

Update to Economic Impact Analysis (Feb 2018)

May 7, 2018

Evaluation of Consultant’s Presentation to Lake County Board of Supervisors (April 24)

An HdL Cannabis Policy Advisor presented a series of slides on April 24 to the Board of Supervisors. The general thesis rested on HdL’s speculation that the cannabis raw material supply has exceeded a market saturation point with the current number of cultivation licenses issued by the state.

The corollary to that assumption is that the volume of oversupply will cause a failure rate of 60-70% of existing cultivators. That is based on an oversupply theory of 3.25x demand as speculated by HdL.

The speculative conclusion is that Lake County will collect an estimated \$164,000 in taxes, which according to HdL is insufficient economic incentive to invest staff resources to issue new licenses. HdL’s tax projection is based on the 23 temporary licenses issued by CalCannabis as of April 20, 2018 and does not reflect the actual number of applicants in the CalCannabis queue or

those who have acquired land with plans to cultivate and who have not yet applied.

CalCannabis Database 05052018

<i>License Count by Type</i>	Active	Grand Total	Square Feet	Measure C Rate
Specialty Outdoor	2	2	10,000	\$ 10,000
Lower Lake - Lake County	1	1		
Middletown - Lake County	1	1		
Specialty Mixed-Light Tier 1	2	2	5,000	\$ 10,000
Kelseyville - Lake County	1	1		
Upper Lake - Lake County	1	1		
Small Outdoor	4	4	40,000	\$ 40,000
Kelseyville - Lake County	1	1		
Lake County	1	1		
Upper Lake - Lake County	1	1		
Witter Springs - Lake County	1	1		
Small Mixed-Light Tier 2	2	2	20,000	\$ 40,000
Lower Lake - Lake County	2	2		
Small Mixed-Light Tier 1	1	1	5,000	\$ 10,000
Kelseyville - Lake County	1	1		
Medium Outdoor	9	9	392,850	\$ 392,850
Kelseyville - Lake County	1	1		
Lower Lake - Lake County	4	4		
Middletown - Lake County	2	2		
Unincorporated - Lake County	2	2		
Medium Mixed-Light Tier 2	1	1	22,000	\$ 44,000
Unincorporated - Lake County	1	1		
Medium Mixed-Light Tier 1	1	1	10,000	\$ 20,000
Kelseyville - Lake County	1	1		
Grand Total	22	22	504,850	\$ 566,850

The misguided speculation of consumer demand and cannabis supply is immaterial in the calculation and collection of taxes for cultivation for 2018. Measure C taxes will be assessed upon planting. Lake County policy of not activating the currently issued state licenses is delaying, and possibly forfeiting, the realization of the tax revenue. The table below shows the temporary licenses reported as of May 5, 2018 by the CalCannabis database from the CDFA.

Lake County will assess \$566,850 in Measure C taxes when cultivation commences. The amount Lake County would spend to collect that sum is minimal given that the licenses are predominantly outdoor at 88% of the square feet (442,850 sf) of total cultivation space. Outdoor farming operations on existing agricultural land are simple enough to allow for low overhead in processing applications and compliance monitoring.

In addition to the taxes collected above, Lake County would see economic activity surge with those cultivation sites in full bloom of commercial exchange. Prices have fluctuated on a per-pound basis over

the past two years, which is to be expected as the industry makes the transition to full regulation. It’s likely that prices will fluctuate for another few years, much like they have in other states (Washington and Colorado) that have legalized cannabis.

The wholesale price yields per square foot at present range from \$50 (outdoor) to \$154 (mixed-light). The table below shows the potential economic activity generated from the cultivators in Lake County awaiting final approval.

Cultivation Sites	Square Feet	Yield Pounds	Yield \$ per SF	Gross
Outdoor	442,850	26,571	\$50	\$23.9 M
Mixed-light	62,000	9,300	\$154	\$9.3 M
	504,850	35,871	—	\$33.2 M

Of the estimated \$33.2 million generated in economic activity, nearly 60% (\$20 million) would be costs of cultivation that would most likely be spent locally for labor, materials, and services. Those expenditures (if spent locally) would generate economic multipliers that could bring the total impact to double the initial expenditure, or \$40 million. Lake County has a sales tax Measure G on the June ballot. The incremental increase in economic activity due to the cannabis industry will support the generation of funds should the sales tax be adopted. Sales tax alone would be substantial at around \$300,000 to Lake County (and its cities). A full economic impact analysis would be required to be more specific as to the actual number, but that is an estimate based upon figures cited from studies in cannabis and other agricultural products.

The number of jobs supported by approximately \$40 million in increased activity is worth considering, since many Lake County residents commute out of county for work. Nearly 1,500 Lake County workers commute over 90 minutes each way to work every day (presumably out of county) according to ESRI 2017. Given that Lake County median household income is 33% lower than the national average, it would stand to reason that a new industry with native resources that can generate \$40 million in economic activity locally is a welcome windfall. There are many examples of small rural communities in California benefiting from the nascent cannabis industry, including The City of Greenfield and King City.

How is the Cannabis Market Changing and Where Does Lake County Fit?

Lake County cultivators have decided to focus on outdoor sites (88% of total square footage). This may align well with the current trends of the larger industry within California and other legal states. For decades the Western region (Washington, Oregon, California and Colorado) have served as bellwether states for coming national trends.

Over the past decade, consumption of cannabis in different forms has accelerated. No longer is flower the mostly dominant form. Instead, we’re seeing the proliferation of non-psychoactive products (CBD) as well as psychoactive products coming in many forms for adult use and medicinal applications. Research and development spurring innovation is a hallmark of free market progress. The cannabis industry, under product safety and regulatory scrutiny, will introduce new products to serve a burgeoning growth in consumer types and product categories. Many consumers have been marginalized under a black and gray market scheme because they didn’t have access.

In the black market, there was less motivation for industry players to innovate new products since most consumers weren’t accessible. With the regulated market gaining traction, the pace of innovation is surging as investment funds are pouring in to fund research and development. The result is that there will be new market segments in the cannabis space that will drive the industry – using sketchy old black market data for projections into future markets is an unreliable economic model which can lead to false conclusions.

A few years ago, many economists asserted that cannabis consumer demand was static and not likely to increase much for adult use. This has proven to be a faulty assumption because new consumers are created when the industry expands its product array and applications for marginalized consumers. The purchasing behavior of existing consumers is expanding due to the availability of innovative new products. Economists did not imagine the myriad applications of products not yet in existence for which we are seeing evidence in the regulated adult-use market.

The innovation activity in manufacturing has provided another benefit to cultivators in that the distillate state of cannabis allows it to be preserved for years versus the dried plant state for flower-only marketing, which need to be through the supply chain in months. The trend of preserving the concentrates has helped stabilize the supply chain and provides a hedge against the abrupt dynamics of supply and demand fluctuations. Concentrated cannabis can be stockpiled and accessed in a measured way to provide price equilibrium in the markets.

Lake County is positioned to capitalize on the emerging market for bulk wholesale biomass (plant material in whole). Given the predominance of outdoor sites, Lake County cultivators are likely to sell most of their product through the manufacturing

channels. It's also possible for cultivators to contract for conversion to concentrate through industry consortiums and cooperatives to maintain equilibrium of supply prices. If local cultivators have solid investment foundations, they can explore vertical integration through the supply chain and apply marketing practices to create demand for specific brands under their house, or through consortiums of shared branding.

Contrary to the HdL claim that there is a 3.25 times oversupply of cannabis biomass in California, shortages are the biggest threat. Lab testing and track and trace, combined with a chaotic chain of custody through distribution, are causing pockets of supply dysfunction. The market must have clean product (passes the stringent test for pesticides and other contaminants), and that is where there is currently a shortage. Manufacturers, distributors and retailers desperately need clean product and the current pipeline is disproportionately tainted. Tainted product must ultimately be destroyed, which represents a massive loss for manufacturers and backlash for cultivators supplying tainted material.

The entire biomass of Lake County's outdoor production could be converted to concentrate; it is possible to preserve crop value for use in vertical integration to produce value-added products (think wine grapes vertically integrated to produce wine). *The calculation for conversion is based upon a 10:1 ratio of biomass to concentrate and a current market wholesale price of \$9,000 per pound for concentrate. There is a marginal cost of conversion at around 50% unless the manufacturing process is controlled by the cultivator. Cultivators can close some of that marginal cost gap by selling through distributors to retailers with finished products.*

Lake County	Pounds	Value Biomass & flower	Conversion to Distillate lbs.	Distillate value	Advantage
Outdoor supply	26,571	\$23.9 million	2,600	\$23.4 M	Preservation of crop value

The cultivators investing for the long term will be well-funded and able to ride out the dynamics of the market until such time that the federal ban is lifted, and interstate commerce is allowed, which will create new markets for seasoned California cultivators. Recent indicators are pointing in the direction of ending cannabis prohibition. Similarly, alcohol prohibition ended when enough states became wet reflecting public sentiment that favored its end. The medicinal benefits of cannabis far outpace those for alcohol, which is driving national acceptance. Alcohol was legally available during prohibition via a doctor's prescription. That was a medicinal ruse, unlike the real and verifiable medicinal application of cannabis-derived products.

The Consumer Market Favors patience, innovation and first-movers, and is changing rapidly as legalization moves forward. Sluggish policy-setting and processing of local permits is the biggest obstacle for cannabis supply chain players, not free market dynamics. Governmental behavior that slows down free market activity is revitalizing the black market for the biggest cannabis consumers. High taxes and fees are passed along to the consumer at retail and as a result, consumers are returning the black market. The chart below shows the opportunity for consumer demand as previously identified in this update.



Major new developments are driving increased demand.

There has been a massive surge in earned media (feature pieces versus advertising) covering cannabis consumption in mainstream media. Leading up to and through the legalization launch, mainstream media has latched onto cannabis consumption coverage beyond the “news” event and into “feature-lifestyle” coverage often featuring celebrities and their product lines. Most metro daily newspapers have started standalone cannabis media outlets and digital media (including social media) have seen an increase in feature coverage, especially in videos documenting consumption and production. Feature coverage tends to boost consumption because it’s light and alluring, much like coverage of food and entertainment. Cannabis retailers have purchased media but earned media is many times greater in value. As cannabis becomes more socially acceptable, earned media will only continue to increase as media companies jockey for position to secure advertising revenue.

The invention of new products, classes, and market segments not dependent upon smoking cannabis flower is driving increased demand. Specifically, “no-high” cannabis that is purely medicinal has attracted many consumers who seek the medicinal benefits without the psychoactive side effects. These developments have attracted new and marginal consumers because they are not aligned with the old stereotype of cannabis smoking. CBD medicinal products and other non-psychoactive products are now purchased in supermarkets and drugstores. Although they are of lesser quality and strength than dispensary-bought products, they urge new consumers to explore more potent medicinal products from the regulated market. Edibles and beverages are increasing in sales and appeal to the female demographic, which has lagged behind the consumption levels of males. Tinctures and salves, vapes and dabs, are providing the sort of diversity that attracts more consumers. Most importantly, these new items aren’t displacing flower sales 1-to-1 but represent an increase in total sales. The more media covers these exciting new products, the more we’ll see new consumers trying cannabis for the first time, or particularly for older consumers a renewing of habits abandoned in their young adult years. Due to the regulated market, the new products are safer and more efficacious.

Virtual dispensaries that deliver cannabis products to a subscriber’s door, often in less than an hour, are booming, especially in cities where they are permitted in lieu of brick and mortar stores. Eaze, perhaps the leader in this field, is considered the Uber of cannabis delivery.

All these innovations and changes signal increased consumer sales beyond all previous estimates. MarketWatch (a Dow Jones Co.) recently projected a California consumer market in 2018 of \$13.7 billion. It’s likely higher than that even when one considers underreporting use by consumers (consumers are prone to underreporting “vice” consumables), a new diverse array of products, and the large demand by tourists who tend to be less price-sensitive if traveling from a state where cannabis is not yet legal.

Summary

Lake County cultivators can be first-movers and gain a place in the supply chain now. Bear in mind that ending prohibition of cannabis is like the ending of alcohol prohibition in which there are known factors of production and consumption, unlike an emerging market of a new product or service without a history. The biggest adjustment and factor of success is moving from criminal enforcement to civil regulation. And that responsibility of transition is dependent upon government's efficacy in moving swiftly with minimal disruption to the markets. Otherwise, the black market remains the only avenue for consumers and producers alike.