923	14,851	14,851	14,851	14,851	14,851	14,851
Skamania	3	6,367	978	1,066	1,155	1,244	1,333	1,333	1,422	1,422	1,422	1,422	1,422	1,422
Snohomish	82	220,527	65,548	71,506	77,465	83,424	89,383	89,383	95,342	95,342	95,342	95,342	95,342	95,342
Spokane	100	260,796	42,472	46,333	50,194	54,055	57,916	57,916	61,777	61,777	61,777	61,777	61,777	61,777
Stevens	30	64,774	3,683	4,018	4,353	4,688	5,023	5,023	5,357	5,357	5,357	5,357	5,357	5,357
Thurston	57	159,144	23,509	25,646	27,784	29,921	32,058	32,058	34,195	34,195	34,195	34,195	34,195	34,195
Wahkiakum	1	2,121	378	412	447	481	515	515	550	550	550	550	550	550
Walla Walla	4	8,080	4,829	5,268	5,707	6,146	6,586	6,586	7,025	7,025	7,025	7,025	7,025	7,025
Whatcom	51	105,528	18,472	20,151	21,830	23,509	25,189	25,189	26,868	26,868	26,868	26,868	26,868	26,868
Whitman	9	16,271	3,572	3,896	4,221	4,546	4,871	4,871	5,195	5,195	5,195	5,195	5,195	5,195
Yakima	17	55,723	18,392	20,064	21,736	23,408	25,080	25,080	26,752	26,752	26,752	26,752	26,752	26,752

Source: Whitney Economics, LCB

Cultivation Licenses in Washington - Summary

Excess supply is a common issue in state cannabis markets throughout the U.S. How cannabis farmers react to the oversupply will be a challenge for regulators. Investment interest in producer licenses becomes a challenge in this environment, as the cost of capital and risks are too much for many producers to bear. The total amount of supply estimated to support the market can be met with less than 40% of the total capacity. **Any further issuance of licenses would only exacerbate the excess and make things harder for cultivators**. The lack of available financing, weighed against the risks, combined with market conditions would lead to business failures.

Output per License Type and Tier

If there is an instance in the future whereby a balance has been achieved the below chart can serve as a guide to determine output expectations by the applicant and how much of the available capacity would be licensed. Each additional cultivation license application must be reviewed on a case-by-case basis to determine if the additional capacity meets or exceeds the forecasted demand.

Lbs/sq ft	Grow Type	Tier 1 Sq ft (Min)	Tier 1 sq ft (Max)	Tier 2 Sq ft (Min)	Tier 2 sq ft (Max)	Tier 3 Sq ft (Min)	Tier 3 sq ft (Max)
In General	**Capacity Per Tier**	**0**	**4,000**	**4,001**	**10,000**	**10,001**	**30,000**
0.432	Indoor Pounds of Capacity	0	1,728	1,728	4,320	4,320	12,960
0.217	Greenhouse Pounds of Capacity	0	868	868	2,170	2,170	6,510
0.101	Outdoor Pounds of Capacity	0	404	404	1,010	1,010	3,030

Lbs/sq ft	Grow Type	Tier 1 Sq ft (Min)	Tier 1 sq ft (Max)	Tier 2 Sq ft (Min)	Tier 2 sq ft (Max)	Tier 3 Sq ft (Min)	Tier 3 sq ft (Max)
For LCB Report	**Capacity Per Tier**	**0**	**4,000**	**4,001**	**10,000**	**10,001**	**30,000**
0.432	Indoor Pounds of Capacity	0	1,728	1,728	4,320	4,320	12,960
0.101	"Both" Pounds of Capacity	0	404	404	1,010	1,010	3,030
0.101	Outdoor Pounds of Capacity	0	404	404	1,010	1,010	3,030

Source: Whitney Economics, LCB

CANNABIS PROCESSING LICENSES IN WASHINGTON

Background

Processing is an important sector in the cannabis industry from an economic perspective, and it is often overlooked. The cannabis processing sector is important because it serves consumer demand that is not flower or pre-roll related. Processors work with the raw material plant matter, remove the cannabinoid oils from the plant matter and then use the oils to produce other products. **Derivative products from processed materials make up roughly half of the entire legal sales revenue in the state of Washington**.[42]

Processors have Stable Prices, More Predictable Revenues and Experience Less Elasticity

While the price of cannabis flower may fluctuate in times of oversupply or undersupply, prices for processed goods are relatively stable. Consumers who are very price sensitive when it comes to cannabis flower (high demand elasticity) are not as sensitive to price when it comes to derivative products. As a result, businesses that are built around processed goods tend to be more stable and predictable.

Processors are Not as Dependent Upon Scale

Another aspect of processed cannabis goods is that product manufacturers in the space are not as dependent upon scale as other sectors. It may be their choice to scale, but profitability can be gleaned in a single batch. As a result, this opens the door for many small businesses in the cannabis industry and this is an area of opportunity for increased licensure. To a certain extent, those who do their consumer research can identify an opportunity and develop a quality product that resonates with consumers. Market analysis, creativity and innovation can allow a new processor to introduce successful products into the marketplace. As such, they can develop a business and be quite successful as a processor.

Processing is a Quality Opportunity for Small Businesses

Processors can develop a niche and be successful. Success stories include small businesses selling a balm for pain, instead of vapes or gummies. For example, if a company produces a balm that may help a certain condition, such as pain or inflation and brings that product to market, they can satisfy the demand without having to invest millions of dollars into a manufacturing company. This is an example of how a small amount of cannabis supply can generate economic opportunities for smaller businesses.

Market Opportunities are Based on Available Supply of Raw Materials and Seasonality

The only real limit to the ability to support consumer demand is the availability of raw plant material, or of extracted oils. Businesses do not need a lot of raw material to make a product. Typically, the raw material has a lower amount of THC and a little oil can go a long way. The availability of raw materials is seasonal. As such prices can fluctuate from a low in the fall (when outdoor harvests occur in high volume) and a high price in the spring and summer (When a majority of excess biomass has already been consumed). Processors must be aware of their cost structure and plan accordingly.

Data Is Key To Making Informed Business And Regulatory Decisions

From a regulatory perspective, states must monitor and report the prices of biomass on a regular basis so that new and existing licensees can have the data they need to make informed decisions. Monitoring prices can also help identify regulatory issues when raw material prices get too high, thereby inviting existing operators to import cheaper raw materials from the illicit market in what is called reverse diversion. Regulators will need to monitor input prices (dashboard) and processor yields to avoid biomass from illegally entering the market.

Processing and product manufacturing is the one area of the market where fewer restrictions on licensure and license numbers is appropriate.

Current Status

The number of licenses currently issued and active is 1,039.[43] Because it takes so little raw material to generate enough oil to make viable, sellable retail products, licenses in this section are based on the total amount of the potential available supply.

The processing sector produces products that make up roughly 50% - 55% of all of the retail sales in the state.[44] There are processors in nearly every county in the state that will allow them and there is ample room to increase the numbers in each county.

Chart: Legal Sales Breakdown: Flower versus Derivatives

Description: This chart examines the percentage of sales in Washington that was flower or biomass versus derivative products (Edibles, concentrates, tinctures, etc) It shows that derivative products make up the majority of the retail sales in Washington.

Retail Sales Breakdown	% of Washington Sales
Flower / Pre-Rolls	**47.49%**
Derivative Products	**52.51%**
Concentrates	*38.63%*
Edibles	*12.54%*
Others	*1.34%*

Source: LCB

Processors are not Dependent upon Proximity to Consumers

Processors are not as dependent on jurisdiction as are retailers. They can get their raw materials from any other county. There is ample supply. Most producers (84.2%) also have a processing license. This is to ensure there is a source of inexpensive raw material supply and that there are multiple revenue streams to protect against fluctuations in producer prices. Processors support a large diverse population of consumers.

Processed goods are also more shelf stable, so once products are produced, they retain their value over a longer period of time than flower.

Maximum Potential for Processor Licenses

This section has two ranges of licenses. The first assumes 250 pounds of potential per license. It assumes that for every pound of flower there is one pound of raw material biomass (Trim) available for processors / product manufacturers. It also assumes a higher yield of 20% usable oil and a higher concentration of THC from the extracted oil. With a greater yield there is more oil to support processing businesses. As such, approximately 4,450 total licenses are potentially available. This is the maximum amount, given that it assumes 100% of the market is supported by legal sale.

Chart: Processing Licenses Issued vs. Max Potential Assuming 250 Pounds of Cultivated Output Per Processor

Description: Depending upon the product, a processor, in this sense, a product manufacturer, can be quite successful even with 250 pounds of biomass that is processed. This chart looks at how many additional licenses could be issued

Jurisdiction	Current Licenses Issued	Potential - Upper Bound (MAX)	Current vs Potential
Washington	1,039	4,454	(3,415)

Source: Whitney Economics

In this second model, there is an assumption of 500 pounds per license. It assumes that for every pound of flower there is one pound of raw material biomass (Trim) available for processors / product manufacturers. It also assumes a lower yield of 10% usable oil and a lower concentration of THC from the extracted oil. Given there is less oil available to support the market, there are fewer opportunities for licenses, but regardless of which model is used, there is a max potential of between 1,188 and 3,415 additional licenses that can be issued.

Chart: Processing Licenses Issued vs. Max Potential Assuming 500 Pounds of Cultivated Output Per Processor

Description: This chart looks at how many additional licenses could be issued if the amount of biomass per processor/product manufacturer is increased to 500 pounds. There is still a lot of upside potential to issue licenses.

Jurisdiction	Current Licenses Issued	Potential - Upper Bound (MAX)	Current vs Potential
Washington	1,039	2,227	(1,188)

Source: Whitney Economics

Cannabis process is the one sector where there is ample room for more businesses to enter the market, and more opportunities for small or minority owned enterprises.

Washington Cannabis Processor Licensing Models

Conservatively (based on 500 lbs of potential supply per license), most counties can add additional licensees.

Chart: Current Number of Processor Licenses vs. Forecasted Demand for Licenses 2024 – 2035

Description: This chart examines the opportunities for additional licenses based on the forecasted demand for licenses from 2024 – 2035. A red number in parenthesis indicated an opportunity to issue more licenses.

Washington	Current Licensed Processors	Gap to Current Licenses
Assumes 500lb/license	**1039**	*Negative means more viable licenses needed*
2024 Processing Forecasted Opportunity	1225	(186)
2025 Processing Forecasted Opportunity	1336	(297)
2026 Processing Forecasted Opportunity	1448	(409)
2027 Processing Forecasted Opportunity	1559	(520)
2028 Processing Forecasted Opportunity	1670	(631)
2029 Processing Forecasted Opportunity	1670	(631)
2030 Processing Forecasted Opportunity	1782	(743)
2031 Processing Forecasted Opportunity	1782	(743)
2032 Processing Forecasted Opportunity	1782	(743)
2033 Processing Forecasted Opportunity	1782	(743)
2034 Processing Forecasted Opportunity	1782	(743)
2035 Processing Forecasted Opportunity	1782	(743)
Potential - Upper Bound (MAX)	2227	(1,188)

Source: Whitney Economics

Assuming a model of 250 pounds of potential supply per licensee, opportunities exist in every county to add more licenses. Once those licenses are up and running, it is the business strategy of the operator and quality of products that will determine the success of the venture.

Chart: Current Number of Processor Licenses vs. Forecasted Demand for Licenses 2024 – 2035

Description: This chart examines the opportunities for additional licenses based on the forecasted demand for licenses from 2024 – 2035. A red number in parenthesis indicated an opportunity to issue more licenses

Washington	Current Licensed Processors	Gap to Current Licenses
Assumes 250lb/license	**1039**	*Negative means more viable licenses needed*
2024 Processing Forecasted Opportunity	2450	(1,411)
2025 Processing Forecasted Opportunity	2672	(1,633)
2026 Processing Forecasted Opportunity	2895	(1,856)
2027 Processing Forecasted Opportunity	3118	(2,079)
2028 Processing Forecasted Opportunity	3340	(2,301)
2029 Processing Forecasted Opportunity	3340	(2,301)
2030 Processing Forecasted Opportunity	3563	(2,524)
2031 Processing Forecasted Opportunity	3563	(2,524)
2032 Processing Forecasted Opportunity	3563	(2,524)
2033 Processing Forecasted Opportunity	3563	(2,524)
2034 Processing Forecasted Opportunity	3563	(2,524)
2035 Processing Forecasted Opportunity	3563	(2,524)
Potential - Upper Bound (MAX)	4454	(3,415)

Source: Whitney Economics

Chart: Number of Processor Licenses by County and by Year Assuming 500 Pounds of Cultivated Supply

Description: This chart looks at how many processor licenses could be supported each year by county. It is important to note that some opportunities for licensure may not be available in counties with moratoriums in place.

Jurisdiction	Current Licenses Issued	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	1,039	1,225	1,336	1,448	1,559	1,670	1,670	1,782	1,782	1,782	1,782	1,782	1,782
Adams	22	3	3	3	3	4	4	4	4	4	4	4	4
Asotin	1	4	4	4	5	5	5	5	5	5	5	5	5
Benton	35	31	34	37	40	43	43	45	45	45	45	45	45
Chelan	6	12	14	15	16	17	17	18	18	18	18	18	18
Clallam	12	13	14	15	17	18	18	19	19	19	19	19	19
Clark	14	80	87	95	102	109	109	116	116	116	116	116	116
Columbia	1	1	1	1	1	1	1	1	1	1	1	1	1
Cowlitz	24	17	19	20	22	23	23	25	25	25	25	25	25
Douglas	23	7	7	8	8	9	9	10	10	10	10	10	10
Ferry	2	1	1	1	2	2	2	2	2	2	2	2	2
Franklin	0	14	15	16	17	19	19	20	20	20	20	20	20
Garfield	0	0	0	0	0	0	0	1	1	1	1	1	1
Grant	75	14	16	17	18	20	20	21	21	21	21	21	21
Grays Harbor	29	12	13	14	16	17	17	18	18	18	18	18	18
Island	12	14	16	17	18	20	20	21	21	21	21	21	21
Jefferson	12	6	6	7	8	8	8	9	9	9	9	9	9
King	82	371	405	438	472	506	506	540	540	540	540	540	540
Kitsap	20	45	49	53	57	61	61	65	65	65	65	65	65
Kittitas	7	7	8	9	9	10	10	11	11	11	11	11	11
Klickitat	9	4	4	4	5	5	5	5	5	5	5	5	5
Lewis	5	13	14	15	16	18	18	19	19	19	19	19	19
Lincoln	16	2	2	2	2	2	2	3	3	3	3	3	3
Mason	35	11	12	13	14	15	15	16	16	16	16	16	16
Okanogan	93	7	7	8	8	9	9	10	10	10	10	10	10
Pacific	17	4	4	5	5	5	5	6	6	6	6	6	6
Pend Oreille	3	2	2	3	3	3	3	3	3	3	3	3	3
Pierce	77	143	156	169	182	195	195	208	208	208	208	208	208
San Juan	3	3	3	4	4	4	4	5	5	5	5	5	5
Skagit	25	20	22	24	26	28	28	30	30	30	30	30	30
Skamania	3	2	2	2	2	3	3	3	3	3	3	3	3
Snohomish	96	131	143	155	167	179	179	191	191	191	191	191	191
Spokane	102	85	93	100	108	116	116	124	124	124	124	124	124
Stevens	27	7	8	9	9	10	10	11	11	11	11	11	11
Thurston	61	47	51	56	60	64	64	68	68	68	68	68	68
Wahkiakum	1	1	1	1	1	1	1	1	1	1	1	1	1
Walla Walla	4	10	11	11	12	13	13	14	14	14	14	14	14
Whatcom	62	37	40	44	47	50	50	54	54	54	54	54	54
Whitman	7	7	8	8	9	10	10	10	10	10	10	10	10
Yakima	16	37	40	43	47	50	50	54	54	54	54	54	54
		1,225	1,336	1,448	1,559	1,670	1,670	1,782	1,782	1,782	1,782	1,782	1,782

Source: Whitney Economics

Chart: Number of Processor Licenses by County and by Year Assuming 250 Pounds of Cultivated Supply

Description: This chart looks at how many processor licenses could be supported each year by county

Jurisdiction	Current Licenses Issued	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	1,039	2,450	2,672	2,895	3,118	3,340	3,340	3,563	3,563	3,563	3,563	3,563	3,563
Adams	22	5	6	6	7	7	7	8	8	8	8	8	8
Asotin	1	7	8	8	9	10	10	10	10	10	10	10	10
Benton	35	62	68	74	79	85	85	91	91	91	91	91	91
Chelan	6	25	27	30	32	34	34	36	36	36	36	36	36
Clallam	12	26	28	31	33	35	35	38	38	38	38	38	38
Clark	14	160	175	189	204	218	218	233	233	233	233	233	233
Columbia	1	1	1	2	2	2	2	2	2	2	2	2	2
Cowlitz	24	34	38	41	44	47	47	50	50	50	50	50	50
Douglas	23	13	14	15	17	18	18	19	19	19	19	19	19
Ferry	2	2	3	3	3	3	3	3	3	3	3	3	3
Franklin	0	27	30	32	35	37	37	40	40	40	40	40	40
Garfield	0	1	1	1	1	1	1	1	1	1	1	1	1
Grant	75	29	32	34	37	39	39	42	42	42	42	42	42
Grays Harbor	29	24	27	29	31	33	33	36	36	36	36	36	36
Island	12	29	31	34	37	39	39	42	42	42	42	42	42
Jefferson	12	12	13	14	15	16	16	17	17	17	17	17	17
King	82	742	809	877	944	1,012	1,012	1,079	1,079	1,079	1,079	1,079	1,079
Kitsap	20	89	97	105	114	122	122	130	130	130	130	130	130
Kittitas	7	15	16	17	19	20	20	21	21	21	21	21	21
Klickitat	9	7	8	9	9	10	10	11	11	11	11	11	11
Lewis	5	26	28	30	33	35	35	37	37	37	37	37	37
Lincoln	16	3	4	4	4	5	5	5	5	5	5	5	5
Mason	35	21	23	25	27	29	29	31	31	31	31	31	31
Okanogan	93	13	15	16	17	18	18	19	19	19	19	19	19
Pacific	17	8	9	9	10	11	11	11	11	11	11	11	11
Pend Oreille	3	4	5	5	6	6	6	6	6	6	6	6	6
Pierce	77	286	312	338	365	391	391	417	417	417	417	417	417
San Juan	3	6	7	7	8	9	9	9	9	9	9	9	9
Skagit	25	41	45	48	52	56	56	59	59	59	59	59	59
Skamania	3	4	4	5	5	5	5	6	6	6	6	6	6
Snohomish	96	262	286	310	334	358	358	381	381	381	381	381	381
Spokane	102	170	185	201	216	232	232	247	247	247	247	247	247
Stevens	27	15	16	17	19	20	20	21	21	21	21	21	21
Thurston	61	94	103	111	120	128	128	137	137	137	137	137	137
Wahkiakum	1	2	2	2	2	2	2	2	2	2	2	2	2
Walla Walla	4	19	21	23	25	26	26	28	28	28	28	28	28
Whatcom	62	74	81	87	94	101	101	107	107	107	107	107	107
Whitman	7	14	16	17	18	19	19	21	21	21	21	21	21
Yakima	16	74	80	87	94	100	100	107	107	107	107	107	107

Source: Whitney Economics

Processing Licenses in Washington - Summary

Processed materials make up almost half of the legal cannabis sales in Washington. Criteria for success in this sector is different than in others. Quality products that fill a niche can be equally as successful as large-scale manufacturers. Barriers to entry do not necessarily require large amounts of capacity or capital investment. Innovation and a reliable source of raw material supply is key to success in a processing business. The health of a processing business is not dependent on scale as much as business acumen and running a disciplined operation. **With a large number of potential licenses that can be offered, the economic opportunities are strong. The economic impact that these businesses can have on a local community justifies more licenses.** Similar to cultivated supply though, a processor / product manufacturer can supply not only the county, but the entire state. With this in mind, the value of the processor license from a county perspective is more in the economic impact than having supply closer to the consumer.

RECOMMENDATIONS

Based on the analysis of the current and future demand and supply in Washington, here is a series of recommendations:

1) Do not issue additional producer licenses until the supply capacity is more in line with the demand that is based on legal consumer participation

2) If producer licenses are forfeited, there may be an opportunity to reallocate the license at a lower tier or smaller canopy

3) Issue retail licenses in underserved counties sooner rather than later assuming there is no moratorium. If there is a moratorium, then prepare for license issuance in case the ban is lifted. Either way, it will take time to identify locations, receive funding and acquire permits. Since this can take years and the number of licenses in demand is increasing, issuing licenses so that they are available when demanded is a disciplined approach

4) If retail licenses are based on the lower bound TEV values, be sure that the lower levels of employment are in line with the county and locations they serve

5) Establish publicly available data on dashboards to assess pricing in the market for raw materials in addition to retail products and monitor the inputs going into processors in addition to the output. This will help both regulators to assess potential diversion and help operators make informed, data-driven decisions.

6) Develop dashboards to provide additional clarity on supply and demand at different levels of licensure.

7) Develop a campaign to educate and articulate the opportunities in the processing and product manufacturing sectors.

8) Product manufacturing is where the greatest economic opportunities are for future applicants.

CONCLUSION

Developing and deploying a regulatory program in a nascent cannabis market is never easy. Washington was a pioneer in this regard. As the industry has evolved over the past 10 years, it is important for the regulatory structure to evolve as well. It is appropriate to have discussions on how many viable licenses are appropriate to be issued by the LCB at this time.

As part of this exercise, issues of oversupply and potential access were identified. Each sector must be examined separately, as there is no one-size-fits-all strategy that fits every sector. Retail licenses should be assessed and adjusted based on economic viability. Producer/cultivation licenses should be assessed on capacity and utilization. Processing licenses can be based on supply and innovation. The sector with the greatest opportunity in Washington is processing, which has the greatest demographic demand, and accounts for a significant percentage of the overall state revenues.

APPENDICES

APPENDIX 1:
FAQ – Frequently Asks Questions

Q: There is a lot of discussion about federal taxation. Would Washington be more concerned about the state tax rather than federal taxation?

A: Both actually. The federal tax impacts the health of the businesses, whereas the state tax impacts the level of legal participation. Consumers are price sensitive, so higher state taxes slow down the level of legal participation.

Q: On page 21, the producer license section discusses oversupply. Why would a market be oversupplied. Is this not a function of how much demand there is from consumers, processors or retailers?

A: Typically, there is usually a balance between supply and demand. If there is too much supply a business may choose to reduce the supply or else find new markets in order to increase demand. However, in the cannabis industry, suppliers have limited opportunities to increase demand. They cannot advertise, nor ship to other states. In addition, cultivators need to produce some amount of cultivation in order to cover costs. In the analysis, it shows that even if every cultivator produced at roughly 30% capacity, the state would still be over supplied.

Q: Why did this analysis include estimates with those that were 18 years and older? I thought it was illegal to consume cannabis if one was younger than 21?

NOTE: Neither the LCB nor Whitney Economics condone the illegal use of cannabis, particularly by individuals under the age of 21.

A: It is true that it is illegal to purchase or consumer cannabis if one is younger than 21 years old. However, the 18 and older demographic is used for a number of reasons.

1) Demographic data is most commonly quoted with age groups of 18 years and older.

2) Data from the SAMHSA, NIH, U.S. Census, Washington State and other public entities use this standardized tracking for this demographic. This is common for both the Bureau of Census, BLS and Office of Economic Analysis in the U.S. as well as by international organization such as the U.N.

3) Most publications on cannabis usage rates are based on surveys that are 18 – 24 months old. An 18 year-old survey taker, for example, is likely to be older than 21 at the time of this analysis. It is also notable, that Washington allows for medical patients below the age of 21 to participate in the legal regulated system.

4) The use of uniformly formatted data, is meant to serve as an apples-to-apples comparison of multiple data sources, rather than trying to reconcile the differences between data sets. It is the most commonly accessible and credible data sets.

5) This is to ensure there is commonality between data sources.

Q: What are the differences between limited and unlimited licenses?

A: There are several significant differences between limited and unlimited licenses

Unlimited licenses:

Unlimited licenses in a cannabis regulatory program offer the benefits of including as many people as possible in the program that qualify. The characteristic of an unlimited licensed state is that there is generally too much supply than the state's cannabis consumers can handle. **The oversupply of cannabis tends to lead to sharply declining prices, lower profits for licensees and economic stress**. With economic stress there may be a tendency towards diversion. It also can lead to an

excess of delinquent payments from vendor to vendor, creating cash flow issues. On the other hand, **the lower prices result in greater legal participation by price sensitive consumers. Legal participation is a key public policy objective**.

Limited licenses:

States that limit the number of licenses have the opposite effect when compared to unlimited license states. The number of licenses issues is capped at certain levels and tends to remained fixed in number. Quite often, the caps are set in an arbitrary manner and without data analysis to support them. There are fewer suppliers than in unlimited states and as a result, there is generally less supply. States that put caps on retail licenses restricts the access of cannabis by consumers. With limited access and limited supply, limited license states tend to have higher prices. While higher prices are beneficial for the licensees, higher prices tend to slow the pace of consumers converting from the illicit market into the legal market. **So, while the health of the operators may be good, in states with license caps, some of the other policy objectives (ex. Legal participation) may not be met to their fullest.**

Q: Which approach is better, limited licenses or unlimited licenses?

A: The key question here is how does a regulatory agency develop a program that ensures licensees have the best opportunity to remain viable. Many regulators and policy makers take an either/or approach to the cannabis license structures. They either deploy a limited license structure or an unlimited one. Most of the time it is out of their hands as structure are often mandated legislatively. In instances where regulators have the flexibility on their license strategy, more and more regulators are beginning to consider a right sizing approach, where the number of licenses issued depends upon the market dynamics. **In this approach, over supply is limited, the health of the licensee is considered and the level of legal participation is maximized to the extent of the taxation level**. Right sizing achieves public policy objectives, because it incentivizes consumer to participate legally and there is less incentive for diversions related to economic distress. Right sizing can be done at the state level, or, in this case at the county level.

Q: Where did you get your data and how do you know it is reliable?

A: Much of the data contained in this report is from publicly available entities, such as the LCB, Washington State Department of Revenue, Cannabis regulators from all 40 states, the National Institute of Health and the American Medical Association. Other data have been produced and published in reports from Whitney Economics. In many ways, given that there are so few economists producing research on cannabis, Whitney Economics has been the first to produce the models and has set the standard for the rest of the industry. The reliability of the data comes from the fact that the forecasts have proven to be highly accurate over time. As an example, the Whitney Economics 2023 forecast to U.S. legal cannabis revenue came in at 98.6% accurate when compare to the actual sales publish by state regulators. In addition, Whitney Economics attempts to triangulate its data with other known sources when available so as to ensure its accuracy.

Q: Are you taking into consideration bans and moratoriums in local jurisdictions?

A: In this analysis, the projections on the number of potentially viable licensees at the county level does not consider moratoriums. Therefore, as future applicants, operators or regulators it is always important to check with local jurisdictions about their cannabis policy

Q: How do you determine changes across time in both legal and illicit market participation?

A: Whitney Economics has analyzed all 40 states for the amount of revenues derived from legal cannabis for each year of the existence of their legal program. Whitney Economics has also calculated the total addressable market (TAM), which is the total amount of demand regardless of illicit or legal. TAM is a function of the total numbers of consumers multiplied by the average amount spent by consumers. By keep the TAM pegged to the population, then the legal participation is simply the legal sales divided by the TAM. Any thing that is not derived from legal sales is illicit.

After analyzing the changes over time of revenue in each state, patterns arise that show what levels of legal participation occurs in year 1, 2, 3 etc. This is

very consistent from state to state. After adjusting for minor differences based on license structure and taxation, it is straightforward to predict how much legal participation should occur in any given year. This is the approach used for Washington.

Q: Why is legal participation so low in this report. It has been reported as much higher elsewhere?

A: In business and economics, it is standard practice to estimate market share by assessing the total available market and subsequently how much of the total market has been captured. As such, this analysis estimated the percent of legal participation by comparing the amount of total legal sales with the total addressable market (TAM). Specifically, Whitney Economics first determined the TAM *(See appendix)* and then divided the total legal sales[44] by the TAM. The Washington TAM is $2.33 billion and the total sales[45] was $1.22 billion. The difference is $1.11 billion, which is the 52.7% of legal participation as determined by Whitney Economics.

Notably, there are other ways to estimate legal participation. For example, the International Policy on Cannabis assessed legal participation using a self-report questionnaire. In that survey, 1,348 out of 3,131 cannabis consumers were asked “Overall, how much of the marijuana that you used in the past 12 months was purchased from a LEGAL/AUTHORIZED source?” and respondents reported they perceived that 91% of their cannabis products was legally purchased.

This explanation is meant to highlight the nuances in different methodology, that is survey data vs. economic estimates. Both approaches are important to better understand the extent to which the illicit market operates in Washington. However, given that the outcome of this analysis is focused on economic viability, Whitney Economics has chosen to use the methodology most frequently used by economists. Moreover, the methodology used in this report has previously been deployed to forecast the total legal sales in the U.S., and in 2023 the forecast accuracy using these methods was 98.6%.

Q: How do you determine the total economic viability (TEV)? What factors go into this?

A: There is a minimum amount of revenue a retailer needs to cover all of its expenses and taxes in a given year. When a retailer generates revenue below this level, it may be able to operate, but cuts may have to be made and this creates economic distress and may lead to poor decision-making illicit activity or business failure. There are several factors that go into the TEV value including average wages in an area, labor costs, product acquisition cost estimates, federal taxation, payroll taxes, health care expenditures, average rental rates, property insurance, debt service amounts, regulatory license fees, and fees to obtain bank accounts. In addition, a small average monthly operating amount for general and administrative expenses.

Q: Why do you think 10 employees is a better estimate than 5 employees?

A: Whitney Economics has deployed a series of surveys to business operators in the cannabis industry. The average number of retail employees across the U.S. is 10 FTE (Full Time Employee Equivalent) . This number has also been used in our jobs report that we produce each year and is triangulated, when possible, with state departments of labor. 5 employees are suboptimal in larger population centers because it limits the number of hours an operation can remain open and generating revenue. Having only 5 employees does not imply that a retailer cannot operate, it simply limits its economic potential. An operation with 5 employees in a more rural area may be more successful than a similar business in an urban area.

Q: What should local jurisdictions take from this report?

A: Local jurisdiction can glean many things from this report. But two key messages stand out.

1) Using this report, local jurisdictions can understand how many more new licenses can be absorbed by the market in a viable manner

2) That there are economic opportunities and tradeoffs that extend beyond the mere existence of a cannabis licensee in the jurisdiction and the impacts that moratoriums and bans are having on the economy.

Q: What are some key vocabulary that is important to know for this report?

A: A glossary of terms is provided in the appendix below this one.

Q: What does legal participation mean?

A: Legal participation is the amount of total sales that are done via legal channels. It attempts to ascertain the extend of consumer involvement in the market. Legal participation is simply the legal sales divided by the TAM. Anything that is not derived from legal sales is considered illicit.

APPENDIX 2:
Glossary of Terms

This section defines some of the terms used in this report.

LCB – This is the state agency in charge of regulating cannabis in Washington

Producer license – A producer license allows an operator to legal grow cannabis in Washington as a licenses

Processing license – A processing licenses allows an operator to legally transform cannabis plant matter into extracted oils or to produce product manufactured goods that can then be sold via licensed retail stores

Retail license – A retail license allows for an operator to legally purchase cannabis products from the legal suppliers and to sell these products to consumers in licensed retail facilities

Canopy – Canopy is the amount of growing capacity used for the cultivation of cannabis plants. This is typical the amount of flowering capacity and is measured in square footage

Legal participation – Legal participation examines the amount of total legal sales and divides it by the total market value of cannabis. The ratio is then described as the percentage of legal sales.

Maximum Potential – The examines the total number of viable licenses necessary in Washington to meet the total demand assuming no illicit sales occur. This is also referred to as the upper bound in licenses.

Threshold of Economic Viability (TEV) – This is the lowest amount of revenue necessary to maintain the long term viability of a licensee. While operators may continue to operate below this threshold, they cannot do so in the long run, without coming under economic duress.

280E – This is a federal IRS tax policy that limits the deductions related to federal taxes. With the limited number of deductions, the effective tax rates, especially for retailers, can be in excess of 70%.

Elasticity – The price elasticity of demand is a measure of the percentage change in demand for a product based on the percentage of change in price. Simply put, it is a measure of how demand responds to a change in price. A value greater than 1.0 or less than -1.0 indicates the demand is sensitive to pricing changes, whereas a value between -1.0 and 1.0 indicates that there less sensitivity to changes in price. Cannabis, based on Whitney Economics analysis has a demand elasticity of -2.1 to -2.4. indicating that demand changes significantly when there is a change in price.

APPENDIX 3:
About the Author / Statement of Conflicts

Beau Whitney, Cannabis Economics, Operations and Supply Chain Expert

Beau Whitney is the founder and Chief Economist at Whitney Economics, a global leader in cannabis and hemp business consulting, data, and economic research. Whitney Economics is based in Portland, Oregon.

Serving an international clientele, Beau is considered one of the leading cannabis economists in the U.S. and globally. His applications of economic principles to create actionable operational and policy recommendations has been recognized by governments, and throughout the economic, investment, and business communities. In 2022, Beau presented data and insights about cannabis and hemp economics at the United Nations.

His white papers analyzing the adult-use, medical and industrial cannabis markets have been referenced in the Wall Street Journal, Washington Post, New York Times, USA Today, the Associated Press, as well as in leading cannabis industry publications.

Beau Whitney is a member of the American Economic Association, the Oregon chapter president of the National Association for Business Economics, is a member of multiple regulatory advisory committees throughout the U.S. and participates on the Oregon Governor's Council of Economic Advisors.

Beau has provided policy recommendations at the state, national and international levels and is considered an authority on cannabis economics and the supply chain. Whitney Economics does not take a position on the issue of cannabis legalization or on pending legislation.

Beau Whitney
WHITNEY ECONOMICS

Statement Of Conflicts

Whitney Economics does not take a position on this issue of cannabis legalization, however there are potential conflicts while presenting economic and market analysis.

- Whitney Economics receives compensation for business and economic analysis of the cannabis industry.
- Mr. Whitney has previously held positions and licenses within the legal regulated cannabis industry.
- Mr. Whitney currently has investments in a cannabis investment fund, Mantis Growth Investments, and he is a member of the fund's Board of Directors.
- Mr. Whitney is a director for the Cannabis Advisory Group (CAG) in New Jersey, a non-profit policy think tank
- Mr. Whitney is an advisor to CTRUST, a cannabis centric credit agency
- Whitney Economics is a member of the European Industrial Hemp Association.
- Mr. Whitney is a founder of Every Day Hemp Company, an Oregon-based manufacturer of hemp based plastic products.

APPENDIX 4:
Methodology

Market Factors that Help Shape the License Structure

In order to ascertain the number of licenses that would be viable at each step in the cannabis value chain, there are a few items that need to be considered.

- **The Demand –** This is the amount of cannabis that has been consumed in the past and is forecasted to be consumed in the future. This was defined in terms of cannabis products, cannabis output requirements or cannabis revenues. This data is available and tracked by LCB
- **The Supply –** This is the amount of cultivated output produced over a given period and is also the amount of capacity that has been licensed. This was used to ascertain how much supply is available to meet the demand. If there is too much supply capacity or output, then no additional licenses are recommended, if there is not enough, then the current supply capacity will help define how much more is needed.
- **The number of consumers in an area –** The number of consumers was determined by federal surveys. It was also be derived other ways. The number of consumers in an area determined how much potential demand there is as well as how much supply will be needed.
- **The level of consumption by the consumers –** This is defined by how much cultivated output is consumed per capita. This was calculated by examining the number of consumers participating in the legal program, how much inventory was available and how much was left over at the end of a period. The difference is the amount of consumption. Per capita consumption helps define the requirements for supply capacity.
- **The number of consumers participating in the legal regulatory marketplace –** This is defined as legal participation. Legal participation is important as it is a key public policy objective. The goal is to maximize the legal of legal consumer participation by incentivizing the consumer to participate.
- **The projected growth in the market –** This can be calculated various ways, but it is an estimation of how much additional demand there will be for the market to support.
- **The number of current licenses issued in an area –** Knowing the number of licenses issued, will help define how many more or less are needed to support the market.
- **The average revenues per license types -** This was ascertained via surveys, via regulatory or via seed to sale data. There is a minimum threshold of economic viability in terms of revenues, particularly at the retail level.

Here is how it works

1. The key to determining the number of viable licenses is initially knowing how much demand there is in total and how much demand there is currently supported.
2. The second key is to assess how much supply there is. This is both installed capacity and how much that capacity is utilized
3. Once the supply and demand are estimated, then it comes down to access. Retailers need a minimum amount of revenue per store to remain viable, whereas consumers need access within a 30 – 40 minutes radius of where they live. The farther the drive, the less likely the consumer will participate legally.
4. The rest is a math equation.

There are nuances to this. That is where the analysis comes in.

The Math: How to Calculate Key Indicators Used in Assessing License Thresholds

Note: This methodology can be applied to the state level or the county level. This report focused primarily on licenses at the county level.

HOW TO CALCULATE DEMAND POTENTIAL

1. Find a reliable source for demographic data. W.E. tends to use census data on population by state
2. Determine the total number of citizens 18 years or older in a given area (state, county, city, region)
3. Divide by 3. This is the total number of cannabis consumers in that area. This is also known as the total addressable market.
   - **The division by 3 is used based on the fact that most mature markets peak in the range of 33% - 37% of adult-use population have consumed cannabis in the past year (Source: SAMSHA)**

How to calculate the supply potential

1. Obtain a breakdown of all license types for cultivation. Different producer licenses have different allowable canopy (Sq ft)
2. Calculate the total square feet for each license type (Indoor, outdoor, greenhouse, etc)
3. To calculate the total output POTENTIAL multiply each license type as follows:
   - **a. For Indoor: 0.432 lbs / sq ft**
   - **b. For Greenhouse: 0.217 lbs / sq ft**
     (Note: 0.101 was used for licenses designated as "both)
   - **c. For Outdoor: 0.101 lbs / sq ft**
   - **d. Source: Resource Innovation Institute**
4. Add the total output of each license type up. This is your total output potential

How to calculate the utilized capacity

1. This data was provided by LCB.
2. Multiply each licensee type by the output potential and then by the utilization rate
3. Utilization rate can be calculated by comparing the amount of capacity licensed versus the actual amount of canopy used.
4. Amount canopy used / amount licensed = utilization rate

How to calculate to total potential supply necessary to meet demand.

1. Determine total # of consumers in the area (based on Census data and usage rates – SAMHSA / Whitney Economics)
2. Multiply by per capita consumption amount – (This is based on proprietary modelling by Whitney Economics assessing the total amount of cultivated output in multiple markets and how much of that output was consumed by cannabis users regardless of consumption type – flower, vapes, edibles, etc)

How to calculate the total sales potential

1. Determine total number of consumers in an area (based on Census data and usage rates – SAMHSA / Whitney Economics)
2. Multiple by a per capita spending rate (This is the average per capita spending that was determined by analyzing average basket sizes, surveys of consumers on spending)
3. This calculates the total POTENTIAL sales (Also known at Total Addressable Market or TAM)
4. Note: This may be periodically adjusted to adjust for general pricing declines and changes in consumer spending patterns.
   - **a. Example: Massachusetts in 2023 experienced flat YoY revenues, but saw product volumes increase.**

How to calculate the percentage of legal sales

1. Determine total sales potential
2. Subtract total legal sales as reported by the regulator
3. Result is the amount of illicit sales
4. The percentage is then calculated by dividing legal sales by total sales potential
5. The result should be a number less than one
   - **a. Legal / Potential = Percentage of legal sales**

Calculating the percentage of legal supply

1. Determine the total supply potential (Based on capacity or utilization)
2. Multiply by the percentage of legal sales

Or

1. Determine the total number of consumers
2. Multiply by the percentage of total legal sales
3. Multiply 1 and 2 by the per capita consumption

Determining the total retail outlets necessary to meet demand

1. Determine to existing total legal sales
2. Examine forecasted year over year (YoY) growth
3. Determine future sales forecast. This is based on the future levels of legal participation
4. Divide future sales forecast by $2.5 million (Min. amount to remain healthy and viable)
5. This gives a rough outline to be used as guidance for further analysis

Determining Maximum Retail potential

1. Determine the total number of consumers in an area
2. Multiply by the per capita spending
3. Divide by $2.5 million
4. This is the upper bound of an area for retail

Determining the level of cultivation (producer) potential – (Note this is based on pounds rather than licenses)

1. Based upon the per capita supply estimates, calculate the total amount of supply already licensed
2. This can be done by multiplying the license types in a given area (State or county) by the average output per square foot of each grow type (Indoor, Greenhouse, Outdoor). This is based on canopy
3. Compare the amount of total supply recommended to support the demand to the amount of cultivation output capacity already licensed
4. The difference is the amount of pounds of additional capacity available to be licensed

Determining the Level of Cultivated Output to Support the Demand

The level of demand is based on the total number of consumers in the state or county. It also considers per capital consumption. An analysis published in 2022 on the total supply of cannabis in the U.S. *(Source: U.S. Cannabis Supply Report – Whitney, July 2022)* showed that the amount of per capita supply that will satisfy consumer demand is remarkably similar regardless of which state the consumer is in. The amount of per capita supply will satisfy demand in a given market is measured by examining how much was produced (Cultivated) and sold through directly to consumers or to processors and how many consumers purchased that output, regardless of product type. In the case of Washington, the per capita supply was multiplied by the total number of consumers in order to get the total potential supply (**1.11 million pounds**) and the total potential supply was multiplied by the level of legal participation forecasted each year to provide yearly cultivated output demand projections from 2024 – 2035.

Determining the number of producer licenses – (Based on output capabilities of applicants)

1. Once the amount of additional capacity is available to be licensed, review each license application for its grow type (indoor, greenhouse, outdoor) and the amount of canopy requested
2. Multiply the canopy requested by the amount of output per square foot model by grow type
3. If the amount of output projected by the applicant is less than the potential in a county, then licensure can move forward.
4. Note: It is very important when it comes to supply that the entire state be assessed for its output, before allocations can be made at the county level.

Determining the number of processing licenses – (Based on output capacity of producers)

1. Determine the output capacity in the state and counties in pounds
2. Divide the number of pounds either by 250 or 500 (Upper and lower bounds). This will determine maximum potential licenses
3. Compare the number of potential licenses by the number of licenses already issued by LCB
4. The different between those numbers will be the number of potential licenses
5. The number of licenses per year can be ascertained by using the amount of legal demand (Based on legal participation rates) each year and dividing by 250 or 500
6. Note: It is very important when it comes to supply that the entire state be assessed for its output, before allocations can be made at the county level.

APPENDIX 5:
CHARTS AND GRAPHS

This section includes charts referenced in the body of this report

Chart: Forecasted Retail License Amounts by County (2024 – 2035)

Description: This chart forecasts the number of licenses for each county in a given year. The forecast considers the amount of legal participation, total revenue and then estimates the number of viable retail licenses that would support the demand. The issuance of licenses greater than forecast may impact the viability of the other licensees. *(For more information on how to calculate license amounts, please see appendix)*

Jurisdiction	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	473	436	476	515	555	595	595	634	634	634	634	634	634
Adams	2	1	1	1	2	2	2	2	2	2	2	2	2
Asotin	3	2	2	2	2	2	2	2	2	2	2	2	2
Benton	4	13	14	16	17	18	18	19	19	19	19	19	19
Chelan	8	5	5	6	6	7	7	7	7	7	7	7	7
Clallam	10	6	6	7	7	8	8	8	8	8	8	8	8
Clark	17	30	33	36	39	41	41	44	44	44	44	44	44
Columbia	1	0	0	0	0	0	0	0	0	0	0	0	0
Cowlitz	13	7	8	9	9	10	10	11	11	11	11	11	11
Douglas	3	3	3	4	4	4	4	4	4	4	4	4	4
Ferry	1	1	1	1	1	1	1	1	1	1	1	1	1
Franklin	3	6	7	8	8	9	9	9	9	9	9	9	9
Garfield		0	0	0	0	0	0	0	0	0	0	0	0
Grant	10	7	7	8	8	9	9	10	10	10	10	10	10
Grays Harbor	10	6	6	7	7	8	8	8	8	8	8	8	8
Island	7	5	6	6	7	7	7	8	8	8	8	8	8
Jefferson	6	2	2	3	3	3	3	3	3	3	3	3	3
King	104	92	101	109	117	126	126	134	134	134	134	134	134
Kitsap	20	16	18	19	21	22	22	24	24	24	24	24	24
Kittitas	6	3	3	4	4	4	4	5	5	5	5	5	5
Klickitat	2	2	2	2	2	2	2	2	2	2	2	2	2
Lewis	4	6	6	7	7	8	8	8	8	8	8	8	8
Lincoln	3	1	1	1	1	1	1	1	1	1	1	1	1
Mason	9	5	5	6	6	7	7	7	7	7	7	7	7
Okanogan	9	3	3	4	4	4	4	4	4	4	4	4	4
Pacific	3	2	2	2	2	3	3	3	3	3	3	3	3
Pend Oreille	1	1	1	1	1	1	1	1	1	1	1	1	1
Pierce	32	57	62	67	72	77	77	82	82	82	82	82	82
San Juan	3	1	1	1	1	1	1	1	1	1	1	1	1
Skagit	18	8	9	9	10	11	11	11	11	11	11	11	11
Skamania	2	1	1	1	1	1	1	1	1	1	1	1	1
Snohomish	50	47	52	56	60	65	65	69	69	69	69	69	69
Spokane	33	36	39	43	46	49	49	52	52	52	52	52	52
Stevens	7	3	4	4	4	5	5	5	5	5	5	5	5
Thurston	21	19	21	22	24	26	26	28	28	28	28	28	28
Wahkiakum	2	0	0	0	0	0	0	0	0	0	0	0	0
Walla Walla	3	4	4	5	5	6	6	6	6	6	6	6	6
Whatcom	25	15	16	18	19	20	20	22	22	22	22	22	22
Whitman	7	3	4	4	4	5	5	5	5	5	5	5	5
Yakima	11	17	18	20	21	23	23	24	24	24	24	24	24
		436	**476**	**515**	**555**	**595**	**595**	**634**	**634**	**634**	**634**	**634**	**634**

Source: LCB (Licenses), Whitney Economics (Forecasted number of retail licenses by year)

Chart: Retail License Current vs. Forecasted License Demand Deficits

Description: This chart compares the number of current licenses versus the number of licenses forecasted through 2035. It then lists how many additional licenses would be viable. A number in red indicates that the current licenses are insufficient to meet future demand and that more could be issued by LCB

Jurisdiction	Current	Upper bound (Assumes all demand supported in legal stores, zero illicit)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	473	(320)	37	(3)	(42)	(82)	(122)	(122)	(161)	(161)	(161)	(161)	(161)	(161)
Adams	2	(0)	1	1	1	0	0	0	0	0	0	0	0	0
Asotin	3	0	1	1	1	1	1	1	1	1	1	1	1	1
Benton	4	(20)	(9)	(10)	(12)	(13)	(14)	(14)	(15)	(15)	(15)	(15)	(15)	(15)
Chelan	8	(1)	3	3	2	2	1	1	1	1	1	1	1	1
Clallam	10	(0)	4	4	3	3	2	2	2	2	2	2	2	2
Clark	17	(38)	(13)	(16)	(19)	(22)	(24)	(24)	(27)	(27)	(27)	(27)	(27)	(27)
Columbia	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cowlitz	13	(0)	6	5	4	4	3	3	2	2	2	2	2	2
Douglas	3	(2)	0	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Ferry	1	(0)	0	0	0	0	0	0	0	0	0	0	0	0
Franklin	3	(9)	(3)	(4)	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)
Garfield		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Grant	10	(2)	3	3	2	2	1	1	0	0	0	0	0	0
Grays Harbor	10	(0)	4	4	3	3	2	2	2	2	2	2	2	2
Island	7	(3)	2	1	1	0	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)
Jefferson	6	2	4	4	3	3	3	3	3	3	3	3	3	3
King	104	(64)	12	3	(5)	(13)	(22)	(22)	(30)	(30)	(30)	(30)	(30)	(30)
Kitsap	20	(9)	4	2	1	(1)	(2)	(2)	(4)	(4)	(4)	(4)	(4)	(4)
Kittitas	6	0	3	3	2	2	2	2	1	1	1	1	1	1
Klickitat	2	(1)	0	0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Lewis	4	(6)	(2)	(2)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Lincoln	3	2	2	2	2	2	2	2	2	2	2	2	2	2
Mason	9	0	4	4	3	3	2	2	2	2	2	2	2	2
Okanogan	9	4	6	6	5	5	5	5	5	5	5	5	5	5
Pacific	3	(0)	1	1	1	1	0	0	0	0	0	0	0	0
Pend Oreille	1	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Pierce	32	(71)	(25)	(30)	(35)	(40)	(45)	(45)	(50)	(50)	(50)	(50)	(50)	(50)
San Juan	3	1	2	2	2	2	2	2	2	2	2	2	2	2
Skagit	18	4	10	9	9	8	7	7	7	7	7	7	7	7
Skamania	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Snohomish	50	(36)	3	(2)	(6)	(10)	(15)	(15)	(19)	(19)	(19)	(19)	(19)	(19)
Spokane	33	(32)	(3)	(6)	(10)	(13)	(16)	(16)	(19)	(19)	(19)	(19)	(19)	(19)
Stevens	7	1	4	3	3	3	2	2	2	2	2	2	2	2
Thurston	21	(14)	2	0	(1)	(3)	(5)	(5)	(7)	(7)	(7)	(7)	(7)	(7)
Wahkiakum	2	1	2	2	2	2	2	2	2	2	2	2	2	2
Walla Walla	3	(4)	(1)	(1)	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Whatcom	25	(2)	10	9	7	6	5	5	3	3	3	3	3	3
Whitman	7	1	4	3	3	3	2	2	2	2	2	2	2	2
Yakima	11	(20)	(6)	(7)	(9)	(10)	(12)	(12)	(13)	(13)	(13)	(13)	(13)	(13)
		Statewide Delta by year ---->	37	(3)	(42)	(82)	(122)	(122)	(161)	(161)	(161)	(161)	(161)	(161)

Source: LCB (Licenses), Whitney Economics (Forecasted number of retail licenses by year)

Chart: Forecasted Retail License Amounts by County (2024 – 2035) Based on TEV with 10 Employees

Description: This chart forecasts the number of licenses for each county in a given year. The forecast considers the amount of legal participation, total revenue and then estimates the number of viable retail licenses that would support the demand. The issuance of licenses greater than forecast may impact the viability of the other licensees. *(For more information on how to calculate license amounts, please see appendix)*. This retail license projection is based on the Threshold of Economic Viability assuming 10 employees.

Jurisdiction	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	473	436	476	515	555	595	595	634	634	634	634	634	634
Adams	2	1	1	1	2	2	2	2	2	2	2	2	2
Asotin	3	2	2	2	2	2	2	2	2	2	2	2	2
Benton	4	13	14	16	17	18	18	19	19	19	19	19	19
Chelan	8	5	5	6	6	7	7	7	7	7	7	7	7
Clallam	10	6	6	7	7	8	8	8	8	8	8	8	8
Clark	17	30	33	36	39	41	41	44	44	44	44	44	44
Columbia	1	0	0	0	0	0	0	0	0	0	0	0	0
Cowlitz	13	7	8	9	9	10	10	11	11	11	11	11	11
Douglas	3	3	3	4	4	4	4	4	4	4	4	4	4
Ferry	1	1	1	1	1	1	1	1	1	1	1	1	1
Franklin	3	6	7	8	8	9	9	9	9	9	9	9	9
Garfield		0	0	0	0	0	0	0	0	0	0	0	0
Grant	10	7	7	8	8	9	9	10	10	10	10	10	10
Grays Harbor	10	6	6	7	7	8	8	8	8	8	8	8	8
Island	7	5	6	6	7	7	7	8	8	8	8	8	8
Jefferson	6	2	2	3	3	3	3	3	3	3	3	3	3
King	104	92	101	109	117	126	126	134	134	134	134	134	134
Kitsap	20	16	18	19	21	22	22	24	24	24	24	24	24
Kittitas	6	3	3	4	4	4	4	5	5	5	5	5	5
Klickitat	2	2	2	2	2	2	2	2	2	2	2	2	2
Lewis	4	6	6	7	7	8	8	8	8	8	8	8	8
Lincoln	3	1	1	1	1	1	1	1	1	1	1	1	1
Mason	9	5	5	6	6	7	7	7	7	7	7	7	7
Okanogan	9	3	3	4	4	4	4	4	4	4	4	4	4
Pacific	3	2	2	2	2	3	3	3	3	3	3	3	3
Pend Oreille	1	1	1	1	1	1	1	1	1	1	1	1	1
Pierce	32	57	62	67	72	77	77	82	82	82	82	82	82
San Juan	3	1	1	1	1	1	1	1	1	1	1	1	1
Skagit	18	8	9	9	10	11	11	11	11	11	11	11	11
Skamania	2	1	1	1	1	1	1	1	1	1	1	1	1
Snohomish	50	47	52	56	60	65	65	69	69	69	69	69	69
Spokane	33	36	39	43	46	49	49	52	52	52	52	52	52
Stevens	7	3	4	4	4	5	5	5	5	5	5	5	5
Thurston	21	19	21	22	24	26	26	28	28	28	28	28	28
Wahkiakum	2	0	0	0	0	0	0	0	0	0	0	0	0
Walla Walla	3	4	4	5	5	6	6	6	6	6	6	6	6
Whatcom	25	15	16	18	19	20	20	22	22	22	22	22	22
Whitman	7	3	4	4	4	5	5	5	5	5	5	5	5
Yakima	11	17	18	20	21	23	23	24	24	24	24	24	24
		436	**476**	**515**	**555**	**595**	**595**	**634**	**634**	**634**	**634**	**634**	**634**

Source: LCB (Licenses), Whitney Economics (Forecasted number of retail licenses by year)

Chart: Retail Opportunity with a Lower Threshold of Economic Viability (TEV) Value

Description: In some instances, especially in rural areas, less labor is needed for a retailer to be viable. This chart reduces the amount of labor in the model from 10 FTE to 5 FTE and then calculates the number of forecasted viable retail licenses by year. Not all counties can support this model, but those than can appear to have opportunities for additional licensure. Future applicants must be aware of the risks of potential saturation.

Jurisdiction	Current	Potential - Upper Bound (MAX)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	473	1369	722	753	821	890	958	1027	1027	1095	1095	1095	1095	1095	1095
Adams	2	3	2	2	2	2	2	2	2	3	3	3	3	3	3
Asotin	3	4	2	2	3	3	3	3	3	3	3	3	3	3	3
Benton	4	35	19	19	21	23	25	26	26	28	28	28	28	28	28
Chelan	8	15	8	8	9	10	11	11	11	12	12	12	12	12	12
Clallam	10	14	7	8	8	9	10	11	11	11	11	11	11	11	11
Clark	17	90	48	50	54	59	63	68	68	72	72	72	72	72	72
Columbia	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1
Cowlitz	13	22	11	12	13	14	15	16	16	17	17	17	17	17	17
Douglas	3	9	5	5	5	6	6	6	6	7	7	7	7	7	7
Ferry	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Franklin	3	16	8	9	10	10	11	12	12	13	13	13	13	13	13
Garfield		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grant	10	19	10	10	11	12	13	14	14	15	15	15	15	15	15
Grays Harbor	10	13	7	7	8	9	9	10	10	11	11	11	11	11	11
Island	7	16	9	9	10	11	11	12	12	13	13	13	13	13	13
Jefferson	6	5	2	3	3	3	3	3	3	4	4	4	4	4	4
King	104	391	206	215	235	254	274	293	293	313	313	313	313	313	313
Kitsap	20	54	29	30	33	35	38	41	41	43	43	43	43	43	43
Kittitas	6	9	5	5	5	6	6	7	7	7	7	7	7	7	7
Klickitat	2	5	2	2	3	3	3	3	3	4	4	4	4	4	4
Lewis	4	16	8	9	9	10	11	12	12	13	13	13	13	13	13
Lincoln	3	2	1	1	1	1	2	2	2	2	2	2	2	2	2
Mason	9	14	7	7	8	9	9	10	10	11	11	11	11	11	11
Okanogan	9	9	5	5	5	6	6	7	7	7	7	7	7	7	7
Pacific	3	5	3	3	3	3	3	4	4	4	4	4	4	4	4
Pend Oreille	1	3	1	1	2	2	2	2	2	2	2	2	2	2	2
Pierce	32	129	68	71	78	84	91	97	97	103	103	103	103	103	103
San Juan	3	4	2	2	2	2	2	3	3	3	3	3	3	3	3
Skagit	18	23	12	13	14	15	16	17	17	18	18	18	18	18	18
Skamania	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2
Snohomish	50	159	84	88	96	104	112	120	120	128	128	128	128	128	128
Spokane	33	112	59	62	67	73	78	84	84	90	90	90	90	90	90
Stevens	7	8	4	5	5	5	6	6	6	7	7	7	7	7	7
Thurston	21	59	31	33	36	39	42	45	45	48	48	48	48	48	48
Wahkiakum	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Walla Walla	3	11	6	6	7	7	8	8	8	9	9	9	9	9	9
Whatcom	25	49	26	27	29	32	34	36	36	39	39	39	39	39	39
Whitman	7	9	5	5	5	6	6	7	7	7	7	7	7	7	7
Yakima	11	31	16	17	18	20	21	23	23	24	24	24	24	24	24

Source: LCB (Licenses), Whitney Economics (Forecasted number of retail licenses by year)

Chart: Retail Opportunity with a Lower Threshold of Economic Viability (TEV) Value (Deficits)

Description: This chart examines the license potential of a retail operation with only 5 employees versus the industry standard 10. There is an immediate need for licenses, but the limited staff may not be able to generate the higher revenues necessary to sustain the operation in the long term. This chart compares the current number of licenses versus the number of licenses forecasted through 2035. It lists the differences between current licenses and forecasted licenses. A number in red indicates that the current licenses are insufficient to meet future demand and that more could be issued by LCB

Jurisdiction	Current	Maximum	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	473	(896)	(249)	(280)	(348)	(417)	(485)	(554)	(554)	(622)	(622)	(622)	(622)	(622)	(622)
Adams	2	(1)	0	0	0	(0)	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)
Asotin	3	(1)	1	1	0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Benton	4	(31)	(15)	(15)	(17)	(19)	(21)	(22)	(22)	(24)	(24)	(24)	(24)	(24)	(24)
Chelan	8	(7)	(0)	(0)	(1)	(2)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)
Clallam	10	(4)	3	2	2	1	0	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Clark	17	(73)	(31)	(33)	(37)	(42)	(46)	(51)	(51)	(55)	(55)	(55)	(55)	(55)	(55)
Columbia	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0
Cowlitz	13	(9)	2	1	(0)	(1)	(2)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)
Douglas	3	(6)	(2)	(2)	(2)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)
Ferry	1	(1)	0	0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Franklin	3	(13)	(5)	(6)	(7)	(7)	(8)	(9)	(9)	(10)	(10)	(10)	(10)	(10)	(10)
Garfield		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Grant	10	(9)	(0)	(0)	(1)	(2)	(3)	(4)	(4)	(5)	(5)	(5)	(5)	(5)	(5)
Grays Harbor	10	(3)	3	3	2	1	1	0	0	(1)	(1)	(1)	(1)	(1)	(1)
Island	7	(9)	(2)	(2)	(3)	(4)	(4)	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(6)
Jefferson	6	1	4	3	3	3	3	3	3	2	2	2	2	2	2
King	104	(287)	(102)	(111)	(131)	(150)	(170)	(189)	(189)	(209)	(209)	(209)	(209)	(209)	(209)
Kitsap	20	(34)	(9)	(10)	(13)	(15)	(18)	(21)	(21)	(23)	(23)	(23)	(23)	(23)	(23)
Kittitas	6	(3)	1	1	1	0	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Klickitat	2	(3)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)
Lewis	4	(12)	(4)	(5)	(5)	(6)	(7)	(8)	(8)	(9)	(9)	(9)	(9)	(9)	(9)
Lincoln	3	1	2	2	2	2	1	1	1	1	1	1	1	1	1
Mason	9	(5)	2	2	1	0	(0)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)
Okanogan	9	0	4	4	4	3	3	2	2	2	2	2	2	2	2
Pacific	3	(2)	0	0	0	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Pend Oreille	1	(2)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Pierce	32	(97)	(36)	(39)	(46)	(52)	(59)	(65)	(65)	(71)	(71)	(71)	(71)	(71)	(71)
San Juan	3	(1)	1	1	1	1	1	0	0	0	0	0	0	0	0
Skagit	18	(5)	6	5	4	3	2	1	1	(0)	(0)	(0)	(0)	(0)	(0)
Skamania	2	(0)	1	1	1	1	1	0	0	0	0	0	0	0	0
Snohomish	50	(109)	(34)	(38)	(46)	(54)	(62)	(70)	(70)	(78)	(78)	(78)	(78)	(78)	(78)
Spokane	33	(79)	(26)	(29)	(34)	(40)	(45)	(51)	(51)	(57)	(57)	(57)	(57)	(57)	(57)
Stevens	7	(1)	3	2	2	2	1	1	1	0	0	0	0	0	0
Thurston	21	(38)	(10)	(12)	(15)	(18)	(21)	(24)	(24)	(27)	(27)	(27)	(27)	(27)	(27)
Wahkiakum	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1
Walla Walla	3	(8)	(3)	(3)	(4)	(4)	(5)	(5)	(5)	(6)	(6)	(6)	(6)	(6)	(6)
Whatcom	25	(24)	(1)	(2)	(4)	(7)	(9)	(11)	(11)	(14)	(14)	(14)	(14)	(14)	(14)
Whitman	7	(2)	2	2	2	1	1	0	0	(0)	(0)	(0)	(0)	(0)	(0)
Yakima	11	(20)	(5)	(6)	(7)	(9)	(10)	(12)	(12)	(13)	(13)	(13)	(13)	(13)	(13)
		Statewide Delta by year ---->	(249)	(280)	(348)	(417)	(485)	(554)	(554)	(622)	(622)	(622)	(622)	(622)	(622)

Source: LCB (Licenses), Whitney Economics (Forecasted number of retail licenses by year)

Chart: Determinants in the Threshold of Economic Viability

Description: This chart examines some of the main components of determining the threshold of economic viability by county. It examines sales, product acquisition costs, labor, federal taxes, additional costs (Rent, Debt Service, Insurance, Compliance, etc). The model also incorporates roughly $100,000 of additional expenses that occur throughout the year.

The key here is that it takes a minimum amount of revenue for a retailer to be viable and sustain its operations. If a retailer dips below this threshold, it can still operate, but not in the long run. The operator may have to cut expenses, or make a decision to operate in both the illicit and legal markets in order to avoid business failure. The TEV is an indicator of how close is the operators to economic distress.

Washington	Sales per Month	TEV Sales	Product acquisition costs	Labor units	Per capita Income by county	Labor Cost	280E Taxes	Remainder	Additional Expenses	Remainder - addtl
Adams	$190,000	$2,280,000	$1,140,000	10	$47,933	$479,330	$239,400	$421,270	$302,917	*$118,353*
Asotin	$205,000	$2,460,000	$1,230,000	10	$54,340	$543,400	$258,300	$428,300	$313,631	*$114,669*
Benton	$205,000	$2,460,000	$1,230,000	10	$54,454	$544,540	$258,300	$427,160	$313,807	*$113,353*
Chelan	$225,000	$2,700,000	$1,350,000	10	$62,685	$626,850	$283,500	$439,650	$327,613	*$112,037*
Clallam	$205,000	$2,460,000	$1,230,000	10	$55,566	$555,660	$258,300	$416,040	$315,519	*$100,521*
Clark	$230,000	$2,760,000	$1,380,000	10	$65,522	$655,220	$289,800	$434,980	$332,264	*$102,716*
Columbia	$225,000	$2,700,000	$1,350,000	10	$62,566	$625,660	$283,500	$440,840	$327,430	*$113,410*
Cowlitz	$205,000	$2,460,000	$1,230,000	10	$54,630	$546,300	$258,300	$425,400	$314,078	*$111,322*
Douglas	$190,000	$2,280,000	$1,140,000	10	$49,114	$491,140	$239,400	$409,460	$304,735	*$104,725*
Ferry	$180,000	$2,160,000	$1,080,000	10	$44,144	$441,440	$226,800	$411,760	$296,516	*$115,244*
Franklin	$185,000	$2,220,000	$1,110,000	10	$46,072	$460,720	$233,100	$416,180	$299,768	*$116,412*
Garfield	$215,000	$2,580,000	$1,290,000	10	$58,112	$581,120	$270,900	$437,980	$320,005	*$117,975*
Grant	$190,000	$2,280,000	$1,140,000	10	$48,963	$489,630	$239,400	$410,970	$304,503	*$106,467*
Grays Harbor	$185,000	$2,220,000	$1,110,000	10	$46,878	$468,780	$233,100	$408,120	$301,009	*$107,111*
Island	$230,000	$2,760,000	$1,380,000	10	$65,564	$655,640	$289,800	$434,560	$332,329	*$102,231*
Jefferson	$225,000	$2,700,000	$1,350,000	10	$62,898	$628,980	$283,500	$437,520	$327,941	*$109,579*
King	$350,000	$4,200,000	$2,100,000	10	$113,819	$1,138,190	$441,000	$520,810	$413,424	*$107,386*
Kitsap	$240,000	$2,880,000	$1,440,000	10	$68,198	$681,980	$302,400	$455,620	$336,951	*$118,669*
Kittitas	$205,000	$2,460,000	$1,230,000	10	$55,076	$550,760	$258,300	$420,940	$314,765	*$106,175*
Klickitat	$200,000	$2,400,000	$1,200,000	10	$53,305	$533,050	$252,000	$414,950	$311,755	*$103,195*
Lewis	$200,000	$2,400,000	$1,200,000	10	$52,769	$527,690	$252,000	$420,310	$310,929	*$109,381*
Lincoln	$200,000	$2,400,000	$1,200,000	10	$51,953	$519,530	$252,000	$428,470	$309,673	*$118,797*
Mason	$195,000	$2,340,000	$1,170,000	10	$51,375	$513,750	$245,700	$410,550	$308,500	*$102,050*
Okanogan	$195,000	$2,340,000	$1,170,000	10	$49,552	$495,520	$245,700	$428,780	$305,692	*$123,088*
Pacific	$185,000	$2,220,000	$1,110,000	10	$46,498	$464,980	$233,100	$411,920	$300,424	*$111,496*
Pend Oreille	$190,000	$2,280,000	$1,140,000	10	$48,892	$488,920	$239,400	$411,680	$304,393	*$107,287*
Pierce	$220,000	$2,640,000	$1,320,000	10	$59,986	$599,860	$277,200	$442,940	$323,174	*$119,766*
San Juan	$290,000	$3,480,000	$1,740,000	10	$89,744	$897,440	$365,400	$477,160	$372,958	*$104,202*
Skagit	$225,000	$2,700,000	$1,350,000	10	$62,915	$629,150	$283,500	$437,350	$327,967	*$109,383*
Skamania	$225,000	$2,700,000	$1,350,000	10	$62,472	$624,720	$283,500	$441,780	$327,285	*$114,495*
Snohomish	$240,000	$2,880,000	$1,440,000	10	$69,010	$690,100	$302,400	$447,500	$338,201	*$109,299*
Spokane	$205,000	$2,460,000	$1,230,000	10	$54,223	$542,230	$258,300	$429,470	$313,451	*$116,019*
Stevens	$185,000	$2,220,000	$1,110,000	10	$46,750	$467,500	$233,100	$409,400	$300,812	*$108,588*
Thurston	$215,000	$2,580,000	$1,290,000	10	$59,697	$596,970	$270,900	$422,130	$322,446	*$99,684*
Wahkiakum	$195,000	$2,340,000	$1,170,000	10	$50,372	$503,720	$245,700	$420,580	$306,955	*$113,625*
Walla Walla	$205,000	$2,460,000	$1,230,000	10	$55,436	$554,360	$258,300	$417,340	$315,319	*$102,021*
Whatcom	$215,000	$2,580,000	$1,290,000	10	$58,993	$589,930	$270,900	$429,170	$321,362	*$107,808*
Whitman	$185,000	$2,220,000	$1,110,000	10	$46,672	$466,720	$233,100	$410,180	$300,692	*$109,488*
Yakima	$190,000	$2,280,000	$1,140,000	10	$49,266	$492,660	$239,400	$407,940	$304,969	*$102,971*

Source: Whitney Economics

Chart: Examples of "Additional Expenses"

Description: Additional expenses used the TEV model are rent, insurance, debt service, bank account expenses, payroll taxes. These are by no means all inclusive, that is why the model also includes roughly $100,000 per operator for miscellaneous expenses not captured here.

Washington	Rent	Rent Compare	Payroll Taxes (FICA)	Health Care Insurance $7170/employee ($5898 employer only)	Property Insurance	Debt Service	State Business Taxes	Regulatory License	Bank Account
Adams	$90,000	$68,400	$73,816.82	$58,980	$12,000	$50,000	$10,739	$1,381	$6,000
Asotin	$90,000	$73,800	$83,683.60	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Benton	$90,000	$73,800	$83,859.16	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Chelan	$90,000	$81,000	$96,534.90	$58,980	$12,000	$50,000	$12,717	$1,381	$6,000
Clallam	$90,000	$73,800	$85,571.64	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Clark	$90,000	$82,800	$100,903.88	$58,980	$12,000	$50,000	$13,000	$1,381	$6,000
Columbia	$90,000	$81,000	$96,351.64	$58,980	$12,000	$50,000	$12,717	$1,381	$6,000
Cowlitz	$90,000	$73,800	$84,130.20	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Douglas	$90,000	$68,400	$75,635.56	$58,980	$12,000	$50,000	$10,739	$1,381	$6,000
Ferry	$90,000	$64,800	$67,981.76	$58,980	$12,000	$50,000	$10,174	$1,381	$6,000
Franklin	$90,000	$66,600	$70,950.88	$58,980	$12,000	$50,000	$10,456	$1,381	$6,000
Garfield	$90,000	$77,400	$89,492.48	$58,980	$12,000	$50,000	$12,152	$1,381	$6,000
Grant	$90,000	$68,400	$75,403.02	$58,980	$12,000	$50,000	$10,739	$1,381	$6,000
Grays Harbor	$90,000	$66,600	$72,192.12	$58,980	$12,000	$50,000	$10,456	$1,381	$6,000
Island	$90,000	$82,800	$100,968.56	$58,980	$12,000	$50,000	$13,000	$1,381	$6,000
Jefferson	$90,000	$81,000	$96,862.92	$58,980	$12,000	$50,000	$12,717	$1,381	$6,000
King	$90,000	$126,000	$175,281.26	$58,980	$12,000	$50,000	$19,782	$1,381	$6,000
Kitsap	$90,000	$86,400	$105,024.92	$58,980	$12,000	$50,000	$13,565	$1,381	$6,000
Kittitas	$90,000	$73,800	$84,817.04	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Klickitat	$90,000	$72,000	$82,089.70	$58,980	$12,000	$50,000	$11,304	$1,381	$6,000
Lewis	$90,000	$72,000	$81,264.26	$58,980	$12,000	$50,000	$11,304	$1,381	$6,000
Lincoln	$90,000	$72,000	$80,007.62	$58,980	$12,000	$50,000	$11,304	$1,381	$6,000
Mason	$90,000	$70,200	$79,117.50	$58,980	$12,000	$50,000	$11,021	$1,381	$6,000
Okanogan	$90,000	$70,200	$76,310.08	$58,980	$12,000	$50,000	$11,021	$1,381	$6,000
Pacific	$90,000	$66,600	$71,606.92	$58,980	$12,000	$50,000	$10,456	$1,381	$6,000
Pend Oreille	$90,000	$68,400	$75,293.68	$58,980	$12,000	$50,000	$10,739	$1,381	$6,000
Pierce	$90,000	$79,200	$92,378.44	$58,980	$12,000	$50,000	$12,434	$1,381	$6,000
San Juan	$90,000	$104,400	$138,205.76	$58,980	$12,000	$50,000	$16,391	$1,381	$6,000
Skagit	$90,000	$81,000	$96,889.10	$58,980	$12,000	$50,000	$12,717	$1,381	$6,000
Skamania	$90,000	$81,000	$96,206.88	$58,980	$12,000	$50,000	$12,717	$1,381	$6,000
Snohomish	$90,000	$86,400	$106,275.40	$58,980	$12,000	$50,000	$13,565	$1,381	$6,000
Spokane	$90,000	$73,800	$83,503.42	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Stevens	$90,000	$66,600	$71,995.00	$58,980	$12,000	$50,000	$10,456	$1,381	$6,000
Thurston	$90,000	$77,400	$91,933.38	$58,980	$12,000	$50,000	$12,152	$1,381	$6,000
Wahkiakum	$90,000	$70,200	$77,572.88	$58,980	$12,000	$50,000	$11,021	$1,381	$6,000
Walla Walla	$90,000	$73,800	$85,371.44	$58,980	$12,000	$50,000	$11,587	$1,381	$6,000
Whatcom	$90,000	$77,400	$90,849.22	$58,980	$12,000	$50,000	$12,152	$1,381	$6,000
Whitman	$90,000	$66,600	$71,874.88	$58,980	$12,000	$50,000	$10,456	$1,381	$6,000
Yakima	$90,000	$68,400	$75,869.64	$58,980	$12,000	$50,000	$10,739	$1,381	$6,000

Source: Whitney Economics

Chart: Determinants in the Threshold of Economic Viability (Lower TEV)

Description: This chart examines some of the main components of determining the threshold of economic viability by county. It examines sales, product acquisition costs, labor, federal taxes, additional costs (Rent, Debt Service, Insurance, Compliance, etc). The model also incorporates roughly $100,000 of additional expenses that are occur throughout the year. The one difference in this TEV is that labor is reduced from 10 employees to 5 employees.

Washington	Sales per Month	TEV Sales (Lower)	Product acquisition costs	Labor units	Per capita Income by county	Labor Cost	280E Taxes	Remainder	Additional Expenses	Remainder - addtl
Adams	$125,000	$1,500,000	$750,000	5	$47,933	$239,665	$157,500	$352,835	$232,844	$119,991
Asotin	$130,000	$1,560,000	$780,000	5	$54,340	$271,700	$163,800	$344,500	$238,060	$106,440
Benton	$130,000	$1,560,000	$780,000	5	$54,454	$272,270	$163,800	$343,930	$238,148	$105,782
Chelan	$140,000	$1,680,000	$840,000	5	$62,685	$313,425	$176,400	$350,175	$245,051	$105,124
Clallam	$130,000	$1,560,000	$780,000	5	$55,566	$277,830	$163,800	$338,370	$239,004	$99,366
Clark	$145,000	$1,740,000	$870,000	5	$65,522	$327,610	$182,700	$359,690	$247,518	$112,172
Columbia	$140,000	$1,680,000	$840,000	5	$62,566	$312,830	$176,400	$350,770	$244,960	$105,810
Cowlitz	$130,000	$1,560,000	$780,000	5	$54,630	$273,150	$163,800	$343,050	$238,284	$104,766
Douglas	$125,000	$1,500,000	$750,000	5	$49,114	$245,570	$157,500	$346,930	$233,754	$113,176
Ferry	$120,000	$1,440,000	$720,000	5	$44,144	$220,720	$151,200	$348,080	$229,644	$118,436
Franklin	$120,000	$1,440,000	$720,000	5	$46,072	$230,360	$151,200	$338,440	$231,129	$107,311
Garfield	$135,000	$1,620,000	$810,000	5	$58,112	$290,560	$170,100	$349,340	$241,247	$108,093
Grant	$125,000	$1,500,000	$750,000	5	$48,963	$244,815	$157,500	$347,685	$233,638	$114,047
Grays Harbor	$120,000	$1,440,000	$720,000	5	$46,878	$234,390	$151,200	$334,410	$231,749	$102,661
Island	$145,000	$1,740,000	$870,000	5	$65,564	$327,820	$182,700	$359,480	$247,551	$111,929
Jefferson	$140,000	$1,680,000	$840,000	5	$62,898	$314,490	$176,400	$349,110	$245,215	$103,895
King	$205,000	$2,460,000	$1,230,000	5	$113,819	$569,095	$258,300	$402,605	$288,098	$114,507
Kitsap	$150,000	$1,800,000	$900,000	5	$68,198	$340,990	$189,000	$370,010	$249,861	$120,149
Kittitas	$130,000	$1,560,000	$780,000	5	$55,076	$275,380	$163,800	$340,820	$238,627	$102,193
Klickitat	$130,000	$1,560,000	$780,000	5	$53,305	$266,525	$163,800	$349,675	$237,263	$112,412
Lewis	$130,000	$1,560,000	$780,000	5	$52,769	$263,845	$163,800	$352,355	$236,851	$115,504
Lincoln	$130,000	$1,560,000	$780,000	5	$51,953	$259,765	$163,800	$356,435	$236,222	$120,213
Mason	$125,000	$1,500,000	$750,000	5	$51,375	$256,875	$157,500	$335,625	$235,495	$100,130
Okanogan	$125,000	$1,500,000	$750,000	5	$49,552	$247,760	$157,500	$344,740	$234,091	$110,649
Pacific	$120,000	$1,440,000	$720,000	5	$46,498	$232,490	$151,200	$336,310	$231,457	$104,853
Pend Oreille	$125,000	$1,500,000	$750,000	5	$48,892	$244,460	$157,500	$348,040	$233,583	$114,457
Pierce	$140,000	$1,680,000	$840,000	5	$59,986	$299,930	$176,400	$363,670	$242,973	$120,697
San Juan	$175,000	$2,100,000	$1,050,000	5	$89,744	$448,720	$220,500	$380,780	$267,865	$112,915
Skagit	$140,000	$1,680,000	$840,000	5	$62,915	$314,575	$176,400	$349,025	$245,228	$103,797
Skamania	$140,000	$1,680,000	$840,000	5	$62,472	$312,360	$176,400	$351,240	$244,887	$106,353
Snohomish	$150,000	$1,800,000	$900,000	5	$69,010	$345,050	$189,000	$365,950	$250,487	$115,463
Spokane	$130,000	$1,560,000	$780,000	5	$54,223	$271,115	$163,800	$345,085	$237,970	$107,115
Stevens	$120,000	$1,440,000	$720,000	5	$46,750	$233,750	$151,200	$335,050	$231,651	$103,399
Thurston	$140,000	$1,680,000	$840,000	5	$59,697	$298,485	$176,400	$365,115	$242,750	$122,365
Wahkiakum	$125,000	$1,500,000	$750,000	5	$50,372	$251,860	$157,500	$340,640	$234,722	$105,918
Walla Walla	$130,000	$1,560,000	$780,000	5	$55,436	$277,180	$163,800	$339,020	$238,904	$100,116
Whatcom	$135,000	$1,620,000	$810,000	5	$58,993	$294,965	$170,100	$344,935	$241,926	$103,009
Whitman	$120,000	$1,440,000	$720,000	5	$46,672	$233,360	$151,200	$335,440	$231,591	$103,849
Yakima	$125,000	$1,500,000	$750,000	5	$49,266	$246,330	$157,500	$346,170	$233,871	$112,299

Source: Whitney Economics

Chart: Supply vs. Demand

Description: This chart examines the total capacity by county (Pounds of capacity) and then lists the total amount of supply forecasted each year that will meet the demand for all products. Supply is defined as cultivated output, since the output can be used in multiple products, besides flower and pre-rolls.

Washington county	Active Producer Licenses in 2024	Total Supply Capacity 2024	Demand 2024	Estimated Demand 2025	Estimated Demand 2026	Estimated Demand 2027	Estimated Demand 2028	Estimated Demand 2029	Estimated Demand 2030	Estimated Demand 2031	Estimated Demand 2032	Estimated Demand 2033	Estimated Demand 2034	Estimated Demand 2035
Washington State	986	2,610,639	612,416	668,090	723,765	779,439	835,113	835,113	890,787	890,787	890,787	890,787	890,787	890,787
Adams	36	82,268	1,362	1,486	1,610	1,734	1,858	1,858	1,981	1,981	1,981	1,981	1,981	1,981
Asotin	1	864	1,786	1,948	2,110	2,273	2,435	2,435	2,597	2,597	2,597	2,597	2,597	2,597
Benton	41	123,212	15,606	17,025	18,444	19,863	21,281	21,281	22,700	22,700	22,700	22,700	22,700	22,700
Chelan	3	4,947	6,249	6,817	7,386	7,954	8,522	8,522	9,090	9,090	9,090	9,090	9,090	9,090
Clallam	14	36,936	6,493	7,083	7,673	8,263	8,854	8,854	9,444	9,444	9,444	9,444	9,444	9,444
Clark	14	74,466	40,021	43,659	47,298	50,936	54,574	54,574	58,213	58,213	58,213	58,213	58,213	58,213
Columbia	1	518	325	355	384	414	443	443	473	473	473	473	473	473
Cowlitz	20	52,392	8,600	9,382	10,164	10,946	11,727	11,727	12,509	12,509	12,509	12,509	12,509	12,509
Douglas	21	59,237	3,273	3,571	3,868	4,166	4,463	4,463	4,761	4,761	4,761	4,761	4,761	4,761
Ferry	2	3,504	599	653	708	762	816	816	871	871	871	871	871	871
Franklin	0	0	6,806	7,425	8,044	8,662	9,281	9,281	9,900	9,900	9,900	9,900	9,900	9,900
Garfield	0	0	179	195	212	228	244	244	260	260	260	260	260	260
Grant	88	218,645	7,237	7,895	8,553	9,211	9,869	9,869	10,527	10,527	10,527	10,527	10,527	10,527
Grays Harbor	30	117,949	6,106	6,662	7,217	7,772	8,327	8,327	8,882	8,882	8,882	8,882	8,882	8,882
Island	10	19,824	7,191	7,845	8,499	9,152	9,806	9,806	10,460	10,460	10,460	10,460	10,460	10,460
Jefferson	8	11,850	2,951	3,219	3,487	3,755	4,023	4,023	4,292	4,292	4,292	4,292	4,292	4,292
King	44	104,242	185,507	202,371	219,235	236,099	252,964	252,964	269,828	269,828	269,828	269,828	269,828	269,828
Kitsap	13	33,722	22,311	24,339	26,368	28,396	30,424	30,424	32,453	32,453	32,453	32,453	32,453	32,453
Kittitas	7	20,336	3,656	3,988	4,321	4,653	4,985	4,985	5,318	5,318	5,318	5,318	5,318	5,318
Klickitat	11	22,952	1,857	2,026	2,195	2,364	2,533	2,533	2,701	2,701	2,701	2,701	2,701	2,701
Lewis	4	15,552	6,439	7,024	7,609	8,195	8,780	8,780	9,365	9,365	9,365	9,365	9,365	9,365
Lincoln	16	49,823	865	943	1,022	1,101	1,179	1,179	1,258	1,258	1,258	1,258	1,258	1,258
Mason	32	92,163	5,359	5,847	6,334	6,821	7,308	7,308	7,795	7,795	7,795	7,795	7,795	7,795
Okanogan	112	259,513	3,332	3,635	3,937	4,240	4,543	4,543	4,846	4,846	4,846	4,846	4,846	4,846
Pacific	12	41,477	1,974	2,153	2,333	2,512	2,692	2,692	2,871	2,871	2,871	2,871	2,871	2,871
Pend Oreille	4	6,388	1,115	1,217	1,318	1,420	1,521	1,521	1,622	1,622	1,622	1,622	1,622	1,622
Pierce	61	192,449	71,598	78,107	84,616	91,125	97,634	97,634	104,143	104,143	104,143	104,143	104,143	104,143
San Juan	3	3,877	1,576	1,720	1,863	2,006	2,149	2,149	2,293	2,293	2,293	2,293	2,293	2,293
Skagit	24	62,203	10,210	11,138	12,066	12,994	13,923	13,923	14,851	14,851	14,851	14,851	14,851	14,851
Skamania	3	6,367	978	1,066	1,155	1,244	1,333	1,333	1,422	1,422	1,422	1,422	1,422	1,422
Snohomish	82	220,527	65,548	71,506	77,465	83,424	89,383	89,383	95,342	95,342	95,342	95,342	95,342	95,342
Spokane	100	260,796	42,472	46,333	50,194	54,055	57,916	57,916	61,777	61,777	61,777	61,777	61,777	61,777
Stevens	30	64,774	3,683	4,018	4,353	4,688	5,023	5,023	5,357	5,357	5,357	5,357	5,357	5,357
Thurston	57	159,144	23,509	25,646	27,784	29,921	32,058	32,058	34,195	34,195	34,195	34,195	34,195	34,195
Wahkiakum	1	2,121	378	412	447	481	515	515	550	550	550	550	550	550
Walla Walla	4	8,080	4,829	5,268	5,707	6,146	6,586	6,586	7,025	7,025	7,025	7,025	7,025	7,025
Whatcom	51	105,528	18,472	20,151	21,830	23,509	25,189	25,189	26,868	26,868	26,868	26,868	26,868	26,868
Whitman	9	16,271	3,572	3,896	4,221	4,546	4,871	4,871	5,195	5,195	5,195	5,195	5,195	5,195
Yakima	17	55,723	18,392	20,064	21,736	23,408	25,080	25,080	26,752	26,752	26,752	26,752	26,752	26,752

Source: Whitney Economics, LCB

Chart: Difference Between Current Supply Capacity vs. Demand by County (2024 – 2035)

Description: This Chart examines how much current supply capacity a county has licensed and the difference between the capacity and the forecasted demand. A negative number in red indicates that there is less supply capacity than demand, but given that other counties can have excesses and can supply all counties, then there are limited opportunities (none) to add capacity at this level of legal participation

Jurisdiction	Current	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	2,610,639	1,998,223	1,942,549	1,886,874	1,831,200	1,775,526	1,775,526	1,719,852	1,719,852	1,719,852	1,719,852	1,719,852	1,719,852
Adams	82,268	80,906	80,782	80,658	80,534	80,410	80,410	80,286	80,286	80,286	80,286	80,286	80,286
Asotin	864	(922)	(1,084)	(1,246)	(1,409)	(1,571)	(1,571)	(1,733)	(1,733)	(1,733)	(1,733)	(1,733)	(1,733)
Benton	123,212	107,606	106,187	104,768	103,349	101,931	101,931	100,512	100,512	100,512	100,512	100,512	100,512
Chelan	4,947	(1,302)	(1,870)	(2,438)	(3,006)	(3,575)	(3,575)	(4,143)	(4,143)	(4,143)	(4,143)	(4,143)	(4,143)
Clallam	36,936	30,443	29,853	29,262	28,672	28,082	28,082	27,492	27,492	27,492	27,492	27,492	27,492
Clark	74,466	34,444	30,806	27,168	23,530	19,891	19,891	16,253	16,253	16,253	16,253	16,253	16,253
Columbia	518	193	164	134	105	75	75	45	45	45	45	45	45
Cowlitz	52,392	43,792	43,010	42,228	41,446	40,664	40,664	39,883	39,883	39,883	39,883	39,883	39,883
Douglas	59,237	55,964	55,666	55,369	55,071	54,773	54,773	54,476	54,476	54,476	54,476	54,476	54,476
Ferry	3,504	2,906	2,851	2,797	2,742	2,688	2,688	2,634	2,634	2,634	2,634	2,634	2,634
Franklin	0	(6,806)	(7,425)	(8,044)	(8,662)	(9,281)	(9,281)	(9,900)	(9,900)	(9,900)	(9,900)	(9,900)	(9,900)
Garfield	0	(179)	(195)	(212)	(228)	(244)	(244)	(260)	(260)	(260)	(260)	(260)	(260)
Grant	218,645	211,407	210,750	210,092	209,434	208,776	208,776	208,118	208,118	208,118	208,118	208,118	208,118
Grays Harbor	117,949	111,843	111,288	110,733	110,178	109,623	109,623	109,067	109,067	109,067	109,067	109,067	109,067
Island	19,824	12,633	11,979	11,325	10,671	10,018	10,018	9,364	9,364	9,364	9,364	9,364	9,364
Jefferson	11,850	8,899	8,631	8,363	8,095	7,827	7,827	7,558	7,558	7,558	7,558	7,558	7,558
King	104,242	(81,265)	(98,129)	(114,993)	(131,858)	(148,722)	(148,722)	(165,586)	(165,586)	(165,586)	(165,586)	(165,586)	(165,586)
Kitsap	33,722	11,410	9,382	7,354	5,326	3,297	3,297	1,269	1,269	1,269	1,269	1,269	1,269
Kittitas	20,336	16,680	16,348	16,016	15,683	15,351	15,351	15,019	15,019	15,019	15,019	15,019	15,019
Klickitat	22,952	21,095	20,926	20,758	20,589	20,420	20,420	20,251	20,251	20,251	20,251	20,251	20,251
Lewis	15,552	9,113	8,528	7,943	7,357	6,772	6,772	6,187	6,187	6,187	6,187	6,187	6,187
Lincoln	49,823	48,958	48,880	48,801	48,722	48,644	48,644	48,565	48,565	48,565	48,565	48,565	48,565
Mason	92,163	86,804	86,317	85,829	85,342	84,855	84,855	84,368	84,368	84,368	84,368	84,368	84,368
Okanogan	259,513	256,181	255,878	255,575	255,273	254,970	254,970	254,667	254,667	254,667	254,667	254,667	254,667
Pacific	41,477	39,503	39,323	39,144	38,965	38,785	38,785	38,606	38,606	38,606	38,606	38,606	38,606
Pend Oreille	6,388	5,273	5,171	5,070	4,968	4,867	4,867	4,766	4,766	4,766	4,766	4,766	4,766
Pierce	192,449	120,850	114,341	107,832	101,323	94,814	94,814	88,305	88,305	88,305	88,305	88,305	88,305
San Juan	3,877	2,301	2,157	2,014	1,871	1,728	1,728	1,584	1,584	1,584	1,584	1,584	1,584
Skagit	62,203	51,993	51,065	50,137	49,209	48,281	48,281	47,352	47,352	47,352	47,352	47,352	47,352
Skamania	6,367	5,389	5,300	5,211	5,123	5,034	5,034	4,945	4,945	4,945	4,945	4,945	4,945
Snohomish	220,527	154,979	149,021	143,062	137,103	131,144	131,144	125,185	125,185	125,185	125,185	125,185	125,185
Spokane	260,796	218,324	214,463	210,602	206,741	202,880	202,880	199,019	199,019	199,019	199,019	199,019	199,019
Stevens	64,774	61,091	60,756	60,422	60,087	59,752	59,752	59,417	59,417	59,417	59,417	59,417	59,417
Thurston	159,144	135,635	133,497	131,360	129,223	127,086	127,086	124,949	124,949	124,949	124,949	124,949	124,949
Wahkiakum	2,121	1,743	1,709	1,674	1,640	1,606	1,606	1,571	1,571	1,571	1,571	1,571	1,571
Walla Walla	8,080	3,251	2,812	2,373	1,934	1,494	1,494	1,055	1,055	1,055	1,055	1,055	1,055
Whatcom	105,528	87,056	85,377	83,698	82,018	80,339	80,339	78,660	78,660	78,660	78,660	78,660	78,660
Whitman	16,271	12,699	12,374	12,050	11,725	11,400	11,400	11,076	11,076	11,076	11,076	11,076	11,076
Yakima	55,723	37,332	35,660	33,988	32,316	30,644	30,644	28,972	28,972	28,972	28,972	28,972	28,972

Source: Whitney Economics, LCB

Chart: Supply Output Scenarios (based on utilization rates) vs. Forecasted Demand in 2024

Description: This chart examines the amount of supply in pounds that are forecasted to meet the 2024 legal demand in the state. It then examines how much capacity needs to be utilized in order to meet that demand.

	Current Supply Capacity Licensed	20% Utilization	30% Utilization	40% Utilization	50% Utilization	60% Utilization	70% Utilization	80% Utilization	90% Utilization
Supply Based on Utilization --->	2,610,639	522,128	783,192	1,044,256	1,305,319	1,566,383	1,827,447	2,088,511	2,349,575
2024 Supply Forecast based on Demand	612,416		2024 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2025 Supply Forecast based on Demand	668,090		2025 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2026 Supply Forecast based on Demand	723,765		2026 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2027 Supply Forecast based on Demand	779,439		2027 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2028 Supply Forecast based on Demand	835,113			2028 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2029 Supply Forecast based on Demand	835,113			2029 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2030 Supply Forecast based on Demand	890,787			2030 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2031 Supply Forecast based on Demand	890,787			2031 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2032 Supply Forecast based on Demand	890,787			2032 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2033 Supply Forecast based on Demand	890,787			2033 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2034 Supply Forecast based on Demand	890,787			2034 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized
2035 Supply Forecast based on Demand	890,787			2035 demand covered	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized	Excess Supply if Utilized

Source: Whitney Economics

Chart: Current Capacity by Grow Type

Description: This chart shows the total amount of capacity in square feet and in pounds of capacity for each grow type licensed in Washington

Grow Type	Canopy	Pounds of Capacity	Output /sq ft
Indoor	3,660,620.19	1,581,387.9	0.432
GH (est)	4,560,819.80	460,642.8	0.101
Outdoor	5,629,784.00	568,608.2	0.101
Total	**13,851,223.99**	**2,610,638.9**	

Source: Whitney Economics, LCB

Chart: Current Capacity by Grow Type

Description: This chart shows the total amount of capacity in pounds of capacity for each grow type licensed in Washington. It then models the amount of output total based on capacity utilization rates and then compares that output to the total demand potential (illicit + Legal) in the state. It shows that a capacity utilization of less than 50% will support all of the demand in the state, not just legal demand.

Grow Type	Full Capacity	20%	30%	40%	50%	60%	70%	80%	90%
Indoor	1,581,387.9	316,277.6	474,416.4	632,555.2	790,694.0	948,832.8	1,106,971.5	1,265,110.3	1,423,249.1
GH (est)	460,642.8	92,128.6	138,192.8	184,257.1	230,321.4	276,385.7	322,450.0	368,514.2	414,578.5
Outdoor	568,608.2	113,721.6	170,582.5	227,443.3	284,304.1	341,164.9	398,025.7	454,886.5	511,747.4
Total	2,610,638.9	522,127.8	783,191.7	1,044,255.6	1,305,319.5	1,566,383.3	1,827,447.2	2,088,511.1	2,349,575.0
	Excess to Demand								
	1,113,484	**(591,356.2)**	(330,292.3)	(69,228.4)	191,835.5	452,899.4	713,963.3	975,027.2	1,236,091.1

Source: Whitney Economics, LCB

Chart: Number of Processor Licenses by County and by Year Assuming 500 Pounds of Cultivated Supply

Description: This chart looks at how many processor licenses could be supported each year by county. It is important to note that some opportunities for licensure may not be available in counties with moratoriums in place.

Jurisdiction	Current Licenses Issued	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	1,039	1,225	1,336	1,448	1,559	1,670	1,670	1,782	1,782	1,782	1,782	1,782	1,782
Adams	22	3	3	3	3	4	4	4	4	4	4	4	4
Asotin	1	4	4	4	5	5	5	5	5	5	5	5	5
Benton	35	31	34	37	40	43	43	45	45	45	45	45	45
Chelan	6	12	14	15	16	17	17	18	18	18	18	18	18
Clallam	12	13	14	15	17	18	18	19	19	19	19	19	19
Clark	14	80	87	95	102	109	109	116	116	116	116	116	116
Columbia	1	1	1	1	1	1	1	1	1	1	1	1	1
Cowlitz	24	17	19	20	22	23	23	25	25	25	25	25	25
Douglas	23	7	7	8	8	9	9	10	10	10	10	10	10
Ferry	2	1	1	1	2	2	2	2	2	2	2	2	2
Franklin	0	14	15	16	17	19	19	20	20	20	20	20	20
Garfield	0	0	0	0	0	0	0	1	1	1	1	1	1
Grant	75	14	16	17	18	20	20	21	21	21	21	21	21
Grays Harbor	29	12	13	14	16	17	17	18	18	18	18	18	18
Island	12	14	16	17	18	20	20	21	21	21	21	21	21
Jefferson	12	6	6	7	8	8	8	9	9	9	9	9	9
King	82	371	405	438	472	506	506	540	540	540	540	540	540
Kitsap	20	45	49	53	57	61	61	65	65	65	65	65	65
Kittitas	7	7	8	9	9	10	10	11	11	11	11	11	11
Klickitat	9	4	4	4	5	5	5	5	5	5	5	5	5
Lewis	5	13	14	15	16	18	18	19	19	19	19	19	19
Lincoln	16	2	2	2	2	2	2	3	3	3	3	3	3
Mason	35	11	12	13	14	15	15	16	16	16	16	16	16
Okanogan	93	7	7	8	8	9	9	10	10	10	10	10	10
Pacific	17	4	4	5	5	5	5	6	6	6	6	6	6
Pend Oreille	3	2	2	3	3	3	3	3	3	3	3	3	3
Pierce	77	143	156	169	182	195	195	208	208	208	208	208	208
San Juan	3	3	3	4	4	4	4	5	5	5	5	5	5
Skagit	25	20	22	24	26	28	28	30	30	30	30	30	30
Skamania	3	2	2	2	2	3	3	3	3	3	3	3	3
Snohomish	96	131	143	155	167	179	179	191	191	191	191	191	191
Spokane	102	85	93	100	108	116	116	124	124	124	124	124	124
Stevens	27	7	8	9	9	10	10	11	11	11	11	11	11
Thurston	61	47	51	56	60	64	64	68	68	68	68	68	68
Wahkiakum	1	1	1	1	1	1	1	1	1	1	1	1	1
Walla Walla	4	10	11	11	12	13	13	14	14	14	14	14	14
Whatcom	62	37	40	44	47	50	50	54	54	54	54	54	54
Whitman	7	7	8	8	9	10	10	10	10	10	10	10	10
Yakima	16	37	40	43	47	50	50	54	54	54	54	54	54
		1,225	1,336	1,448	1,559	1,670	1,670	1,782	1,782	1,782	1,782	1,782	1,782

Source: LCB (Licenses) Whitney Economics (Forecast)

Chart: Number of Processor Licenses by County and by Year Assuming 250 Pounds of Cultivated Supply

Description: This chart looks at how many processor licenses could be supported each year by county. It is important to note that some opportunities for licensure may not be available in counties with moratoriums in place.

Jurisdiction	Current Licenses Issued	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Washington	1,039	2,450	2,672	2,895	3,118	3,340	3,340	3,563	3,563	3,563	3,563	3,563	3,563
Adams	22	5	6	6	7	7	7	8	8	8	8	8	8
Asotin	1	7	8	8	9	10	10	10	10	10	10	10	10
Benton	35	62	68	74	79	85	85	91	91	91	91	91	91
Chelan	6	25	27	30	32	34	34	36	36	36	36	36	36
Clallam	12	26	28	31	33	35	35	38	38	38	38	38	38
Clark	14	160	175	189	204	218	218	233	233	233	233	233	233
Columbia	1	1	1	2	2	2	2	2	2	2	2	2	2
Cowlitz	24	34	38	41	44	47	47	50	50	50	50	50	50
Douglas	23	13	14	15	17	18	18	19	19	19	19	19	19
Ferry	2	2	3	3	3	3	3	3	3	3	3	3	3
Franklin	0	27	30	32	35	37	37	40	40	40	40	40	40
Garfield	0	1	1	1	1	1	1	1	1	1	1	1	1
Grant	75	29	32	34	37	39	39	42	42	42	42	42	42
Grays Harbor	29	24	27	29	31	33	33	36	36	36	36	36	36
Island	12	29	31	34	37	39	39	42	42	42	42	42	42
Jefferson	12	12	13	14	15	16	16	17	17	17	17	17	17
King	82	742	809	877	944	1,012	1,012	1,079	1,079	1,079	1,079	1,079	1,079
Kitsap	20	89	97	105	114	122	122	130	130	130	130	130	130
Kittitas	7	15	16	17	19	20	20	21	21	21	21	21	21
Klickitat	9	7	8	9	9	10	10	11	11	11	11	11	11
Lewis	5	26	28	30	33	35	35	37	37	37	37	37	37
Lincoln	16	3	4	4	4	5	5	5	5	5	5	5	5
Mason	35	21	23	25	27	29	29	31	31	31	31	31	31
Okanogan	93	13	15	16	17	18	18	19	19	19	19	19	19
Pacific	17	8	9	9	10	11	11	11	11	11	11	11	11
Pend Oreille	3	4	5	5	6	6	6	6	6	6	6	6	6
Pierce	77	286	312	338	365	391	391	417	417	417	417	417	417
San Juan	3	6	7	7	8	9	9	9	9	9	9	9	9
Skagit	25	41	45	48	52	56	56	59	59	59	59	59	59
Skamania	3	4	4	5	5	5	5	6	6	6	6	6	6
Snohomish	96	262	286	310	334	358	358	381	381	381	381	381	381
Spokane	102	170	185	201	216	232	232	247	247	247	247	247	247
Stevens	27	15	16	17	19	20	20	21	21	21	21	21	21
Thurston	61	94	103	111	120	128	128	137	137	137	137	137	137
Wahkiakum	1	2	2	2	2	2	2	2	2	2	2	2	2
Walla Walla	4	19	21	23	25	26	26	28	28	28	28	28	28
Whatcom	62	74	81	87	94	101	101	107	107	107	107	107	107
Whitman	7	14	16	17	18	19	19	21	21	21	21	21	21
Yakima	16	74	80	87	94	100	100	107	107	107	107	107	107
		2,450	2,672	2,895	3,118	3,340	3,340	3,563	3,563	3,563	3,563	3,563	3,563

Source: LCB (Licenses) Whitney Economics (Forecast)

Chart: Current Number of Processor Licenses vs. Forecasted Demand for Licensess 2024 – 2035 (500 lbs/license)

Description: This chart examines the opportunities for additional licenses based on the forecasted demand for licenses from 2024 – 2035. A red number in parenthesis indicated an opportunity to issue more licenses

Washington	Current Licensed Processors	Gap to Current Licenses
Assumes 500lb/license	**1039**	*Negative means more viable licenses needed*
2024 Processing Forecasted Opportunity	1225	(186)
2025 Processing Forecasted Opportunity	1336	(297)
2026 Processing Forecasted Opportunity	1448	(409)
2027 Processing Forecasted Opportunity	1559	(520)
2028 Processing Forecasted Opportunity	1670	(631)
2029 Processing Forecasted Opportunity	1670	(631)
2030 Processing Forecasted Opportunity	1782	(743)
2031 Processing Forecasted Opportunity	1782	(743)
2032 Processing Forecasted Opportunity	1782	(743)
2033 Processing Forecasted Opportunity	1782	(743)
2034 Processing Forecasted Opportunity	1782	(743)
2035 Processing Forecasted Opportunity	1782	(743)
Potential - Upper Bound (MAX)	2227	(1,188)

Source: Whitney Economics

Chart: Current Number of Processor Licenses vs. Forecasted Demand for Licenses 2024 – 2035 (250 lbs/license)

Description: This chart examines the opportunities for additional licenses based on the forecasted demand for licenses from 2024 – 2035. A red number in parenthesis indicated an opportunity to issue more licenses.

Washington	Current Licensed Processors	Gap to Current Licenses
Assumes 250lb/license	**1039**	*Negative means more viable licenses needed*
2024 Processing Forecasted Opportunity	2450	(1,411)
2025 Processing Forecasted Opportunity	2672	(1,633)
2026 Processing Forecasted Opportunity	2895	(1,856)
2027 Processing Forecasted Opportunity	3118	(2,079)
2028 Processing Forecasted Opportunity	3340	(2,301)
2029 Processing Forecasted Opportunity	3340	(2,301)
2030 Processing Forecasted Opportunity	3563	(2,524)
2031 Processing Forecasted Opportunity	3563	(2,524)
2032 Processing Forecasted Opportunity	3563	(2,524)
2033 Processing Forecasted Opportunity	3563	(2,524)
2034 Processing Forecasted Opportunity	3563	(2,524)
2035 Processing Forecasted Opportunity	3563	(2,524)
Potential - Upper Bound (MAX)	4454	(3,415)

Source: Whitney Economics

Chart: Supply by County and Grow Type

Description: This chart examines the number of licenses, the square feet of canopy and the total estimated output from this canopy. The chart assumes that the capacity is fully utilized. This data can be used to determine if the amount of capacity is greater than or less than the total demand.

County	Type	Number of Licenses	Total Canopy	Pounds of Canopy Capacity
ADAMS	Both	14	308,000	31,108
	Indoor	1	10,000	4,320
	outdoor	21	463,760	46,840
ADAMS Total		36	781,760	82,268
ASOTIN	Indoor	1	2,000	864
ASOTIN Total		1	2,000	864
BENTON	Both	14	267,336	27,001
	Indoor	5	107,800	46,570
	outdoor	22	491,500	49,642
BENTON Total		41	866,636	123,212
CHELAN	Both	1	10,000	1,010
	Indoor	1	2,100	907
	outdoor	1	30,000	3,030
CHELAN Total		3	42,100	4,947
CLALLAM	Both	6	86,500	8,737
	Indoor	5	52,300	22,594
	outdoor	3	55,500	5,606
CLALLAM Total		14	194,300	36,936
CLARK	Indoor	13	171,762	74,201
	outdoor	1	2,618	264
CLARK Total		14	174,380	74,466
COLUMBIA	Indoor	1	1,200	518
COLUMBIA Total		1	1,200	518
COWLITZ	Both	2	11,999	1,212
	Indoor	17	118,472	51,180
	None	1	0	0
COWLITZ Total		20	130,471	52,392
DOUGLAS	Both	7	118,000	11,918
	Indoor	7	65,113	28,129
	outdoor	7	190,000	19,190
DOUGLAS Total		21	373,113	59,237
FERRY	Both	1	10,000	1,010
	Indoor	1	5,774	2,494
FERRY Total		2	15,774	3,504
GRANT	Both	28	606,500	61,257
	Indoor	10	96,160	41,541
	outdoor	50	1,147,000	115,847
GRANT Total		88	1,849,660	218,645
GRAYS HARBOR	Both	12	194,013	19,595
	Indoor	13	201,954	87,244
	outdoor	5	110,001	11,110
GRAYS HARBOR Total		30	505,968	117,949
ISLAND	Indoor	9	45,304	19,571
	outdoor	1	2,500	253
ISLAND Total		10	47,804	19,824
JEFFERSON	Both	5	66,000	6,666
	Indoor	3	12,000	5,184

County	Type	Number of Licenses	Total Canopy	Pounds of Canopy Capacity
JEFFERSON Total		8	78,000	11,850
KING	Both	1	3,510	355
	Indoor	41	232,998	100,655
	outdoor	2	32,001	3,232
KING Total		44	268,509	104,242
KITSAP	Both	2	25,503	2,576
	Indoor	8	56,900	24,581
	outdoor	3	65,000	6,565
KITSAP Total		13	147,403	33,722
KITTITAS	Both	2	51,000	5,151
	Indoor	1	9,200	3,974
	outdoor	4	111,000	11,211
KITTITAS Total		7	171,200	20,336
KLICKITAT	Both	3	39,605	4,000
	Indoor	1	10,000	4,320
	outdoor	7	144,875	14,632
KLICKITAT Total		11	194,480	22,952
LEWIS	Indoor	4	36,000	15,552
LEWIS Total		4	36,000	15,552
LINCOLN	Both	6	134,000	13,534
	Indoor	2	37,000	15,984
	outdoor	8	201,040	20,305
LINCOLN Total		16	372,040	49,823
MASON	Both	15	244,500	24,695
	Indoor	12	130,460	56,359
	outdoor	5	110,000	11,110
MASON Total		32	484,960	92,163
OKANOGAN	Both	38	818,350	82,653
	Indoor	4	42,100	18,187
	outdoor	70	1,571,012	158,672
OKANOGAN Total		112	2,431,462	259,513
PACIFIC	Both	2	15,600	1,576
	Indoor	9	85,350	36,871
	outdoor	1	30,000	3,030
PACIFIC Total		12	130,950	41,477
PEND OREILLE	Both	2	15,000	1,515
	Indoor	2	11,280	4,873
PEND OREILLE Total		4	26,280	6,388
PIERCE	Both	4	63,200	6,383
	Indoor	53	426,779	184,369
	None	1	0	0
	outdoor	3	16,800	1,697
PIERCE Total		61	506,779	192,449
SAN JUAN	Both	2	17,000	1,717
	Indoor	1	5,000	2,160
SAN JUAN Total		3	22,000	3,877
SKAGIT	Both	2	31,200	3,151
	Indoor	22	136,695	59,052
SKAGIT Total		24	167,895	62,203
SKAMANIA	Both	1	10,000	1,010
	Indoor	2	12,400	5,357
SKAMANIA Total		3	22,400	6,367

County	Type	Number of Licenses	Total Canopy	Pounds of Canopy Capacity
SNOHOMISH	Both	11	203,000	20,503
	Indoor	60	439,826	190,005
	None	1	0	0
	outdoor	10	99,200	10,019
SNOHOMISH Total		82	742,026	220,527
SPOKANE	Both	23	336,280	33,964
	Indoor	59	461,109	199,199
	None	1	0	0
	outdoor	17	273,587	27,632
SPOKANE Total		100	1,070,976	260,796
STEVENS	Both	15	265,000	26,765
	Indoor	7	62,501	27,000
	outdoor	8	109,000	11,009
STEVENS Total		30	436,501	64,774
THURSTON	Both	13	198,533	20,052
	Indoor	42	314,397	135,820
	outdoor	2	32,400	3,272
THURSTON Total		57	545,330	159,144
WAHKIAKUM	Both	1	21,000	2,121
WAHKIAKUM Total		1	21,000	2,121
WALLA WALLA	Both	4	80,000	8,080
WALLA WALLA Total		4	80,000	8,080
WHATCOM	Both	14	180,810	18,262
	Indoor	32	176,287	76,156
	outdoor	5	110,000	11,110
WHATCOM Total		51	467,097	105,528
WHITMAN	Both	5	70,840	7,155
	Indoor	2	19,000	8,208
	outdoor	2	8,990	908
WHITMAN Total		9	98,830	16,271
YAKIMA	Both	5	58,541	5,913
	Indoor	4	63,400	27,389
	outdoor	8	222,000	22,422
YAKIMA Total		17	343,941	55,723
Grand Total		986	13,851,224	2,610,639

Source: LCB, Whitney Economics

WATERLOO CHARTS

Washington

University of Waterloo – Washington 2021 Cannabis Report (May 2022)

https://lcb.wa.gov/sites/default/files/publications/temp_links/2021-Washington-State-ICPS-Cannabis-Report.pdf

Citation: HAMMOND D, CORSETTI D, GOODMAN S, IRANIPARAST M, DANH HONG D, BURKHALTER R. INTERNATIONAL CANNABIS POLICY STUDY - WASHINGTON 2021 SUMMARY. MAY 2022

University of Waterloo – Washington 2022 Cannabis Report (May 2023)

Citation: HAMMOND D, CORSETTI D, FATAAR F, IRANIPARAST M, DANH HONG D, BURKHALTER R. INTERNATIONAL CANNABIS POLICY STUDY - WASHINGTON 2022 SUMMARY. MAY 2023.

Page: 61

Age in categories

AGE_GROUPS_DV	Frequency	%	95% CI	
16-25 years	562	17.9	16.2	19.7
26-35 years	750	24.0	22.2	25.7
36-45 years	659	21.1	19.6	22.5
46-55 years	572	18.3	16.7	19.8
56-65 years	588	18.8	17.3	20.2
Total	**3131**	**100.0**		

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MONEY_SELL: Of all the marijuana you purchased in the past 12 months, how much did you sell to others?

MONEY_SELL	Frequency	%	95% CI	
0%	1	5.2	0.0	16.0
10% 6 26.5 5.3 47.7	6	26.5	5.3	47.7
20% 4 17.6 0.8 34.3	4	17.6	0.8	34.3
30% 2 9.9 0.0 25.4	2	9.9	0.0	25.4
40% 1 2.9 0.0 9.2	1	2.9	0.0	9.2
50% 6 24.1 0.0 49.7	6	24.1	0.0	49.7
70% 3 13.8 0.0 35.9	3	13.8	0.0	35.9
Total	**24**	**100.0**		

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CANNABIS_SOURCE1r3_DV:Dealer - recoded - In the past 12 months, have you gotten any type of marijuana from the following sources?

CANNABIS_SOURCE1r3_DV	Frequency	%	95% CI	
No	1175	87.2	85.1	89.4
Yes	172	12.8	10.6	14.9
Total	**1348**	**100.0**		

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CANNABIS_SOURCE1r5_DV:Store, co-operative or dispensary - In the past 12 months, have you gottenany type of marijuana from the following sources?

CANNABIS_SOURCE1r5_DV	Frequency	%	95% CI	
No	307	22.8	20.1	25.4
Yes	1041	77.2	74.6	79.9
Total	**1348**	**100.0**		

Page: 60 (previous report)

Cannabis_Source1v5_DV: Store, co-operative or dispensary - In the past 12 months, have you gotten any type of marijuana from the following sources?

CANNABIS_SOURCE1r5_DV	Frequency	%	95% CI	
No	170	23.1	19.6	26.6
Yes	565	76.9	73.4	80.4
Total	**735**	**100.0**		

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_____ % - Overall, how much of the marijuana that you used in the past 12 months was purchased from LEGAL/AUTHORIZED sources?

VarName	Mean	SD	95% CI		N
CANNABIS_SOURCE_LEGALr1	90.84	21.60	89.37	92.31	1146

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Legal stores were too far away/there are none where I live - What were the main reasons you bought from illegal/unauthorized sources instead of legal/authorized sources?

CANNABIS_ILLEGALr6_RECODED_DV	Frequency	%	95% CI	
No	451	93.4	90.9	95.8
Yes	32	6.6	4.2	9.1
Total	**483**	**100.0**		

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Legal sources were less convenient - What were the main reasons you bought from illegal/unauthorized sources instead of legal/authorized sources?

CANNABIS_ILLEGALr7_RECODED_DV	Frequency	%	95% CI	
No	420	87.1	83.4	90.7
Yes	62	12.9	9.3	16.6
Total	**483**	**100.0**		

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Legal sources were less convenient - What were the main reasons you bought from illegal/unauthorized sources instead of legal/authorized sources?

CANNABIS_ILLEGALr7_RECODED_DV	Frequency	%	95% CI	
No	420	87.1	83.4	90.7
Yes	62	12.9	9.3	16.6
Total	**483**	**100.0**		

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RETAIL_ACCESS: How long would it take you to get to the nearest store that sells marijuana using your usual mode of transportation?

RETAIL_ACCESS	Frequency	%	95% CI	
Less than 5 minutes	738	23.6	21.9	25.2
5 minutes	509	16.3	14.8	17.7
10 minutes	735	23.5	21.8	25.2
15 minutes	399	12.7	11.4	14.1
20 minutes	193	6.2	5.2	7.1
25 minutes	82	2.6	1.9	3.3
30 minutes	107	3.4	2.7	4.1
35 minutes	34	1.1	0.7	1.5
40 minutes	27	0.9	0.5	1.2
45 minutes	19	0.6	0.3	0.9
50 minutes	10	0.3	0.1	0.6
55 minutes	2	0.1	0.0	0.1
1 hour	16	0.5	0.2	0.8
more than 1 hour	22	0.7	0.3	1.1
I don't know of any stores that sell marijuana near where I live	203	6.5	5.4	7.5
Refuse to answer	36	1.1	0.6	1.6
Total	**3131**	**100.0**		

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STORE_COMFORT: How comfortable or uncomfortable did you feel visiting legal marijuana store(s) inthe city or town where you live?

STORE_COMFORT	Frequency	%	95% CI	
Very uncomfortable	372	13.2	11.8	14.6
Uncomfortable	346	12.3	10.9	13.6
Neither comfortable nor uncomfortable	629	22.3	20.5	24.0
Comfortable	628	22.3	20.5	24.0
Very comfortable	794	28.1	26.2	30.0
Don't know	53	1.9	1.3	2.5
Refuse to answer	1	0.0	0.0	0.1
Total	**2823**	**100.0**		

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OPIOID_SUB: Have you ever used marijuana for pain relief, instead of using opioids or prescription pain medication?

OPIOID_SUB	Frequency	%	95% CI	
Yes	857	82.8	80.2	85.4
No	158	15.2	12.8	17.7
Don't know	20	1.9	0.9	3.0
Refuse to answer	1	0.1	0.0	0.2
Total	**1036**	**100.0**		

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POLICY_STORE: Do you feel the number of marijuana stores in your community is...

POLICY_STORE	Frequency	%	95% CI	
Too low	248	7.9	6.8	9.0
About right	1536	49.1	47.1	51.1
Too high	783	25.0	23.3	26.7
Don't know	520	16.6	15.1	18.1
Refuse to answer	45	1.4	0.9	2.0
Total	**3131**	**100.0**		

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SES: What was your total household income (before taxes) over the past 12 months?

SES	Frequency	%	95% CI	
Less than $20,000	420	13.4	12.1	14.8
$20,000 to less than $30,000	232	7.4	6.4	8.5
$30,000 to less than $40,000	227	7.2	227	8.3
$40,000 to less than $50,000	196	6.3	5.3	7.2
$50,000 to less than $60,000	247	7.9	6.8	8.9
$60,000 to less than $70,000	200	6.4	5.4	7.4
$70,000 to less than $80,000t	192	6.1	5.2	7.16
$80,000 to less than $90,000	138	4.4	3.6	5.2
$90,000 to less than $100,000	202	6.5	5.5	7.4
More than $100,000	791	25.3	23.5	27.0
Don't know	152	4.8	3.9	5.8
Refuse to answer	134	4.3	3.5	5.1
Total	**3131**	**100.0**		

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Cannabis use status

CANNABIS_USE_STATUS_DV	Frequency	%	95% CI	
Never user	867	27.7	25.8	29.5
Used more than 12 months ago	916	29.3	27.5	31.0
Past 12-month user	350	11.2	10.0	12.4
Monthly user	247	7.9	6.8	8.9
Weekly user	225	7.2	6.1	8.2
Daily/almost daily user	526	16.8	15.3	18.4
Total	**3131**	**100.0**		

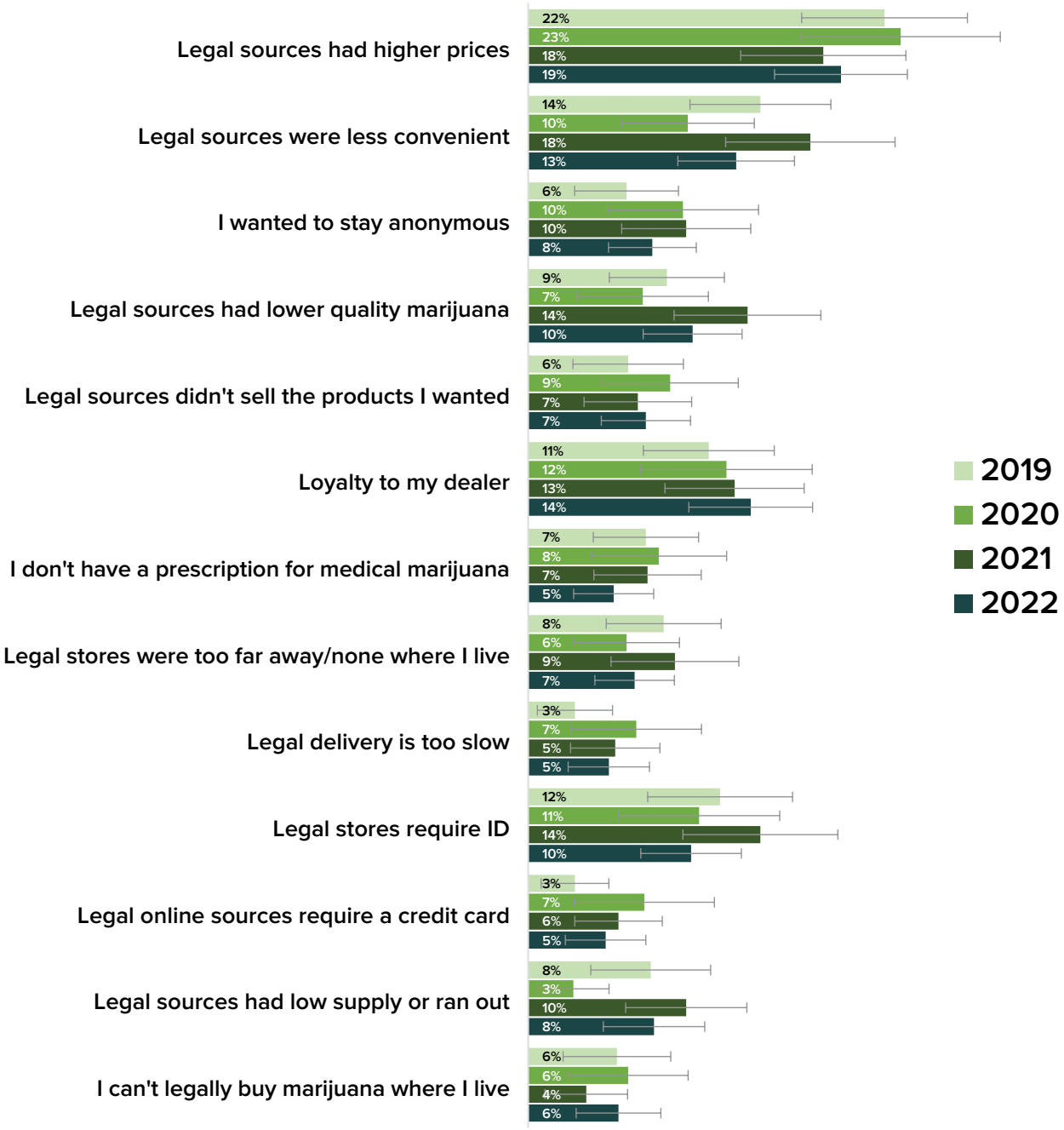
Page: 282 (2022 report)

Cannabis use status

CANNABIS_USE_STATUS_DV	Frequency	%	95% CI	
Never user	562	31.2	28.8	33.6
Used more than 12 months ago	502	27.9	25.6	30.2
Past 12-month user	167	9.3	7.9	10.7
Monthly user	138	7.7	6.2	9.1
Weekly user	120	6.7	5.4	8.0
Daily/almost daily user	310	17.3	15.2	19.3
Total	**1799**	**100.0**		

Reasons for Purchasing From Retail 'Illegal' Sources - Washington 2022

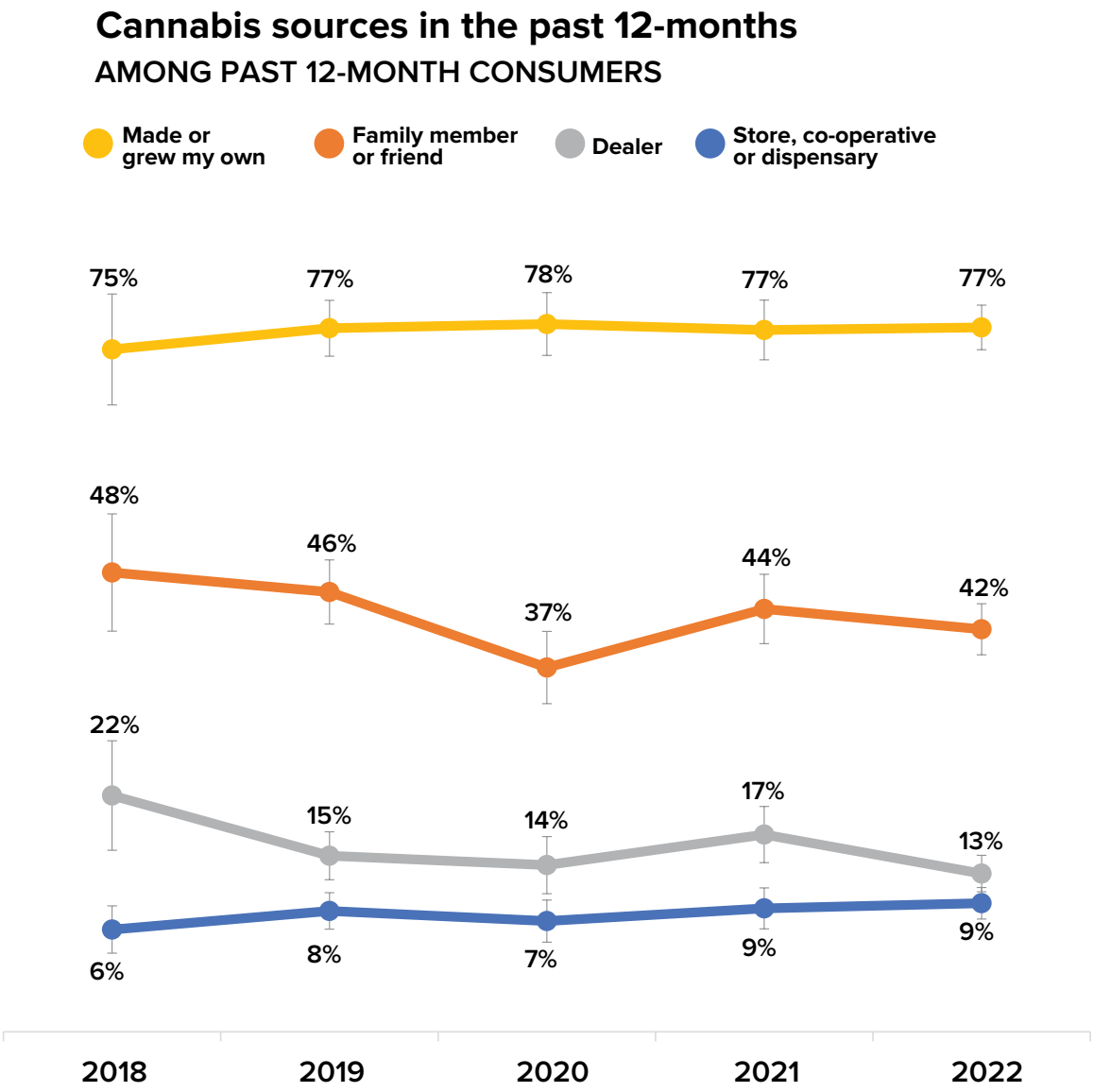
Consumers who purchased cannabis from an illegal retail source reported a range of reasons for doing so. Higher price, lower convenience and lower anonymity of legal sources were the most common reasons for purchasing cannabis from illegal sources in 2022.



AMONG RESPONDENTS WHO REPORTED OBTAINING ANY CANNABIS FROM ILLEGAL OR UNAUTHORIZED SOURCES (N=1,340). RESPONDENTS COULD SELECT ALL THAT APPLIED

Cannabis Sources - Washington 2022

Stores were the most common source of cannabis amongpast 12-month consumers across all years. In 2022, over three quarters of consumers got their cannabis from ‘stores’.



AMONG PAST 12-MONTH CANNABIS CONSUMERS. RESPONDENTS COULD SELECT ALL THAT APPLIED.

APPENDIX 6:
Sources and Acknowledgments

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https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/economic-trends/washington-and-us-average-wages

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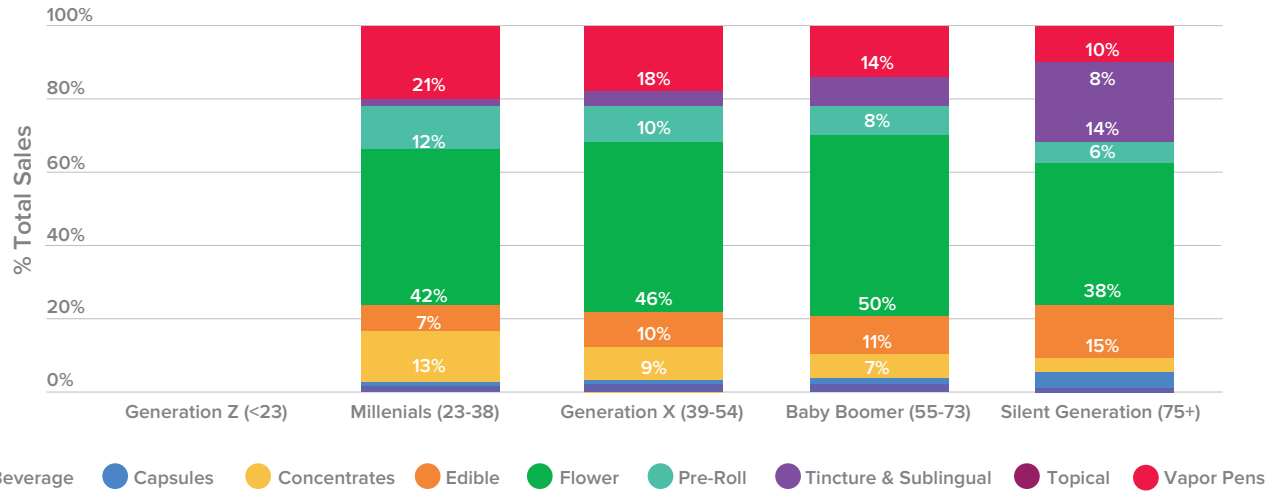
BEAU WHITNEY | Whitney Economics
503-724-3084 | beau@whitneyeconomics.com | whitneyeconomics.com

5 Total Sales Across Product Categories Per Generation



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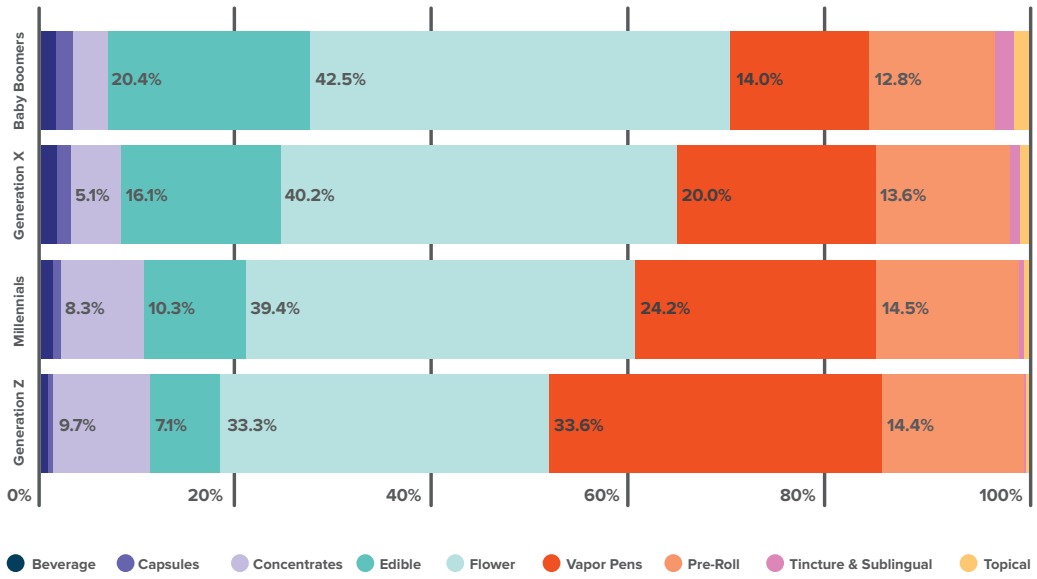
Source: Headset.IO

CATAGORY WALLET SHARE BY AGE GROUP (US)



Source: Headset.IO

APPENDIX 7:
Section Footnotes

Executive Summery

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2. Whitney Economics

3. Whitney Economics

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APPENDIX 1: FAQ – Frequently Asks Questions

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