

Whitney Economics Report

Brief Overview and Key Takeaways

Overview

LCB contracted with Whitney Economics to forecast the number of producer, processor, and retail cannabis licenses that *may* be economically viable in Washington through the year 2032.





Our Mission is to use sound analytic principles and valid data to provide insights and recommendations to increase the value, effectiveness and influence of our clients in the global marketplace.

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

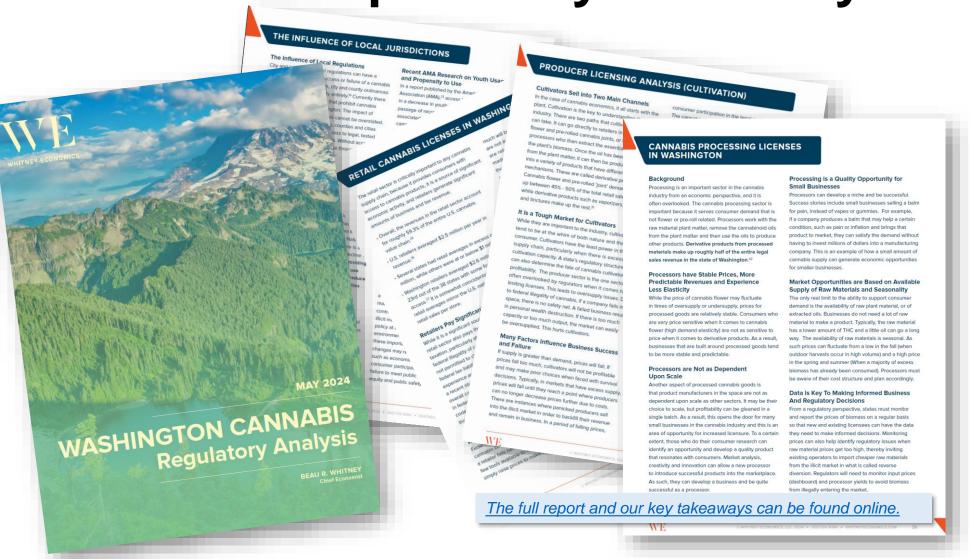
Whitney Economics does not take a position on this issue of cannabis legalization, however there are potential conflicts while presenting economic and market analysis.

- 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.

Retail

Producers

Processors



Retail

Producers

Processors

Limitations

This was an independent report from Whitney Economics.

Findings do not represent an official position of LCB.

Retail

Producers

Processors

Limitations

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

Retail

Producers

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Legal Market Participation=

Legal Sales / Total Addressable Market (TAM)

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Threshold of Economic Viability

- Labor
- Product Acquisition Costs
- Taxes
- Health Care
- Rental Rates
- Etc.

= \$2.5 million

Retail

Producers

Processors

Limitations

"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 Report, page 13

Retail

Producers

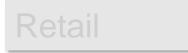
Processors

Limitations

Overall, retail opportunities are available but limited in scope Whitney Economics estimated that 634 retail licenses *may be* economically viable in 2032.

County estimates are provided online.

	Current	Recommended Estimate	High Estimate*
	(May 2024)	2032	2032
Washington	473	634	1095
Adams	2	2	3
Asotin	3	2	3
Benton	4	19	28
Chelan	8	7	12
Clallam	10	8	11
Clark	17	44	72
Columbia	1	0	1
Cowlitz	13	11	17
Douglas	3	4	7
Ferry	1	1	1
Franklin	3	9	13
Garfield	0	0	0
Grant	10	10	15
Grays Harbor	10	8	11
Island	7	8	13
Jefferson	6	3	4
King	104	134	313
Kitsap	20	24	43
Kittitas	6	5	7
Klickitat	2	2	4
Lewis	4	8	13
Lincoln	3	1	2
Mason	9	7	11
Okanogan	9	4	7



Producers

Processors

Limitations

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

- 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

Retail

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licensed 2. This can be done by multiple	Grow Type	Tier 1 Ou Capacity Pounds	•	Tier 2 Out Capacity Pounds		Tier 3 Ou Capacity Pounds	
in a given area (State or cou		Min	Max	Min	Max	Min	Max
output per square foot of ea	Indoor	0	1,728	1,728	4,320	4,320	12,960
Greenhouse, Outdoor). This							
3. Compare the amount of tota	Greenhouse	0	868	868	2,170	2,170	6,510
to support the demand to the	Outdoor	0	404	404	1,010	1,010	3,030
output capacity already licer.							

4. The difference is the amount of pounds of additional capacity available to be licensed

Retail

Producers

Processors

Limitations

Overall, producers have the capacity to supply more cannabis than demand. By 2032, there will be an estimated demand of 891

thousand pounds.

	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 I Utilized				
2025 Supply Forecast based on Demand	668,090		2025 demand covered	Excess Supply If Utilized	Exces Supply Utilize				
2026 Supply Forecast based on Demand	723,765		2026 demand covered	Excess Supply If Utilized	Exces Supply Utilize				
2027 Supply Forecast based on Demand	779,439		2027 demand covered	Excess Supply If Utilized	Exces Supply Utilize				
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	Exces Supply Utilize
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	Exces Supply Utilize
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	Exces Supply Utilize
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	Exces Supply Utilize
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	Exces Supply Utilize
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thousand pounds.

County estimates are provided online.

Note: LCB does not consider county level estimates to be reliable since producers are not public-facing and products are easily transported.

	Current Supply Capacity Licensed	20% 30% 4 Utilization Utilization Utilization	0% 50% 60% cation Utilization	70% 80% 90% Utilization Utilization Utilization
oly Ba	Table 2.2 P	roducer Licens	se Analysis	
Sur cast ema Sur cast		Current Licenses (May 2024)	Current Supply Capacity in Pounds (May 2024)	Estimated Demand in Pounds 2032
ema	Washington	986	2,610,639	890,787
Sur	Adams	36	82,268	1,981
ema	Asotin	1	864	2,597
Sup	Benton	41	123,212	22,700
cast emai	Chelan	3	4,947	9,090
Sur	Clallam	14	36,936	9,444
cast	Clark	14	74,466	58,213
	Columbia	1	518	473
Sur cast	Cowlitz	20	52,392	12,509
emai	Douglas	21	59,237	4,761
Sur cast	Ferry	2	3,504	871
ema	Franklin	0	0	9,900
Sup	Garfield	0	0	260
ast ema	Grant	88	218,645	10,527
Sur	Grays Harbor	30	117,949	8,882
ema .	Island	10	19,824	10,460
Sur	Jefferson	8	11,850	4,292
ast	King	44	104,242	269,828
emai	Kitsap	13	33,722	32,453
Sur	Kittitas	7	20,336	5,318
ma ni Sur	Klickitat	11	22,952	2,701
	Lewis	4	15,552	9,365
cast -	Lincoln	16	40.823	1 258

Retail

Producers

Processors

Limitations

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

- Determine the output capacity in the state and counties in pounds
- Divide the number of pounds either by 250 or 500 (Upper and lower bounds). This will determine maximum potential licenses
- 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

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"The only real limit to support consumer demand is the availability of raw plant material."

"Businesses do not need a lot of raw material to make a product."

Whitney Report, page 26

Retail

Producers

Processors

Limitations

Processor licenses are considered to be the largest opportunity in the cannabis market. Whitney Economics estimates there will be demand for between 1,782 and 3,340 processor licenses to be viable in 2032.

County estimates are provided online.

Note: LCB does not consider county level estimates to be reliable since processors are not public-facing and products are easily transported.

	Current (May 2024)	Lower Estimate 2032	Higher Estimate 2032
Washington	1,039	1,782	3,563
Adams	22	4	8
Asotin	1	5	10
Benton	35	45	91
Chelan	6	18	36
Clallam	12	19	38
Clark	14	116	233
Columbia	1	1	2
Cowlitz	24	25	50
Douglas	23	10	19
Ferry	2	2	3
Franklin	0	20	40
Garfield	0	1	1
Grant	75	21	42
Grays Harbor	29	18	36
Island	12	21	42
Jefferson	12	9	17
King	82	540	1,079
Kitsap	20	65	130
Kittitas	7	11	21
Klickitat	9	5	11
Lewis	5	19	37
Lincoln	16	3	5
Mason	35	16	31
Okanogan	93	10	19
Pacific	17	6	11
Pend Oreille	3	3	6
Pierce	77	208	417
San Juan	3	5	9
Skagit	25	30	59
Skamania	3	3	6

Retail

Producers

Processors



Producers

Processors

Limitations

1. These are estimates only

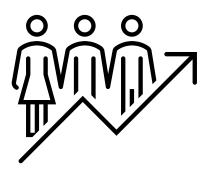




Producers

Processors

- 1. These are estimates only
- 2. There is extensive variability across licenses and counties



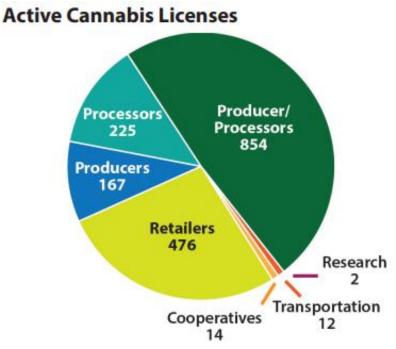




Producers

Processors

- 1. These are estimates only
- 2. There is extensive variability across licenses and counties
- 3. Processors and producers were examined separately



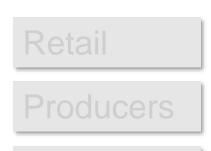


Producers

Processors

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- 3. Processors and producers were examined separately
- 4. Data sources vary





Processors

- 1. These are estimates only
- 2. There is extensive variability across licenses and counties
- 3. Processors and producers were examined separately
- 4. Data sources vary
- 5. This is an economic analysis

Summary

This independent economic analysis provided a snapshot into the cannabis market:

- There is some economic opportunity for retail licenses;
- There is limited economic opportunity for producer licenses; and
- There is great economic opportunity for processor licenses

This is one tool to further provide informed decision making

The full report and our key takeaways can be found online.