BOARD OF SUPERVISORS
Yolo County, California

Date: November 7, 2017 To: CAO ✓

34. Receive presentation on cannabis tax ballot measure and provide direction to staff on next steps. (No general fund impact) (Blacklock/Tengolics)

The following individuals addressed the Board on this item: Gina Daleiden, Heidy Kellison, Michael Hicks, Daniel Conway, Caslin Tomaszewski, Jesse Loren and Alan Hirsch.

Received presentation on cannabis tax ballot measure and provided direction to staff on next steps.

County of Yolo

www.yolocounty.org

To: Supervisor Duane Chamberlain, Chair
and Members of the Board of Supervisors

Regular-General Government # 34.

Board of Supervisors **County Administrator**

Meeting Date: 11/07/2017

Brief Title: Cannabis Tax

From: Patrick Blacklock, County Administrator

Staff Contact: Alexander Tengolics, Legislative & Government Affairs Specialist II, County Administrator's Office, x8068

Subject

Receive presentation on cannabis tax ballot measure and provide direction to staff on next steps. (No general fund impact) (Blacklock/Tengolics)

Recommended Action

Receive presentation on cannabis tax ballot measure and provide direction to staff on next steps.

Strategic Plan Goal(s)

Operational Excellence
Safe Communities
Sustainable Environment

Reason for Recommended Action/Background

At the September 12, 2017 Board meeting, the Board appointed an ad hoc subcommittee of Supervisors Provenza and Villegas to provide policy feedback to staff on the promulgation of a cannabis tax ballot measure. Staff and the subcommittee have met regularly to discuss cannabis tax policy matters. Additionally, HDL was retained to conduct a fiscal analysis of various taxation mechanisms and rates, which analysis is attached as Attachment A.

In developing a tax measure, there are several key questions which the Board must address: (a) whether the tax will be a general or special tax, (b) the area of taxation, (c) the mechanism of taxation, and (d) the rate of taxation.

General or Special Tax

A general tax is one in which the tax proceeds go into the County's general fund and are available for general governmental purposes. The Board of Supervisors may levy a tax for general purposes, provided the ordinance proposing the tax is approved by a two-thirds vote of all members of the Board (4/5 vote) and the tax approved by majority vote of voters.

In contrast, any tax levied to fund a specific governmental project or program, or any tax in which the proceeds are not placed in the general fund, and are not made available for general government purposes, is a special tax. With limited exceptions not relevant here, a special tax of this nature requires a majority vote of the Board to place it on the ballot and approval by a two-thirds vote of voters.

Staff and subcommittee recommend a general tax. Should the Board wish to provide voters guidance as to how the tax revenues would be appropriated, the Board can always include an advisory measure.

Area of Taxation

A cannabis tax measure could levy the tax on a countywide or unincorporated area basis. Given the cities within Yolo County are all pursuing their own cannabis regulatory structures and out of deference to local control, staff and subcommittee recommend that a cannabis tax only apply to commercial activity in the unincorporated area. It is important to note that even though it is recommended the measure only apply to the unincorporated area, the vote on the tax measure would be countywide.

Mechanism of Taxation

There are three identified mechanisms for the taxation of cannabis cultivation each of which is discussed in some detail in the HDL analysis. A brief summary of the comparative advantages and disadvantages of each is as follows:

<u>Square Footage of Canopy</u>: A tax on the square footage of permitted canopy. This method is the most predictable for tax revenue forecasting, as the tax is levied irrespective of production or revenue. It is generally simple to calculate and administer. Given that the tax does not differentiate between quality/cost of product, the effective rate of taxation can vary as lower cost product is taxed at a higher rate than that of a higher cost product. Consequently, this effect could be used to move County cultivation up market, as there is an inverse correlation between cost of product and effective rate of taxation (the higher the product cost, the lower the effective rate of taxation). Conversely, square footage-based taxes can be viewed as regressive for growers. Additionally, it is important to note, that while square footage-based taxes can be multiplied to attempt to capture multiple grow cycles, there is the potential for sophisticated cultivators to produce grow cycles in excess of the multiplier (i.e. indoor cultivators are typically charged three times the per square foot rate of outdoor cultivators; however indoor cultivators may be able to produce more than three cycles. Similarly, some outdoor cultivators can produce more than one harvest a year as well).

<u>Gross Receipts</u>: A tax on the gross revenue of a cultivator. It is subject to variability. Tax revenues are based on production which can fluctuate or be seasonal (i.e. outdoor

growers only harvest once per year). It is harder to collect, especially if there are segmented rates for different product. It is typically applied to commercial activities other than cultivation. Generally considered progressive to growers who pay tax only on what they sell. It is important to note that this is a tax on revenue, not profit.

Weight: A tax on the total weight of cannabis produced. It is subject to variability. Tax revenues are based on production which can fluctuate or be seasonal (i.e. outdoor growers only harvest once per year). It is generally easier to calculate and administer provided the tax is a fixed rate (other than a potential differentiation between flower and trim/leaf). However, similar to square footage-based taxes, a fixed rate inherently does not differentiate between quality/cost of product, so the effective rate of taxation can vary as lower cost product is taxed at a higher rate than that of a higher cost product. Again similar to square footage-based taxes, this effect could be used to move County cultivation up market, as there is an inverse correlation between cost of product and effective rate of taxation (the higher the product cost, the lower the effective rate of taxation). This dynamic aside, weight-based taxes are generally progressive to growers as they pay tax only on what they produce. The County already collects weight data through its track and trace program, making it feasible to bring a weight based tax online with existing resources.

Recommendation: Staff and the subcommittee recommend a weight-based cultivation tax as it is progressive, transparent, captures the totality of production, and can be coupled with the County's existing track and trace system. Staff and the subcommittee also recommend a gross receipts tax on all other commercial cannabis activity.

Rate of Taxation

A critical element of promulgating a potential cannabis tax measure is setting an appropriate tax rate that both generates sufficient revenue to the County and allows for a sustainable cultivation market. To that end, staff generated the chart included in Attachment B, that compares the tax rates set by other counties according to the relative percentage of value of the tax. This allows for comparison across all mechanism type (assuming a current wholesale price of $1000/lb and three harvest cycles per year of indoor/mixed light cultivation). Current cannabis taxes as represented as a percentage of value range from 1-15% in counties with a cluster around the 3-10% of value range. Many of these taxes have minimums and maximums and allow the Board of Supervisors to set the tax within that range as well as different tax rates and mechanisms for different commercial activities. It is important to note that not all counties that have a tax in place currently allow for commercial cannabis activities.

Given the distribution of tax rates, as shown in the attached chart (Att. B), staff and subcommittee recommend that the Board consider a tax rate as a percentage of value with a minimum of 5% up to a maximum of 10% with annual CPI adjustments, with the Board having the discretion to set within that range. Staff and subcommittee agree that flexibility is important as market conditions may change drastically as state taxes go into effect, vertical integration is permitted, etc.

The HDL analysis also cautions that California currently produces over five times of what it consumes domestically:

> A Standardized Regulatory Impact Assessment (SRIA) prepared for CDFA estimates statewide cannabis production at 13.5 million pounds, though its estimate of the amount of cannabis consumed by California residents is just 2.5 million pounds, suggesting a significant amount of overproduction that is presumably exported to other states through the black market. A separate study performed for the California Cannabis Industry Association put statewide consumption even lower, at 1.6 million pounds.

Additionally, the HDL report notes that the legalization of recreational cannabis is only anticipated to result in a 9.4% increase in consumer demand, putting further downward pressure on legal production.

Furthermore, given that cultivation is the first step of production, and that there is the potential for an overabundance of cultivation capacity in California, if quality is assumed equal, the tax rate is likely to be a significant factor in price differential. As such, to ensure market stability and by proxy tax revenue and tax funded service stability, it is important that the tax be competitive with other jurisdictions.

A 5-10% of value tax would correspond to the following tax rates (assuming $1000/lb wholesale price and 3 harvest cycles for greenhouse/indoor):

Tax Mechanism	**Percent of Value**	**Tax Rate**
SQFT (Proposed Min 1lb/20 SQFT)	5%	$2.50/SQFT Outdoor $7.50/SQFT Indoor
SQFT (Proposed Max 1lb/20 SQFT)	10%	$5/SQFT Outdoor $15/SQFT Indoor
SQFT (Proposed Min 1lb/10 SQFT)	5%	$5/SQFT Outdoor $15/SQFT Indoor
SQFT (Proposed Max 1lb/10 SQFT)	10%	$10/SQFT Outdoor $30/SQFT Indoor
Gross Receipts (Proposed Min)	5%	5% Gross Receipts
Gross Receipts (Proposed Max)	10%	10% Gross Receipts
Weight (Proposed Min)	5%	$3.25/oz flower
Weight (Proposed Max)	10%	$6.50/oz flower

Current yields in Yolo County are lower than the industry expected yield of 1lb/10 square feet of canopy and currently appear to be closer to 1lb/20 square feet of canopy. This deviation from the expected yield can potentially be attributed to unanticipated contamination and pests, boron in the water, and cultivator ability. Given that this is the first year of production and that many cultivators are still in the process of developing their cultivation area, etc. future production could trend closer to the expected yield. As such the chart also includes to what rate a 5-10% of value square foot-based tax would correspond (gross receipt and weight based rates would not change, as those methods account for productivity) at 1lb/20 square feet of canopy.

The chart below shows the estimated tax revenue for the corresponding percentage of value at both the current productivity of 1lb/20 square feet of canopy and the expected standard of 1lb/10 square feet of canopy. The number of cultivation sites are based upon current number (68), active applications (75), and total potential applications (100). The breakdown between outdoor and greenhouse or indoor is based upon the current breakdown (80% outdoor and 20% indoor), as well as an estimated prospective breakdown (30% outdoor and 70% indoor) which favors a trend toward greenhouses as the industry matures. Additionally, Board policy discussion on the matter has signaled an increased interest in the industry transitioning to greenhouses rather than outdoor cultivation which also informed the prospective breakdown.

It is important to reiterate that legal cannabis cultivation is a new market and as such it is impossible to have complete confidence in any of the assumptions or estimates. These revenue estimates are best used an illustrative guide to relative tax revenues, rather than a discrete revenue estimate.

Estimated Revenue @ 1lb/20 SQFT			
Number of Cultivation Sites	**Tax as Percentage of Value**	**Estimated Revenue**	**Estimated Revenue w/ Attrition**
68 (80% outdoor, 20% indoor)	5%	**$7m**	**$5m**
68 (80% outdoor, 20% indoor)	10%	**$15m**	**$7.5m**
75 (30% outdoor, 70% indoor)	5%	**$10m**	**$7.5m**
75 (30% outdoor, 70% indoor)	10%	**$19m**	**$10m**
100 (30% outdoor, 70% indoor)	5%	**$13m**	**$10m**
100 (30% outdoor, 70% indoor)	10%	**$26m**	**$13m**

Estimated Revenue @ 1lb/10 SQFT			
Number of Cultivation Sites	**Tax as Percentage of Value**	**Estimated Revenue**	**Estimated Revenue w/ Attrition**
75 (30% outdoor, 70% indoor)	5%	**$22m**	**$16.5m**
75 (30% outdoor, 70% indoor)	10%	**$44m**	**$22m**
100 (30% outdoor, 70% indoor)	5%	**$29m**	**$22m**
100 (30% outdoor, 70% indoor)	10%	**$59m**	**$30m**

An estimate that includes an attrition factor of 5% revenue decline per 1% of taxation is also included in the above charts to provide the Board a sense of potential revenue decline as cultivators leave the local market for lower tax markets. Staff conferred with HDL on the use of an attrition factor; however, there is no current model that includes an attrition factor as there is insufficient data to accurately model or validate the assumption. However, HDL uses the previously mentioned attrition factor of 5% revenue decline per 1% of taxation as a stand-in. Again, while it is impossible to validate the attrition factor, staff felt it prudent to include an attrition calculation for the Board to consider in its deliberations.

Potential revenue estimates range from a low of $5m to $59m depending on rate of taxation, productivity, indoor or outdoor cultivation, and the use of the previously discussed attrition factor. However, it is important to keep in mind that even if productivity improves, there may not be a sufficient market to accommodate the new production. For example, the estimated production of 75 cultivators at 1lb/10 square feet of canopy would be 445k pounds, almost 20% of the state's estimated consumption 2.5m pounds.

Staff reached out to County departments and other public service agencies to discuss their prospective needs related to mitigating cannabis impacts across a broad spectrum of programs including law and justice, health and human services, and K-12 education. Pursuant to the guiding principles on cannabis that the Board adopted at the October 11 Board meeting "requiring impacts of cannabis shall be fully compensated by the cannabis industry," staff has concerns that the most conservative revenue estimates ($5m) may not provide sufficient revenue to address these impacts. In order to address these impacts and provide a net public benefit staff estimates that tax revenues would need to track closer to $10m, which appears feasible with a tax of 5% of value should net production increase. However, it is important to note that cannabis related impacts will still occur irrespective of a tax measure or the closure of County's cultivation program. Given the potential for significant revenue variation given numerous external factors, the Board may want to consider an endowment strategy concept similar to the current Pomona fund. The potential for revenue fluctuation or decline could be mitigated by building an endowment which produces a consistent revenue stream thus providing service stability.

While the County currently does not permit commercial activities other than cultivation (other than drying and trimming facilities and nurseries, which may be permitted through a pilot program), staff and the subcommittee recommend the Board consider a gross receipts tax rate with a minimum of 5% up to a maximum of 10%, with the Board having the discretion to set within that range for all commercial activities. This language would be included to ensure that if the Board or a future Board permits additional commercial activities in the future, there would be a mechanism in place to collect revenue. The prospective inclusion of this mechanism is especially important as the future vertical integration of the market could alter economies of scale and effect the viability of single activity operations. HDL was unable to conduct a fiscal analysis of what tax revenue other commercial activities could generate as there are no established parameters for those activities, or the activities that may be allowed via the RFP process.

Also attached is a proposal staff received from representatives of the Yolo County Cannabis Coalition (Att. C). The document proposes a square footage of canopy based tax ranging from $1-3 per square foot, depending on cultivation type or a gross receipts tax of an initial rate of $2.5% with the potential to increase to 4% with an estimated tax revenue of approximately $4m annually.

Additionally, any tax measure would not preclude the use of development agreements as a means of generating revenue to mitigate impacts and provide net public benefit. Development agreements could be structured to overlay or be complementary to a tax measure and the two mechanisms need not be mutually exclusive. The subcommittee also discussed an interest in including cultivation activities in the pilot program RFP process to fast track the review and consideration of more complex cultivation operations through the use of development agreements. The Board may want to discuss and consider whether asking staff to bring back analysis for this option as part of the upcoming RFP discussion.

Staff plans on returning to the Board on December 12, 2017 pending Board direction to provide the Board another opportunity for feedback and guidance prior to a returning to the Board on January 9 for a first reading of the tax measure ordinance. A second reading of the ordinance would then occur on January 23, 2018. A 4/5 vote is required to place the ordinance on the ballot, assuming a general tax is proposed. The deadline to have the measure approved by the Board and a copy given to the Elections office is February 6, 2018.

Collaborations (including Board advisory groups and external partner agencies)

Cannabis Tax Ad-Hoc Subcommittee, County Counsel, Cannabis Cultivators

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Fiscal Information

No Fiscal Impact

Fiscal Impact of this Expenditure

Total cost of recommended action	
Amount budgeted for expenditure	
Additional expenditure authority needed	$0
On-going commitment (annual cost)	

Source of Funds for this Expenditure

General Fund	$0

Attachments

Att. A. Hdl Analysis
Att. B. County Cannabis Tax Rate Comparison Chart
Att. C. Yolo County Cannabis Coalition Memo
Att. D. Presentation

Form Review

Inbox	Reviewed By	Date
Patrick Blacklock	Patrick Blacklock	11/01/2017 01:23 PM
Phil Pogledich	Phil Pogledich	11/02/2017 10:06 AM

Form Started By: Alexander Tengolics — Started On: 10/11/2017 11:52 AM

Final Approval Date: 11/02/2017

Delivering Revenue, Insight

and Efficiency to Local Government

Fiscal Analysis of the

Commercial Cannabis Industry

Prepared for

the

County of Yolo

October 31st, 2017

Table of Contents

Introduction

HdL is providing this fiscal analysis of the commercial medical and non-medical cannabis industry in Yolo County to help guide the process of shaping taxation policy for this emerging industry. Specifically, HdL was asked to identify tax options and revenue estimates for the various types of cannabis businesses which may currently be operating in the County, as well as those that might operate in the future under a County-regulated program, and to identify the local economic impacts of the cannabis industry. This report also seeks to analyze any financial constraints, including the overall tax and regulatory burden, which may impact both the industry's long-term stability and its ability to successfully transition to a legal, regulated paradigm that can outcompete the existing black market.

Discussion of regulating and taxing the cannabis industry can too often overshadow the larger jobs and economic development issues that typically accompany efforts to attract new industry. Word that a new business or industry is looking to bring hundreds of new jobs to a community is more commonly met with open arms and offers of tax incentives. The cannabis industry is perhaps completely unique in that the inherent jobs and economic development benefits are welcomed more grudgingly and met with the disincentive of special taxes. While the tax revenue potential is attractive to local governments, imposing excessively high rates may reduce the number of businesses that step forward and decrease the likelihood that they will succeed in the regulated market. In this way, higher taxes could result in less revenue.

In considering whether to impose taxes, and at what rates, local decision makers must start with a candid assessment of their goals. What is their community's relationship with this industry currently? What would they like it to be in the future? How can they use a combination of land use, regulation, taxes and law enforcement to move this industry in the desired direction? Doing so can allow the County, with the help of numerous State agencies, to regulate this industry so as to reduce harm to consumers, the community, and the environment that have gone unmitigated for too long.

Cannabis cultivation, manufacturing distribution and retail sales each offer different challenges and opportunities for the County. Retailers serve the local population, so the amount of product they sell and the amount of revenue they collectively generate is not greatly affected by the number of dispensaries through which that product flows. From a tax perspective, retail sales are a zero-sum game in that, eventually, new retailers simply cannibalize sales from existing ones.

Cannabis manufacturing presents the best opportunity for growing new businesses and jobs, but this sector has a high degree of mobility. The manufacturing segment is growing and expanding, and offers lots of opportunity for innovation and job creation. Clear regulatory policies and low tax rates will be essential for attracting or holding on to this sector.

Equally important to tax rates is setting a clear and unambiguous direction for regulatory policy. As with any other industry, the cannabis industry desires regulatory certainty. This is a pivotal moment in time for the cannabis industry in California and Yolo County, and delay can cause lost opportunities for those cannabis businesses that are looking to make the transition to a legal, regulated market. We encourage the County to provide as much clarity as possible regarding its goals for this emerging industry, and to establish a clear and methodical process for working towards those goals in a timely manner. Doing so will provide the greatest opportunity for the County's cannabis industry to succeed in a rapidly changing world.

Legal and Regulatory Background for California

The legal and regulatory status of cannabis in the State of California ("State") has been continually evolving ever since the passage of Proposition 215, the Compassionate Use Act of 1996 ("the CUA"), which de-criminalized the use, possession and cultivation of cannabis for qualifying patients and their primary caregivers when such use has been recommended by a physician. The CUA did not create any regulatory program to guide implementation, nor did it provide any guidelines for local jurisdictions to establish their own regulations.

The lack of legal and regulatory certainty for medical marijuana (or cannabis) continued for nearly 20 years, until the passage of the Medical Cannabis Regulation and Safety Act ("MCRSA") in October of 2015. MCRSA creates a State licensing program for commercial medical cannabis activities, while allowing counties and cities to maintain local regulatory authority. The State will not issue a state license without first receiving authorization by the applicable local jurisdiction.

Under MCRSA, commercial medical cannabis activities are regulated by a variety of State agencies. The California Department of Food and Agriculture (CDFA) will create, issue, and suspend or revoke licenses for the cultivation of medical cannabis. The Bureau of Medical Cannabis Regulation (later renamed the Bureau of Cannabis Control, or BCC) in the Department of Consumer Affairs, will administer, enforce, create, issue, renew, discipline, suspend, and/or revoke licenses for distributors, testing laboratories, and dispensaries. The California Department of Public Health's newly created Office of Manufactured Cannabis Safety (OMCS), will license cannabis product manufacturers, and will develop standards for the production and labeling of all medical cannabis products.

On November 8, 2016, the voters of the State of California approved Proposition 64, the Adult Use of Marijuana Act ("the AUMA"), which allows adults 21 years of age or older to legally grow, possess, and use marijuana for non-medical purposes, with certain restrictions. The AUMA requires the State to regulate non-medical marijuana businesses and tax the growing and selling of medical and non-medical marijuana. Cities and counties may also regulate non-medical marijuana businesses by requiring them to obtain local permits or restricting where they may be located. Cities and counties may also completely ban marijuana related businesses if they so choose.

Most recently, on June 27, 2017, the State of California passed SB 94, which repealed MCRSA and incorporated certain provisions of MCRSA into the licensing provisions of AUMA. These consolidated provisions are now known as the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA). MAUCRSA revised references to "marijuana" or "medical marijuana" in existing law to instead refer to "cannabis" or "medicinal cannabis," respectively. MAUCRSA generally imposes the same requirements on both commercial medicinal and commercial adult-use cannabis activity, with certain exceptions.

All State license types other than Type 8 Testing Laboratories shall be designated either "A" for Adult Use or "M" for Medical". A single licensee will be allowed to hold both A and M licenses. , but it's unclear whether they will be able to operate both on the same premises.

Figure 1 lists the 20 different license types available from the State under MAUCRSA, plus two additional types (N and P manufacturers) that are anticipated to be created through the rulemaking process over the next few months. As noted, the licensee must be in compliance with any local regulations before the State will issue any license.

Figure 1:

State License Types Under MAUCRSA					
Type	**Activity**	**Description**	**Details**	**Licensing Agency**	**Notes**
1	Cultivation	Outdoor; Specialty, Small	Up to 5,000 sf, or 50 plants on non-contiguos plots	CDFA	A, B, C
1A	Cultivation	Indoor; Specialty, Small	501 sf - 5,000 sf	CDFA	A, B, C
1B	Cultivation	Mixed-Light; Specialty, Small	2,501 sf - 5,000 sf	CDFA	A, B, C
1C	Cultivation	Outdoor/indoor/mixed; Specialty Cottage, Small	Up to 25 plants outdoor; up to 2,500 sf mixed light; up to 500 sf indoor	CDFA	A, B, C
2	Cultivation	Outdoor; Small	5,001 sf - 10,000 sf	CDFA	A, B, C
2A	Cultivation	Indoor; Small	5,001 sf - 10,000 sf	CDFA	A, B, C
2B	Cultivation	Mixed Light, Small	5,001 sf - 10,000 sf	CDFA	A, B, C
3	Cultivation	Outdoor; Medium	10,001 sf - one acre	CDFA	A, B, C, D
3A	Cultivation	Indoor; Medium	10,001 sf - 22,000 sf	CDFA	A, B, C, D
3B	Cultivation	Mixed-Light; Medium	10,001 sf - 22,000 sf	CDFA	A, B, C, D
4	Cultivation	Nursery		CDFA	A, B, C
5	Cultivation	Outdoor; Large	Greater than 22,000 sf	CDFA	A, B, C, E
5A	Cultivation	Indoor; Large	Greater than 22,000 sf	CDFA	A, B, C, E
5B	Cultivation	Mixed-Light; Large	Greater than 22,000 sf	CDFA	A, B, C, E
6	Manufacturer 1	Extraction; Non-volatile	Allows infusion, packaging and labeling	OMCS	A, B
7	Manufacturer 2	Extraction; Volatile	Allows infusion, packaging and labeling, plus non-volatile	OMCS	A, B
N	Manufacturer	Packaging and Labeling	No extraction allowed	OMCS	A, B, F
P	Manufacturer	Infusion for Edibles, Topicals	No extraction allowed	OMCS	A, B, F
8	Testing		Shall not hold any other license type	BCC	A
10	Retailer	Retail sale and delivery		BCC	A, B
11	Distributor			BCC	A, B
12	Microbusiness	Cultivation, Manufacturer 1, Distributor and Retailer	< 10,000 sf of cultivation; must meet requirements for all license types	BCC	A, B

CDFA	California Department of Food and Agriculture
OMCS	Calfornia Department of Public Health, Office of Manufactured Cannabis Safety
BCC	Bureau of Cannabis Control
A	All license types valid for 12 months and must be renewed annually
B	All license types except Type 8 Testing must be designated either "A" (Adult Use) or "M" (Medical)
C	Anticipated that there will be a limit of 4 acres for any combination of cultivation licenses per licensee
D	CDFA shall limit the number of licenses allowed of this type
E	No Type 5 licenses shall be issued before January 1, 2023
F	Not yet in law, but expected to be established through rulemaking process

MAUCRSA incorporated the Type 5, 5A and 5B cultivation licenses from AUMA, which will allow for cannabis farms of unlimited size. No Type 5 licenses will be issued before 2023, however, and local jurisdictions will still retain the authority to disallow or limit the size of cannabis cultivation. It is anticipated that CDFA will limit the number of Type 5 licenses, but this is not yet clear.

AUMA and MAUCRSA eliminated the Type 12 Cannabis Transporter license type from MCRSA. Instead, cannabis cultivators, manufacturers and dispensaries (but not testing laboratories) are now allowed to transport their own product, provided they have a separate distributor license. Independent cannabis distributors will likely pick up a larger portion of that business, too. In its place, MAUCRSA incorporated the Type 12 license for cannabis "Microbusinesses" from AUMA, which allows a combined non-medical cannabis business with up to 10,000 square feet of cultivation, and which can manufacture, distribute and sell their product on-site to retail customers, provided they meet all of the individual license requirements for all of the activities they choose to undertake.

MAUCRSA also made a fundamental change to the local control provisions. Under MCRSA, an applicant could not obtain a State license until they had a local permit. Under MAUCRSA, an applicant for a State license does not have to first obtain a local permit, but they cannot be in violation of any local ordinance or regulations. The State licensing agency shall contact the local jurisdiction to see whether the applicant has a permit or is in violation of local regulations, but if the local jurisdiction does not respond within 60 days, then the applicant will be presumed to be in compliance and the State license will be issued.

Current Commercial Production in Yolo County

Cannabis cultivation exists in every county and region in California, either legally or through the black market, though the size and nature of the industry can vary greatly from place to place. A Standardized Regulatory Impact Assessment (SRIA) prepared for CDFA estimates statewide cannabis production at 13.5 million pounds, though its estimate of the amount of cannabis consumed by California residents is just 2.5 million pounds[i], suggesting a significant amount of overproduction that is presumably exported to other states through the black market. A separate study performed for the California Cannabis Industry Association put statewide consumption even lower, at 1.6 million pounds[ii].

The SRIA relies upon three sources of information: registered farms, eradications, and mapped but unregistered farms. The data captured is assumed to be accurate, but it does not capture unknowns such as indoor cultivation sites that have escaped detection. It also does not distinguish between black market cultivation and those who are seeking to become legal. These figures also do not include small amounts of cannabis grown for personal use or cannabis that is imported from Mexico. Given these constraints, it is likely that the actual amount of cannabis grown in California is even greater, perhaps far greater, than the 13.5 million pounds projected.

This same study found that the Sacramento Valley Region (which includes Tehama, Glenn, Butte, Sutter, Colusa, Yuba and Solano counties) produces 1,000,000 pounds of cannabis annually, which amounts to about 7.4% of the cannabis grown in California. 77% of the region's production is believed to be cultivated outdoors, with 15% using mixed-light cultivation and 8% being produced indoors. The SRIA does not break down estimates of production for individual counties, nor does it differentiate between the unincorporated counties and the cities within their boundaries. Dividing 1 million pounds equally among the seven counties in the region would give a figure of about 143,000 pounds for each county, though there is no reason to assume such an even regional apportionment.

Yolo County currently has 68 operating cultivation sites which are in the process of receiving permits from the County. 53 of these are outdoor sites (using only natural light[1]), and 15 are mixed light. It is believed that the vast majority of the outdoor grows are at or near the 1-acre maximum allowed under current State law for a Type 3 license, and that the mixed light grows are all at or near the 22,000 square foot maximum for a Type 3B license. The County's Agricultural Commissioner estimates that these growers will produce 140,000 pounds of dried flower this year.

The County foresees potential growth up to perhaps 200 grows in the near future. Part of this analysis will be to determine how likely this scenario is and what the revenue and other fiscal implications might be should the County allow for, and achieve, such growth.

[1] Under the State's licensing program, any cultivation that does not use supplemental lighting is considered "outdoor", even if it is grown in a greenhouse. This includes light deprivation accomplished by tarping.

Parameters for this Analysis

Yolo County has asked HdL to prepare a revenue forecast based on a variety of assumptions for both outdoor and mixed-light cannabis commercial activities being permitted in the County. This analysis will include a discussion of best practices for taxing cultivation and a variety of taxation options, including an excise tax per pound, a tax on gross receipts, and a tax per square foot of canopy.

This analysis will assume that all outdoor cultivation sites are a full acre in size (43,560 square feet), and that all mixed-light cultivation sites are 22,000 square feet. The analysis will also assume that all outdoor cultivation yields one harvest per year, and that mixed-light cultivation yields 3 harvests per year. These are generally accepted norms for the industry.

Using these assumptions, this analysis will apply a variety of tax structures to 3 different scenarios. The first scenario will be based upon the currently existing 68 grows, to provide a baseline.

The second scenario will assume that there are 75 permitted grows, with 23 of them (roughly 30%) being outdoor, and 52 of them (about 70%) being mixed light. This is generally the inverse of the County's current situation, with about 70% of the current 68 grows being outdoor, and 30% being mixed light.

The third scenario will assume that the County allows 200 cultivation sites, all of which are mixed light. As noted, both scenarios will assume that all permits utilize the maximum cultivation area allowed by State law.

Based on consultation with staff, this analysis will consider the specific tax structures and rates shown in Figure 2, below.

Figure 2:

Cultivation Tax Mechanism	Tax Rates
Square Footage	$3, $5, $7 and $10 per square foot of canopy space
Gross Receipts	3%, 5%, 10% and 15% of gross receipts
Per Pound	$50, $70, $100 and $125 per pound of dried flower

Our analysis will discuss the pros and cons of each of these methods, including discussion about which methods are easiest to implement from an administrative standpoint. We shall also seek to identify and discuss the economic impacts of the cannabis industry in Yolo County and analyze the financial constraints which may impact the industry as it adapts to a new, legal and regulated paradigm.

The third scenario, which imagines 200 mixed-light grow sites, explores the possibility of both expanding the County's current cultivation program and steering it from predominantly outdoor cultivation to entirely mixed-light cultivation. This is an interesting and unusual proposition, as the County already has 53 growers in the permit process who are each cultivating approximately a full acre outdoors. To accomplish this scenario, these growers would have to either convert to a different cultivation method which may require them to relocate their operation, or they would have to go out of business completely, to be replaced by different growers, at different locations, using different cultivation methods.

To determine the likelihood of this transition, our analysis will look to data gathered from the California Department of Food and Agriculture's August 2016 survey of interest in the various commercial cannabis license types for each county in California.

The CDFA survey data was gathered solely through self-reporting from respondents all around California who voluntarily chose to participate by going to CDFA's website. The survey methods were neither detailed nor conclusive and did not require any evidence or corroboration of a respondent's stated intent to apply for a given type of license in any particular county. The survey data also does not distinguish between the County's unincorporated jurisdiction and the cities within the County.

While we have clear concerns with the specific accuracy of this data, we believe this survey is still valuable. In counties which have done a more detailed local registry of prospective licensees, we have found the CDFA data comports roughly with the local data as a general indicator of greater or lesser interest in the various cultivation license types, though not in actual numbers.

That CDFA survey shows 207 people expressing interest in seeking any of the 9 cultivation license types in all of Yolo County, including both the cities and the unincorporated area. Of these, 60 expressed their interest in mixed-light cultivation licenses (Type 1B, 2B or 3B), but just 23 of these stated their desire to pursue the "Medium" 3B license, which allows up to 22,000 square feet of cultivation area. While this number is slightly higher than the 15 currently in the County's permit process, it is far below the 200 the County is considering. Where the other 177 applicants would come from is unknown at this point.

It's possible that some of the remaining 37 from the CDFA survey who expressed interest in the smaller 1B or 2B licenses may seek to step up to the larger 3B license. It's also possible that some of the other 147 prospective growers who expressed interest in outdoor or indoor cultivation may step forward to pursue mixed-light cultivation, instead. How the County expects to achieve this level of growth or transformation in the number and type of growers is unclear.

Taxing Cultivation

There are three main approaches to taxing commercial cannabis cultivation:

1) A tax on cultivation area by square foot: This is the method most commonly used by local jurisdictions to tax cannabis cultivation, as discussed in detail below.
2) A tax on gross receipts of a cannabis business; This is the method most commonly applied to cannabis businesses such as manufacturers and retailers, but it can also be applied to cultivation.
3) A per-unit tax on the product by weight or volume: The State's cultivation tax of $9.25 per ounce of dried flower or $2.75 per ounce of dried leaf is a tax on product by weight, which does not consider the value of the product.

Each of these tax structures uses a different metric; square footage, gross receipts or unit of product. A square-footage tax on cultivation area does not concern itself with either the quantity or value of the product being cultivated in that space. A gross receipts tax doesn't consider how much area is being cultivated, or how much cannabis is being produced. A tax on weight doesn't consider how much area is used to produce that amount of cannabis, or the value of the product.

In choosing which method to apply, the County must consider which aspect, or impact, it wishes to use as its metric. Before we can compare the advantages or shortcomings of each of these tax methods, we must find a common denominator that allows for a true "apples to apples" comparison between square footage, weight of product, and gross receipts.

As with regulations, taxes provide the opportunity to encourage and incentivize certain industry behaviors while discouraging or disincentivizing others. They can be used to level the playing field, or to tilt it as desired. Higher taxes are generally seen as creating a less-welcoming regulatory environment, while tax incentives are sometimes offered to help attract businesses. In this way, the effect of taxes on the cannabis industry should be no different than any other industry. While retailers must be located to serve the local population, cannabis growers have some option to move to other jurisdictions with a more advantageous regulatory climate.

If the County desires to generate revenue through a tax on cultivation, then it must find tax rates and structures that are acceptable or advantageous to those aspects of the industry it wishes to allow, support or encourage. Simply put, the County will not realize any revenue from businesses which choose to locate elsewhere due to a burdensome or unwelcoming regulatory and tax climate.

Square Footage Tax

Cannabis cultivation is most commonly taxed on the square footage of the canopy or cultivation area. Draft regulations developed by the California Department of Food and Agriculture (CDFA) for implementation of MCRSA[2] define "canopy" to mean all of the following:

[2] In late June, the Legislature passed and the Governor signed into law, the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA), which repealed MCRSA and creates one regulatory system for both medicinal and adult-use cannabis. As a result, CDFA, the California Department of Public Health and the renamed Bureau of Cannabis Control have withdrawn their proposed regulations and are each developing new proposed regulations based on the new law. It is expected that the revised rules will track closely with the previous proposed rules. The

1) The designated area(s) at a licensed premises that will contain mature plants at any point in time;
2) Canopy shall be calculated in square feet and measured using clearly identifiable boundaries of all area(s) that will contain mature plants at any point in time, including all of the space(s) within the boundaries;
3) Canopy may be noncontiguous but each unique area included in the total canopy calculation shall be separated by an identifiable boundary such as an interior wall or by at least 10 feet of open space; and
4) If mature plants are being cultivated using a shelving system, the surface area of each level shall be included in the total canopy calculation.

The State's proposed definition arguably makes "canopy" the same as the permitted cultivation area. Using this same definition for local regulatory and tax ordinances would allow the County's cultivation tax to be directly tied to the specific square footage of the permitted cultivation area. This has a number of benefits to both the cultivator and the taxing agency.

A tax on the square footage of the permitted cultivation area allows both the grower and the county to know exactly how much the annual tax will be at the time the permit is applied for or issued. The tax is a fixed amount, rather than a variable, so the grower can factor the cost into their financing or business plan without any uncertainty as to the amount of their tax liability for the year. Similarly, this foreknowledge allows the local government to accurately predict their annual revenues from the cultivation tax, for improved budgeting.

With a square footage tax, the tax liability is known upfront, so payment can be made at any time rather than having to wait until the end of the year. Payment of the tax upfront at the time of permitting may create cashflow problems for the grower, as it would require a significant capital outlay far in advance of harvest and sale. Alternately, tax payments can be made in monthly installments, or deferred until time of harvest. Since the amount of the tax liability would be known upfront, there would be no end-of-year tax surprises for either the cultivator or the County.

A square footage tax does have a significant shortcoming in that it is based upon assumptions of yield, rather than actual yield. As an agricultural crop, cannabis can be subject to crop loss due to pests, bugs, mites, viruses, mold and mildew. A tax on square footage, by itself, cannot account for such occurrences upfront. Unless there is some accommodation or mechanism put in place to address crop loss, the cultivator may find themselves paying the same amount of tax on half a crop, or even no crop, as they would have on a full, healthy crop.

Gross Receipts Tax

A tax on the gross receipts of a business may be paid monthly, quarterly, or annually. Since cultivation is cyclical, growers are likely to have some months where they have no reportable gross receipts, and other months where their gross receipts are high. This is especially the case for cultivation that uses only natural light (commonly referred to as "outdoor" cultivation, though this may occur in a greenhouse) which typically only achieves one harvest per year. The amount of their tax liability to the County may not be known until harvest time, which may leave some growers with a significant end-of-year tax burden beyond

agencies will use the emergency rulemaking process for the new proposed regulations, which are expected to be published in the fall for approval and implementation by January 2, 2018.

what they had planned for. However, this difference between projections and actual yield would be a positive, in that the cultivator would only have to pay a higher than expected tax if they were in the enviable position of having a higher than expected yield, or of selling their product for a higher than expected price. By contrast, under a square footage tax, a cultivator who experiences crop loss could have to pay the same amount of tax on a lower, perhaps much lower, yield.

While gross receipts taxes are common for cannabis manufacturers and dispensaries, they are somewhat less common for cultivation. Perhaps one of the reasons for this is that a cultivation tax could be seen as taxing a land use activity, rather than a product. In such case, the tax should be proportional to the impact of that activity. Cannabis cultivation is directly proportional to the amount of area to be cultivated, particularly in the case of outdoor or greenhouse cultivation. The impacts, too, may be seen as proportional to this cultivation area, whether it be the clearing of land, water supply or other environmental factors. However, these arguments in favor of a tax on the area of impact are less compelling when considering indoor or mixed-light cultivation.

A cultivation tax based on gross receipts is a tax on production or earnings, rather than activity. The cultivator's tax liability increases as productivity increases, even if the amount or area of activity has not changed. A cultivator who succeeds in producing more product, or a higher value product, from a given-size cultivation area, will pay more than a cultivator who produces less, or lower value product, from the same size area. As noted above, though, the cultivator would only be in the position of paying more tax if they brought in more money. What portion of that gross income the cultivator is able to realize as profit depends upon their business skills and other factors that are beyond the scope of this report.

MAUCRSA imposes an excise tax of 15% on the purchase of cannabis or cannabis products. On the surface, it might seem reasonable to use the reporting for this State tax as the basis for a local gross receipts tax. However, the State excise tax is to be measured by the average market price of the retail sale, instead of by gross receipts. The details of how, and how often, this average market price will be determined are still being worked out. Though a local tax could be keyed to numbers reported to the State, it would not be a true gross receipts tax. It would also be difficult to apply this tax to any activity other than the retail sale.

Per Pound Tax

An excise tax on the product yield per pound considers the amount of cannabis produced as the metric for taxation purposes. This is the method used by the State for its cultivation tax.

The primary shortcoming of a per-pound tax is that it does not consider the wide range of value or price that different grades of cannabis may bring. This would be similar to $1.00 per bottle tax on wine that would apply equally to a fine, $100 Cabernet Sauvignon or a bottle of "Two Buck Chuck". The higher value product can absorb the price easily, while the cheaper product would see a significant bump in its price. Given that cannabis flower can routinely sell for as little as $500 per pound to as much as $2,500 per pound wholesale, the impact of the tax would land disproportionately on growers producing lower-value product.

Additionally, with a per pound tax on cannabis it could be difficult to verify the actual amount of production. The State's cultivation tax of $9.25 per ounce of dried flower or $2.75 per ounce of dried leaf will require standardized reporting which could presumably provide the basis for a local tax. The local jurisdiction would have to decide whether it wishes to tax only the dried cannabis flower, or both the flower and the dried leaf and, if so, what rates to apply to each.

Each of these taxing methods (per square foot, per pound, and percent of value) have their advantages and disadvantages. A square footage tax is the easiest to administer[3], as the amount of the tax is known by both the County and the cultivator at the time the permit is issued, but it is less-well suited for capturing variables in price or production, or for accommodating circumstances such as crop loss. A gross receipts tax directly reflects the actual earnings of the business, but the amount of the tax liability can vary greatly from year to year, making budget projections difficult. A per-pound tax on production has the advantage of being consistent with the State's cultivation tax, but this also can vary, and does not capture huge variables in product value. Both the gross receipts tax and the per-pound tax can also be more difficult to administer, as the County must verify the business's reported earnings or production.

Recent changes to MAUCRSA under Senate Bill 133 allow for the vertical integration of different commercial cannabis activities by a single business entity without requiring separate premises for each license type. For example, a cannabis grower may now also manufacture and distribute their product from a single location, subject to local restrictions. In such cases, it may be difficult to apply separate taxes to different aspects of a single business. If a local jurisdiction intends to permit and tax a variety of commercial cannabis activities that can be co-located under a single ownership in this way, then a gross receipts tax provides the only mechanism for taxing all aspects of the business collectively under a single metric.

Harvest Cycles and Productivity

Both indoor and mixed-light cultivation are capable of multiple harvest cycles per year, as opposed to a single harvest cycle for outdoor cultivation. Though cultivation methods, harvest cycles and productivity can vary greatly, a standard rule of thumb among many in the industry is that outdoor (natural light) cultivation yields one harvest cycle per year, while mixed-light yields three harvests, and full-indoor commonly yields four or five. A flat, square-foot tax on the cultivation area thus gives mixed-light and indoor operations the advantage of being able to amortize that tax over far more product, granting them a distinct price advantage over outdoor cultivation. However, both indoor and mixed-light are far more infrastructure intensive than outdoor cultivation and typically carry far greater up-front investment and operational costs[iii]. Both of these factors should be considered when developing an appropriate tax strategy. This analysis considers only outdoor cultivation and mixed-light cultivation. The County is not considering indoor cultivation at this time.

Yield is commonly assumed to average one pound of cannabis flower for every 10 square feet of cultivation area. This metric is drawn from a 2010 study by the Rand Corporation[iv]. Though the study is fairly old for such a young industry, its findings are consistent with more recent studies. Some cultivation facilities can yield one pound for every eight square feet, and others cite yields that are much lower (more square feet per pound), but 10 square feet remains a commonly used metric which provides for conservative estimates.

Yolo's current production of 140,000 pounds calculates out to a production rate of 0.0425 pounds per square foot of cultivation area, or 23.5 square feet per pound, which is significantly below the average of 10 square feet per pound. This is believed to be a result of a number of factors, including lesser utilization

[3] Another administratively simple method of taxing is a flat licensing tax. Mendocino County, for example, charges a tax of $2,500 on all cannabis distribution, delivery, manufacturing, nurseries, and testing laboratories, regardless of their size or gross receipts. This is separate from fees that cover the costs of permitting.

of the permitted cultivation area, lower yields due to certain cultivation practices, and high test rejection rates for pesticide contamination due to drift from nearby fields.

Another contributor is believed to be elevated levels of boron in groundwater. Boron is a naturally occurring element found in rocks, soil, and groundwater. Boron is essential for plant growth, but it can also be harmful at higher concentrations. The State Water Resources Control Board has identified 25 wells in Yolo County with boron concentrations that exceed California State Notification Levels.[v]

We shall use the current production level of 140,000 pounds for purposes of revenue projections, as it is derived directly from field investigations of cultivators in Yolo County, rather than from modeling. We shall also use the 0.0425 pounds per square foot production rate derived from this number for projections above the existing number of growers. While it is possible that local growers may be able to improve their practices to increase yields in the future, the primary limiting factor will be the ability to carve out additional market share, regardless of how much is produced. Increasing supply does not increase demand.

Each State cultivation license type allows a range for the amount of area that can be cultivated. Types 1, 1A and 1B ("Specialty") each allow up to 5,000 square feet. Types 2, 2A and 2B ("Small") allow from 5,001 up to 10,000 square feet. Type 3 ("Medium") allows from 10,001 square feet up to a full acre (for outdoor cultivation) while Types 3A and 3B allow from 10,001 up to 22,000 square feet. The Type 5, 5A and 5B ("Large") licenses created by AUMA will allow for unlimited cultivation sizes, starting in 2023.

As noted in the parameters for this analysis, the County believes that all of the current outdoor cultivation sites are at or near a full acre in size, and that all of the mixed-light cultivation sites are at or near 22,000 square feet. This would put all of them in the Type 3 Medium Outdoor and Type 3B Medium Mixed-Light categories. For purposes of this analysis, we will assume that all cultivation sites are at their maximum size, but shall assume an average yield of 0.0425 pounds per square foot, as discussed above.

Comparing Square Footage, Gross Receipts and Per-Pound Taxes

Determining how a gross receipts tax rate for manufacturers, dispensaries or other cannabis businesses affects the overall, cumulative tax rate on cannabis is fairly easy, as it can be reverse engineered. This allows us to compare the relative tax burden on different cannabis activities, as well as the cumulative burden on the end consumer.

Determining an appropriate tax on cultivation area based on square feet is more difficult, as we have to convert the tax rate per square foot to a percentage of product value. To do this, we have to take into account the differences in harvest cycles per year, as noted above. If all other factors are equal, then indoor cultivation should be able to absorb a tax rate that is four times higher than the tax rate for outdoor cultivation.

We have provided a number of generic tables to demonstrate the difference between factors of harvest cycles and scale of operation. Each of these tables (figures 3 through 7) consider a sample area of just 1,000 square feet for each cultivation type. By using increments of 1,000 square feet as a standard unit of measure, it is easy to extrapolate to determine what the yield, value, and annual tax paid would be for larger sizes. Outdoor cultivation, mixed light and indoors are assumed to yield one, three and four harvest cycles per year, and we assume an average value of $1,000 per pound, as discussed previously. This allows us to compare square footage and gross receipts with a common denominator.

Flat Tax

Figure 3, below, shows the uneven result of a simple "flat tax" on cultivation area. In this example, all license types are taxed at a simple $1.00 per square foot rate, for illustration purposes. Though this may sound fair and equitable, the effective tax rate varies by a factor of four. Each cultivation type pays the same tax rate of $1.00 per square foot and the same amount of tax at $1,000. However, when the tax is amortized to capture the number of cycles per year, the equivalent gross receipts tax rate for mixed light drops to $0.33 per square foot and indoor drops to $0.25 per square foot. The tax per pound varies from $10.00 for outdoor down to just $2.50 for indoor, and the tax as a percent of value varies from 1.00% down to just 0.25%. Clearly, a flat tax gives a huge advantage and incentive to indoor cultivation, with its potential for four or more cycles per year, while presenting a significant disadvantage for outdoor cultivation.

Figure 3:

Flat Tax of $1 per Square Foot									
Cultivation Type	Harvest Cycles /Year	Sample Area (sq ft)	Yield (lbs)	Value @ $1,000/lb	Tax Rate $1.00/sf	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
Outdoors	1	1,000	100	$100,000	$1.00	$1,000	$1.00	$10.00	1.00%
Mixed Light	3	1,000	300	$300,000	$1.00	$1,000	$0.33	$3.33	0.33%
Indoors	4	1,000	400	$400,000	$1.00	$1,000	$0.25	$2.50	0.25%

Figure 4 presents the same scenario, but with a tax rate that varies depending upon the cultivation type and the anticipated number of harvest cycles per year. In this example, the tax rate for outdoor stays at $1.00 per square foot, but the tax on mixed light and indoor are increased to $3.00 per square foot and $4.00 per square foot, respectively. The amount of tax paid ranges from $1,000 to $4,000 for the same cultivation area but, when amortized over the number of harvest cycles, the tax rate is an even $1.00 per square foot, the tax per pound is an even $10.00 and the equivalent tax rate as a percent of value is 1.00% for all cultivation types. Using this example, it is easy to see how higher tax rates could be based upon multiples of this 1/3/4 structure, such as 2/6/8 or 3/9/12.

Figure 4:

Variable Tax Adjusted by Harvest Cycles per Year									
Cultivation Type	Harvest Cycles /Year	Sample Area (sq ft)	Yield (lbs)	Value @ $1,000/lb	Variable Tax Rate	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
Outdoors	1	1,000	100	$100,000	$1.00	$1,000	$1.00	$10.00	1.00%
Mixed Light	3	1,000	300	$300,000	$3.00	$3,000	$1.00	$10.00	1.00%
Indoors	4	1,000	400	$400,000	$4.00	$4,000	$1.00	$10.00	1.00%

As a general (but not universal) rule, larger operations typically have some ability to accommodate higher overhead, as their fixed costs are spread across more production. Conversely, a given tax rate may be harder for small cultivators to absorb, increasing the likelihood that small growers may give way to larger operations. This has been an important consideration for many counties that have large numbers of existing small growers who are concerned about large, well-financed operations moving into their county. To counter this, many of these counties have implemented "tiered" taxes, which provide a modestly higher tax rate for each larger cultivation class. The cannabis growers in Yolo County's permit program all fall into the Type 3 "Medium" class, and so there is no reason nor any benefit for applying a tiered structure here.

This model demonstrates both the ability to use a square footage tax as a proxy for either gross receipts (percent of value) or for unit of product (per pound) and for understanding how gross receipts relates to cultivation area. All three models are sound, and each has their advantages. A square footage tax has greater ability to incentivize or disincentivize certain cultivation practices by applying different rates to different cultivation types or sizes. However, if this is not the goal, then this flexibility is needless. Unless there is a desire to provide such incentives, then rates would typically be adjusted to create parity among the different cultivation types and sizes, which is the same effective outcome as a gross receipts tax or a tax per pound.

State Tax Considerations

To determine what local tax rates or structures might be most appropriate, they must be considered in the context of other taxes imposed by the State. Any local taxes will be in addition to those taxes applied through the Adult Use of Marijuana Act (AUMA), which imposes both a 15% excise tax on purchases of cannabis or cannabis products and a separate cultivation tax on harvested cannabis that enters the commercial market, as well as sales tax. Taxes are most commonly expressed as a percent of price or value, so some method of conversion is necessary to allow development of an appropriate cultivation tax based on square footage.

The State cultivation tax is set at a rate of $9.25 per ounce of dried flower or $2.75 per ounce of dried leaf. Because these rates are set per ounce, rather than as a percentage of price paid, the tax is the same whether the cultivator is producing commercial-grade cannabis at $500 per pound or top-grade cannabis at $2,500 per pound. The cultivator is generally responsible for payment of the tax, though that responsibility may be passed along to either a manufacturer or distributor via invoice. at the time the product is first sold or transferred. The distributor is responsible for collecting the tax from the cultivator upon entry into the commercial market, and remitting it to the Board of Equalization.

The cultivation tax of $9.25 per ounce of dried flower is equivalent to $148 per pound. Assuming an average wholesale market price for dried flower of $1,480 per pound, that $148 would be equal to 10% of value. However, some industry watchers project that competitive market forces enabled by legalization will bring the average price for cannabis down to around $1,000 per pound, or even less (cannabis prices vary greatly based on quality of the product)[vi]. While this is certainly a concern for cultivators, it may also be a concern to counties or cities which have a cultivation tax based on gross receipts, as they could see their tax revenues fall as the price goes down. If we apply the 9.25 per ounce to this lower average price, then it represents approximately 15% of value. We shall generally round up to 15% for purposes of the calculations in this analysis.

Cumulative Tax Rate on Cannabis

Converting a square footage cultivation tax to an equivalent tax rate allows us to more easily figure the cumulative tax burden that would be borne by the industry, as all taxes are expressed as a percent of value. At the cultivation level, we can add any local cultivation tax to the State's 14.8% to determine the total tax rate paid. If the county or city chose to set an equivalent tax rate of 7%, then the total tax rate on cultivation (before testing costs are applied) would be 21.8%, increasing the theoretical price from $1,000 per pound to $1,220 per pound. A 3% equivalent tax would put the total at 17.8%; a 10% rate would push the total to 24.8%.

AUMA requires that all dried cannabis flower or leaf must be tested for tetrahydrocannabinol (THC) and cannabidiol (CBD) content, contaminants, impurities and other factors before it can be sold to a manufacturer, distributor, dispensary or end user. Batch testing for raw cannabis requires a 2.3 gram sample per pound, which works out to a loss of 0.5% of the volume (the sample must be destroyed after testing). The draft regulations from the Bureau of Cannabis Regulation limit the maximum batch size to no more than 10 pounds. The costs for all of the tests as required under AUMA have not yet settled into a clear norm, but an online survey of a number of cannabis testing facilities in California suggest an average of $500 per 10-pound batch, or $50 per pound, which equals 5% of the $1,000 per pound price. The cost and loss of product amount to an additional 5.5% cost to the product, bringing the total cumulative tax rate on cultivation to 27.3%.

Testing is a semi-regulatory function mandated by the State to protect consumer health and safety, and which amounts to a State-imposed cost on the product. Unlike cultivation or manufacturing, testing does not create product or add value to the product, and unlike distributors or retailers, the testing laboratory is prohibited from having any ownership interest in the product. MAUCRSA requires that testing laboratories be completely independent from any other cannabis business, and prevents them from benefitting from, or having any interest in, the results of the test or the value of the product. In this way, testing laboratories are categorically different from any other cannabis business type. An analogy might be an independent auto shop that does State mandated smog tests for used car dealerships. They perform the test to State standards for a given price, but they don't benefit in any way from the sale of the car, or from its sale price. Given this, it arguably would be inconsistent to apply a tax to testing facilities.

Cannabis distributors are a fairly new part of the legal cannabis industry, and so we do not yet have data to determine the average markup they will add to the product. However, common distributor markups for other product types average in the range of 20%, and do not typically exceed 40%[vii]. For purposes of figuring the cumulative tax rate, we will assume an average markup of 30%, though we anticipate this will settle out closer to 20% over time.

Figure 5:

Cumulative Cannabis Taxes			
Category	**Amount**	**Increase**	**Cumulative Price**
Producer Price	$1,000/lb	$1,000	$1,000
State Cultivation Tax	$9.25/oz	$148	$1,148
County Tax	3.00%	$30	$1,178
Batch Testing	$50/lb, + 0.50%	$55	$1,233
Wholesale Price w/ Taxes		$1,233	
Total Tax at Wholesale		$233	
Tax as %		23.30%	
Distributor Markup	30.00%	$370	$1,603
County Tax	3.00%	$48	$1,651
Total Distributor Price		$1,651	
Total Taxes at Distributor		$281	
Total Tax as %		17.03%	
Retailer Markup	100.00%	$1,651	$3,302
County Tax	5.00%	$165	$3,467
State Excise Tax	15.00%	$495	$3,962
Total Retailer Price		$3,962	
Total Taxes at Retail		$941	
Total Tax as %		23.76%	
Sales Tax (non-medical)	8.25%	$327	$4,289
Total Taxes at Retail		$1,268	
Total Tax as %		29.57%	

Dispensary pricing norms are still developing, but reports from cultivators selling their product suggest that dispensaries commonly pay around $110 per ounce for medium quality flower, which they then sell for an average of $10 per gram. The current overabundance of cultivators in California allows dispensaries to buy low and sell high. For our analysis, we have assumed a dispensary markup of 100%, which is fairly consistent with the markup described, and tracks well with the fairly standard $10 per gram retail price.

Conversations with cannabis industry trade groups suggest that the cumulative tax rate on the end product should remain at or under 30%. Higher rates create too much price disparity between legal and illegal cannabis, making it harder for the regulated industry to compete with the black market. Higher local tax rates can also make a county or city less attractive to the industry, especially for manufacturers and distributors, which have greater flexibility in choosing where to locate. We believe that setting rates that adhere to this 30% rule will help keep the local cannabis industry competitive with other cultivators across California, thus encouraging the transition to a legal industry.

Figure 9 shows how the cumulative tax rate on cannabis builds as the product moves towards market (note: manufacturers are not included in this cumulative chart because there are simply too many possible products and too many variables to consider). The combination of taxes on cultivation hover around 23.30%. After the distributor's markup is figured in, the tax as a percentage of total price comes down to 17.03%, with a local tax of 3.0% included. Both the local tax and the State 15% excise tax are added to the final retail price, bringing the total amount of taxes paid to $941.48 per pound, or 23.76%. Non-medical purchases would pay an additional 8.25% retail sales tax, for a total tax paid of $1,268.38 per pound, and a total tax rate of 29.57%.

AUMA's 15% excise tax is measured by the average market price at retail (currently about $10 per gram, which works out to approximately $4,500 per pound at the one-gram unit price), instead of by the actual gross receipts. In this way, neither the cultivation tax nor the excise tax are based on the actual price paid for the product. However, this pricing tracks closely with our model. The Board of Equalization is still developing its methodology for determining the average market price and for collecting the tax from cannabis distributors.

Though a total tax of around 30% would almost certainly be considered high for any business or product, it is still within the range of taxes imposed by other states that have legalized cannabis[viii]. The State of Colorado charges combined State taxes of 23% on retail (non-medical) cannabis. Combined State and local sales taxes can range greatly from 2.9% to 11.2%, but are commonly around 4.9% in unincorporated areas. This would give us a comparison rate of 27.9%. Oregon originally imposed an excise tax of 25%, which was later reduced to 17%. Local jurisdictions are allowed to impose an additional 3% local tax, which would bring the total to 20%, but there is otherwise no additional state or local sales tax in Oregon. The State of Washington imposes a 37% excise tax on cannabis before any regular state or local sales taxes are applied. These are commonly around 8.1% in unincorporated areas, which would give a total of 45.1%.

General Economic Impacts

Discussion of regulating and taxing the cannabis industry can too often overshadow the larger jobs and economic development issues that typically accompany efforts to attract new industry. Word that a new business or industry is looking to bring hundreds of new jobs to a community is more commonly met with open arms and offers of tax incentives. The cannabis industry is perhaps completely unique in that the inherent jobs and economic development benefits are welcomed more grudgingly and met with the disincentive of special taxes.

As with any other industry, the cannabis industry does not exist in a vacuum. Those businesses that actually grow, process, manufacture, distribute and sell cannabis products support a wide variety of other businesses that may never touch the actual product itself. Cultivators support garden supply stores, green house manufacturers, irrigation suppliers, soil manufacturers, and a wide variety of contractors including building and construction, lighting and electrical, HVAC, permitting, and engineering. Manufacturers support many of these same businesses, plus specialized tooling and equipment manufacturers, and product suppliers for hardware, packaging, and labeling. All of these businesses support, and are supported by, a host of ancillary businesses such as bookkeepers, accountants, tax preparers, parcel services, marketing and advertising agencies, personnel services, attorneys, facilities maintenance, security services, and others.

The economic benefits are not limited to those in the cannabis industry, itself. Cultivators bring new money into the community by selling their products into a statewide market. Their profits and the salaries they pay move into the general local economy, supporting stores, restaurants, car dealerships, contractors, home sales and other businesses. In Humboldt County, a study done in 2011 found that at least $415 million dollars in personal income was entering the local economy annually from the cannabis industry, roughly equal to one quarter of the county's entire $1.6 billion economy.

While Humboldt is likely an outlier, research done by HdL for other clients suggests that other counties see similar, if smaller, economic inputs from this industry, with some in the range of $100 million dollars or more annually. As this industry adapts to a legal paradigm, the challenge for some counties will be mitigating and minimizing the economic loss as the black market slowly fades away.

Because of the emerging nature of this industry, it is currently populated primarily (but not solely) by small, independently-owned businesses. Numerous studies have demonstrated that locally-owned, independent businesses recirculate a far higher percentage of every dollar back into the local community than large, corporately-owned businesses do. The same economic development arguments that are used to support other independent, locally-owned businesses apply to this industry, too. The County should expect to see typical economic benefits from these new (or newly daylighted) businesses on par with other new businesses, separate from any tax revenue that may be generated.

Industry experts believe that California's current statewide production is five to eight times higher than the State's population consumes[ix], a figure derived from the SRIA done for CDFA's cannabis cultivation program. That assessment found that California's cannabis industry produces some 13.5 million pounds of cannabis per year, which would be enough to provide over half a pound of cannabis per year for every Californian 21 and over. However, the assessment also found that California's 4.5 million cannabis users only consume about 2.5 million pounds of cannabis per year. A separate study performed for the California Cannabis Industry Association put statewide consumption even lower, at 1.6 million pounds[x]. The majority of the cannabis produced in California is presumably supplying other states that do not have legalized cannabis.

The Bureau of Cannabis Control projects that more than half of the adult use purchases currently in the black market will transition to the legal market to avoid the inconvenience, stigma and risks of buying unknown product through an unlicensed seller[xi]. Essentially, the easier, cheaper and more reliable it is for consumers to access quality cannabis legally, the less reason they will have to purchase it through the black market. That same study projects that 60% of those currently in the legal, medical cannabis market will shift to the adult use market, for the reasons noted above. The availability of legal adult use cannabis is also anticipated to produce a small 9.4% increase in consumer demand.

Given these figures, counties should expect to see some increase in retail sales as these shifts occur in the market. More significantly, the existence of legally permitted cannabis retailers will allow a far greater portion of existing cannabis sales to be captured by legal (and tax-paying) retailers.

The shift from medical to adult use sales is not expected to change the overall volume of sales, only the category into which they fall. Once the legal, adult use market is properly functioning, it is anticipated to capture about 61.5% of the overall cannabis market in California. The legal medical cannabis market is projected to decline to just 9% of the overall market. The other 29.5% is expected to remain in the black market[xii].

These numbers only apply to the 1.6 million to 2.5 million pounds of cannabis that is consumed in California, representing the potential size of the legal cannabis market. If 29.5% of the cannabis consumed in California continues to come from the black market, then the size of the market for legal cannabis must be adjusted downward accordingly. This would reduce the size of the legal market in California to between 1.13 million and 1.76 million pounds. This is a very important figure to bear in mind when considering how much market share may be available for cannabis grown in Yolo County.

The limited size of California's legal cannabis market should be considered the primary limiting factor on potential production for any individual county or city. Using the larger figure of 1.76 million pounds, it would take just over 400 growers cultivating one acre each outdoors to provide all of the cannabis for every legal user in California. Using mixed-light cultivation, it would take less than 270 growers, each getting 3 harvests out of just 22,000 square feet, to supply the entire State.

Yolo is just one of 58 counties in California, but the anticipated 140,000 pound yield from the County's current 68 legal grows equals roughly 8% of the legal product for the entire State. This type of outsized production is not uncommon. Numerous individual counties in California have enough growers seeking cultivation permits that they could individually supply all of California's needs. An analysis of the 2016 CDFA survey shows that if everyone who responded to that survey obtained their desired cultivation permits, they could collectively produce over 40 million pounds of cannabis per year. This is almost 23 times the amount of legal cannabis the State's residents consume, and 3 times the total estimated production, including the black market.

Given this huge amount of overcapacity by growers seeking to enter California's legal market, we would urge the County to be exceedingly cautious in its expectations about any ability to expand beyond the current 68 growers. This is not to say that the County should cap the number of growers at any arbitrary number. Rather, the County should be judicious in the amount of time and resources spent permitting a larger number of cultivators, when a higher number may just result in a higher failure rate as growers succumb to a market that has grossly exceeded its saturation point.

Enforcement and Permitting Costs

Despite the legalization of cannabis, even jurisdictions which ban commercial cannabis businesses may still see an increase in cannabis activities. Neither the legal industry nor the black market operates as a closed loop within any given county. If a county or city chooses to ban commercial cannabis businesses, it should be assumed that the local demand will be met either by residents purchasing cannabis legally in neighboring jurisdictions or by the continuing black market. Cultivators, manufacturers, and distributors which are disallowed in one location have the option of moving to a neighboring or nearby jurisdiction, from which they will continue to supply the local market. Retailers are somewhat less able to jurisdiction shop, since they are bound by proximity to the market they wish to serve. However, they still may shop between the unincorporated county, cities within that county, or in neighboring jurisdictions to serve a specific market.

Banning commercial cannabis businesses may also result in bolstering the illegal industry by increasing the share of demand that is met by the black market instead of a local regulated market. This drives up the profits for black market operators, making them more competitive against the legalized market. All of the community impacts from the black market continue as before, and may even be exacerbated by an increase of illegal cannabis activity. With this comes all of the existing costs to government services, including law enforcement, healthcare, child services, and environmental control, with no additional resources from the state or local taxes.

Some counties in the region have analyzed the cost of maintaining a ban by determining the number of staff resources required by each department to be effective, and estimating the number of business that will continue to operate illegally. In one county that cost was estimated to require approximately 13 full-time equivalent (FTE) employees at a cost of $3.1 million annually[4]. In another analysis, that county evaluated their actual costs for enforcing their existing ban and determined that it cost an average of $25,000 to $50,000 per operator to effectively shut down and prosecute the illegal businesses.

We do not have data to tell us how many cannabis-related businesses are currently operating illegally in Yolo County. However, if we assume that perhaps 20% of the 346 potential cannabis businesses identified in the CDFA survey are currently operating then, at the cost range above, the County could expect to spend between $1.4 million and $3.5 million to enforce a ban against some 70 illegal cannabis businesses.

Under a ban, all commercial cannabis activities remain criminal violations, requiring primary enforcement by the Sheriff's office. The full cost (salary and benefits) for a 40-hour, POST-certified Deputy Sheriff typically ranges from around $100,000 per year to over $200,000 per year (depending on hours, years of experience, overtime and other factors). Additional costs are borne by the office of the District Attorney. Both the Sheriff's Office and the Office of the District Attorney are paid for primarily from the County's general fund.

From a fiscal standpoint, choosing to permit and regulate cannabis businesses at the local level opens up opportunities to reduce general fund liabilities by shifting them onto the regulated industry, and away from the taxpayers generally. The legal, regulated industry pays its own way (in whole or in part) through fees, thus reducing both the burden on law enforcement and the drain on the general fund. As with any other industry, the County has the discretion to charge full cost recovery or to subsidize the permitting costs if it believes that doing so would serve the public interest. Whether or not the County is successful

[4] HdL did not receive permission to identify these clients for this report.

in recovering all of these costs should be a deliberative decision, and is not a question that is unique to this industry.

Though the cost of regulating this industry should be borne by the permit applicants, there may be a need to increase staffing upfront to accommodate the additional workload. Permitting 75 to 200 businesses of this type may well require additional staff. Staffing up for this work would likely have to happen before the permits can be processed, and before the fees can be collected. Though ultimately permit processing should function as an enterprise, there will likely be a need to provide some advance funding through some other means such as a loan from the General Fund.

Permitting fee costs are affected by a number of variables such as the number of permits authorized, the level of regulatory oversight, and the types of commercial cannabis activities being permitted. The two Northern California counties mentioned above conducted preliminary costs analyses to determine the projected fees associated with implementing a robust regulatory program for legal cannabis businesses. The first of these counties determined the overall costs of such a program would be approximately $3.1 million, with fees in the range of $15,500 to $25,000 per permit, depending upon the number of permits being processed (processing more permits spreads certain fixed departmental costs across more applicants, reducing the cost per permit). The other county projected their overall cost would be $3.5 million, with fees in the range of $22,000 to $41,700.

These costs include but are not limited to costs for processing fees and applications, inspections and enforcement of the regulatory requirements, and annual regulatory fees related to health inspections, environmental inspections, Agricultural Commissioner inspections for pesticides and weights and measures, Tax Collector audits, and law enforcement staffing to conduct operator/employee backgrounds checks and to assist other department staff when necessary with enforcement assistance. In addition, the County may need to partner with fire districts and other agencies to conduct safety inspections, which may add to the cost for the permittee.

Regulating the industry also presents the opportunity to generate new general fund revenues through taxes on legal, commercial cannabis activities. Though there are a variety of ways to structure cannabis taxes, and a wide range of rates that can be applied, these taxes have the potential to deliver millions of dollars to county or city coffers, which can be used for any public purpose. Commonly, taxes on legal cannabis businesses are used to defray the costs of enforcement against the remaining black market as well as other costs associated with the industry, including environmental cleanup and Health and Human Services programs. In this way, taking a regulatory approach to cannabis allows local governments to shift costs away from the general fund, to develop substantial new revenue sources, and to make the legal, regulated industry pay its own way through fees.

Attrition Due to High Tax Rates

The models presented in the revenue projection that follow do not account for any attrition factor as the tax rate increases. An attrition factor anticipates that for every increase in the local tax rate (as a percent of value, or equivalent), there is some reduction in the rate of return due to growers choosing to move to more welcoming communities, businesses failing due to shrinking margins, or growers simply choosing to stay in the black market. This concept is admittedly speculative, as there is not yet any real data to suggest what the actual rate may be, but we believe the mechanism is sound.

As local tax rates go up, the County becomes incrementally less competitive with other counties and cities. At some point, the cost of paying the tax outweighs the cost of picking up and moving to a jurisdiction with a more welcoming regulatory and tax climate. At some point, too, tax rates reduce margins to an unsustainable level for those businesses which are least stable (typically small “Mom n’ Pop” businesses), pushing them into failure. And, lastly, at some point the overall tax and regulatory burden makes the whole idea of moving from the black market into the legal market simply unattractive for those growers who are on the fence. This last point is likely more of an issue for regions like Humboldt, Mendocino or Santa Cruz, which have large, well-established industries.

The nominal figures in these scenarios all assume that the same number of cultivators will seek and obtain permits, regardless of the tax rates imposed, and that they will all succeed in the regulated market, regardless of how those taxes affect their ability to compete. This seems very unlikely. Higher tax rates should be assumed to have a dampening effect on both permit applications and on the ability of cultivators to succeed. The County should expect to see a reduction in the number of permit applications as the tax rate climbs.

We do not yet have actual data to tell us what the actual attrition rate will be, but our inability to meaningfully quantify that impact doesn’t mean it isn’t there, or that it isn’t significant. As applied to cultivation, we anticipate that this attrition would begin to be noticeable at tax rates of around 5%, increasing marginally at around 7%, with a significant drop off above 10%. We would strongly caution the County from assuming that a linear increase in the tax rate will result in a corresponding linear increase in tax revenue.

Revenue Projections

The revenue projections that follow assume that all outdoor cultivation sites are a full acre in size (43,560 square feet), and that all mixed-light cultivation sites are 22,000 square feet. This analysis assumes that all outdoor cultivation yields one harvest per year, and that mixed-light cultivation yields 3 harvests per year. We also assume that the average yield is 0.0425 pounds per square foot, as derived from the County's current 140,000 pound total.

We have applied these assumptions to 3 different scenarios. The first scenario is based upon the currently existing 68 grows, with 53 outdoors and 15 mixed-light, to provide a baseline. The second scenario assumes that there are 75 permitted grows, with 23 of them (roughly 30%) being outdoor, and 52 of them (about 70%) being mixed light. The third scenario assumes that the County allows 200 mixed-light cultivation sites, and no outdoor cultivation.

To each of these scenarios, we have applied a variety of tax structures and rates:

- A square footage tax at rates of $3, $5, $7 and $10 per square foot for outdoor cultivation, and corresponding rates of $9, $15, $21 and $30 per square foot for mixed-light cultivation;
- A gross receipts tax at rates of 3%, 5%, 10% and 15%;
- A per pound tax at rates of $50, $70, $100 and $125 per pound.

It's important to note that these are mathematical projections based upon the assumptions above. These projections consider the amount of revenue that could be generated by each of these scenarios as an "if/then" equation with a number of variables; as in "IF there are N number of growers producing P number of pounds at R tax rate, THEN the County could see X amount of revenue." However, these projections do not consider the likelihood of any of these scenarios coming to pass, as they are each affected by a number of forces that are difficult to quantify.

For example, these projections do not consider whether an effort to convert the local industry from predominantly outdoors to predominantly or wholly mixed-light might result in more growers seeking permits and succeeding in the market, or whether it will reduce those numbers as these established growers migrate to other, nearby jurisdictions where they can cultivate in their preferred manner.

Similarly, these projections do not consider whether one tax method (square footage, for example) might be more advantageous to the industry than another (gross receipts or per pound), resulting in a greater likelihood of successfully growing the industry from the current 68 cultivation sites up to 200.

As discussed in the section on attrition, these projections do not consider the impact that higher tax rates are likely to have on local growers' ability to successfully compete in a statewide market with growers from other jurisdictions with much lower tax rates.

Lastly, these projections do not consider the likelihood of local cannabis growers being able to successfully compete in a legal market that is already overly-saturated. With far more growers statewide seeking to produce far more product than California consumes, there is no guarantee that even a small number of growers from Yolo County will succeed in claiming market share, regardless of local tax rates. With so much over-supply, the ability to compete and succeed in a highly competitive marketplace will likely depend more on business savvy, marketing and financing than on local regulations.

These are all important considerations which are discussed elsewhere in this report. As with the discussion of attrition, our inability to meaningfully quantify these effects does not mean they do not exist, or that their impact is not significant.

Square Footage Tax

Figure 6 projects revenues from a square footage tax, with four different rates applied to the three scenarios. Assuming the current distribution of 68 growers, a tax structure of $3 per square foot for outdoor cultivation and $9 per square foot for mixed-light cultivation would generate around $9.9 million in revenue for the County. These rates would be roughly equivalent to $70.59 per pound, or 7.06% of gross receipts.

At the high end, a tax structure of $10 per square foot for outdoor cultivation and $30 per square foot for mixed-light could potentially generate as much as $33 million for the County, assuming that there is not substantial attrition due to growers moving to other jurisdictions, losing market share due to higher prices, or failing out of the market altogether. These higher rates would be roughly equivalent to a tax of $235.29 per pound, or a gross receipts tax of 23.53%.

Applying the same 4 square footage tax rates to a hypothetical 75 grow scenario, with 23 outdoors and 52 mixed-light, the $3/$9 (outdoor/mixed/light) rate structure would generate $13.3 million, while the higher $10/$30 rates would potentially generate $44.3 million. The same caveats apply to these higher rates as in the previous example, as well as in all the scenarios that follow.

When applied to the hypothetical scenario of 200 mixed-light grows only, the $9 per square foot tax rate would potentially generate over $39 million in revenue, while the higher $30 rate could theoretically generate $132 million. As noted previously, this figure is simply a mathematical formula based on a series of assumptions: that the County is able to successfully convert 68 predominantly outdoor grows to all mixed-light; that the County is able to expand upon this number and increase this sector up to 200 mixed light grows of 22,000 square feet each; that all 200 of these growers are able to succeed in an over-saturated marketplace; and that these higher rates will not result in any attrition due to any of the factors noted above. We would encourage the County to apply a fair degree of skepticism when considering these assumptions.

Figure 6:

Square Footage Tax - Current 68 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax Per Square Foot	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
$3/sf	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$3.00	$6,926,040	$3.00	$70.59	7.06%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$9.00	$2,970,000	$3.00	$70.59	7.06%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$9,896,040**			
$5/sf	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$5.00	$11,543,400	$5.00	$117.65	11.76%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$15.00	$4,950,000	$5.00	$117.65	11.76%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$16,493,400**			
$7sf	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$7.00	$16,160,760	$7.00	$164.71	16.47%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$21.00	$6,930,000	$7.00	$164.71	16.47%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$23,090,760**			
$10/sf	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$10.00	$23,086,800	$10.00	$235.29	23.53%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$30.00	$9,900,000	$10.00	$235.29	23.53%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$32,986,800**			

Square Footage Tax - 75 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax Per Square Foot	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
$3/sf	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$3.00	$3,005,640	$3.00	$70.59	7.06%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$9.00	$10,296,000	$3.00	$70.59	7.06%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$13,301,640**			
$5/sf	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$5.00	$5,009,400	$5.00	$117.65	11.76%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$15.00	$17,160,000	$5.00	$117.65	11.76%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$22,169,400**			
$7sf	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$7.00	$7,013,160	$7.00	$164.71	16.47%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$21.00	$24,024,000	$7.00	$164.71	16.47%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$31,037,160**			
$10/sf	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$10.00	$10,018,800	$10.00	$235.29	23.53%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$30.00	$34,320,000	$10.00	$235.29	23.53%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$44,338,800**			

Square Footage Tax - 200 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax Per Square Foot	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
$3/sf	Outdoors	0	43,560	0	1	0	$0	$3.00	$0	$3.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$9.00	$39,600,000	$3.00	$70.59	7.06%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$39,600,000**			
$5/sf	Outdoors	0	43,560	0	1	0	$0	$5.00	$0	$5.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$15.00	$66,000,000	$5.00	$117.65	11.76%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$66,000,000**			
$7sf	Outdoors	0	43,560	0	1	0	$0	$7.00	$0	$7.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$21.00	$92,400,000	$7.00	$164.71	16.47%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$92,400,000**			
$10/sf	Outdoors	0	43,560	0	1	0	$0	$10.00	$0	$10.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$30.00	$132,000,000	$10.00	$235.29	23.53%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$132,000,000**			

Per Pound Tax

Figure 7 projects revenues from a per-pound tax. We have used the same three scenarios, but applied tax rates of $50, $70, $100 and $125 per pound. Because these rates are applied to the product, rather than the cultivation area, there is no need for the tax rates to distinguish between outdoor cultivation and mixed-light cultivation. The “outdoor” and “mixed-light” categories are shown in these tables only for consistency and to show how the per-pound rates compare with square footage.

When applied to the County’s current scenario of 68 growers, a tax structure of $50 per pound would generate a little over $7 million in revenue for the County. This rate would be roughly equivalent to a gross receipts tax of 5.0%, or to a square footage tax with a base rate of $2.13 per square foot per cycle ($2.13 for outdoor cultivation, and $6.38 for mixed-light).

At the high end, a tax rate of $125 per pound could theoretically generate over $17 million for the County. Again, this assumes that there is not substantial attrition due to any combination of the factors we have discussed previously. The $125 per pound rate would be roughly equivalent to a gross receipts tax of 12.50%, or a square footage tax of $5.31 per square foot per cycle.

Applying these same rates to the 75 grow scenario (23 outdoors, 52 mixed-light), a tax of $50 per pound would generate around $9.4 million, while the $125 rate would potentially generate $23.5 million.

With the hypothetical scenario of 200 mixed-light grows, a tax rate of $50 per pound would potentially generate over $28 million in revenue, while the highest rate of $125 per pound could generate over $70 million. Again, significant caveats apply to any of these scenarios that depend on higher tax rates, higher numbers of growers, or conversion of the industry from one type of cultivation practice to another.

Figure 7:

Per Pound Tax - Current 68 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield @ 0.0425 lbs/sf	Value @ $1,000/lb	Tax Per Pound	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax as Percent of Value
$50 /pound	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$50.00	$4,905,945	$2.13	$2.13	5.00%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$50.00	$2,103,750	$6.38	$2.13	5.00%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$7,009,695**			
$70 /pound	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$70.00	$6,868,323	$2.98	$2.98	7.00%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$70.00	$2,945,250	$8.93	$2.98	7.00%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$9,813,573**			
$100 /pound	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$100.00	$9,811,890	$4.25	$4.25	10.00%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$100.00	$4,207,500	$12.75	$4.25	10.00%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$14,019,390**			
$125 /pound	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	$125.00	$12,264,863	$5.31	$5.31	12.50%
	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	$125.00	$5,259,375	$15.94	$5.31	12.50%
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$17,524,238**			

Per Pound Tax - 75 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax Per Pound	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax as Percent of Value
$50 /pound	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$50.00	$2,128,995	$2.13	$2.13	5.00%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$50.00	$7,293,000	$6.38	$2.13	5.00%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$9,421,995**			
$70 /pound	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$70.00	$2,980,593	$2.98	$2.98	7.00%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$70.00	$10,210,200	$8.93	$2.98	7.00%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$13,190,793**			
$100 /pound	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$100.00	$4,257,990	$4.25	$4.25	10.00%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$100.00	$14,586,000	$12.75	$4.25	10.00%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$18,843,990**			
$125 /pound	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	$125.00	$5,322,488	$5.31	$5.31	12.50%
	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	$125.00	$18,232,500	$15.94	$5.31	12.50%
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$23,554,988**			

Per Pound Tax - 200 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax Per Pound	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax as Percent of Value
$50 /pound	Outdoors	0	43,560	0	1	0	$0	$50.00	$0	$0.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$50.00	$28,050,000	$6.38	$2.13	5.00%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$28,050,000**			
$70 /pound	Outdoors	0	43,560	0	1	0	$0	$70.00	$0	$0.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$70.00	$39,270,000	$8.93	$2.98	7.00%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$39,270,000**			
$100 /pound	Outdoors	0	43,560	0	1	0	$0	$100.00	$0	$0.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$100.00	$56,100,000	$12.75	$4.25	10.00%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$56,100,000**			
$125 /pound	Outdoors	0	43,560	0	1	0	$0	$125.00	$0	$0.00	$0.00	0.00%
	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	$125.00	$70,125,000	$15.94	$5.31	12.50%
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$70,125,000**			

Gross Receipts Tax

Figure 8 projects the potential revenues that could be generated from a gross receipts tax. Here we have applied rates of 3%, 5%, 10% and 15% to the same three scenarios.

When applied to the County's current scenario of 68 growers, a tax of 3% on the gross receipts of the business would generate around $4.2 million in revenue. This rate would be roughly equivalent to a tax of $30 per pound, or to a square footage tax with a rate of $1.28 per square foot for outdoor cultivation, and $3.83 for mixed-light.

At the high end, a tax rate of 15% could generate over $21 million for the County, which is roughly equivalent to a rate of $150 per pound, or a square footage tax of $6.38 per square foot per cycle.

Under the 75 grow scenario, the lowest rate of 3% would generate around $5.6 million, while the highest rate of 15% would generate over $28 million.

With the 200 grow scenario, the 3% rate would potentially generate $16.8 million in revenue, while the 15% rate could generate over $84 million.

Figure 8:

Gross Receipts Tax - Current 68 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax as Percent of Value	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax per Pound
	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	3%	$2,943,567	$1.28	$1.28	$30.00
3%	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	3%	$1,262,250	$3.83	$1.28	$30.00
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$4,205,817**			
	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	5%	$4,905,945	$2.13	$2.13	$50.00
5%	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	5%	$2,103,750	$6.38	$2.13	$50.00
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$7,009,695**			
	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	10%	$9,811,890	$4.25	$4.25	$100.00
10%	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	10%	$4,207,500	$12.75	$4.25	$100.00
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$14,019,390**			
	Outdoors	53	43,560	2,308,680	1	98,119	$98,118,900	15%	$14,717,835	$6.38	$6.38	$150.00
15%	Mixed Light	15	22,000	330,000	3	42,075	$42,075,000	15%	$6,311,250	$19.13	$6.38	$150.00
	Totals	**68**		**2,638,680**		**140,194**	**$140,193,900**		**$21,029,085**			

Gross Receipts Tax - 75 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax as Percent of Value	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax per Pound
	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	3%	$1,277,397	$1.28	$1.28	$30.00
3%	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	3%	$4,375,800	$3.83	$1.28	$30.00
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$5,653,197**			
	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	5%	$2,128,995	$2.13	$2.13	$50.00
5%	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	5%	$7,293,000	$6.38	$2.13	$50.00
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$9,421,995**			
	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	10%	$4,257,990	$4.25	$4.25	$100.00
10%	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	10%	$14,586,000	$12.75	$4.25	$100.00
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$18,843,990**			
	Outdoors	23	43,560	1,001,880	1	42,580	$42,579,900	15%	$6,386,985	$6.38	$6.38	$150.00
15%	Mixed Light	52	22,000	1,144,000	3	145,860	$145,860,000	15%	$21,879,000	$19.13	$6.38	$150.00
	Totals	**75**		**2,145,880**		**188,440**	**$188,439,900**		**$28,265,985**			

Gross Receipts Tax - 200 Permit Scenario												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.0425 lbs/sf)	Value @ $1,000/lb	Tax as Percent of Value	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax per Pound
	Outdoors	0	43,560	0	1	0	$0	3%	$0	$0.00	$0.00	$0.00
3%	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	3%	$16,830,000	$3.83	$1.28	$30.00
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$16,830,000**			
	Outdoors	0	43,560	0	1	0	$0	5%	$0	$0.00	$0.00	$0.00
5%	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	5%	$28,050,000	$6.38	$2.13	$50.00
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$28,050,000**			
	Outdoors	0	43,560	0	1	0	$0	10%	$0	$0.00	$0.00	$0.00
10%	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	10%	$56,100,000	$12.75	$4.25	$100.00
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$56,100,000**			
	Outdoors	0	43,560	0	1	0	$0	15%	$0	$0.00	$0.00	$0.00
15%	Mixed Light	200	22,000	4,400,000	3	561,000	$561,000,000	15%	$84,150,000	$19.13	$6.38	$150.00
	Totals	**200**		**4,400,000**		**561,000**	**$561,000,000**		**$84,150,000**			

75 Permit Scenario at 1 Pound per 10 Square Feet Yield

The tables for our revenue projections have all assumed a production rate of 0.0425 pounds of cannabis per square foot of canopy, or about 23.5 square feet per pound. This figure is based upon the current yield of 140,000 pounds from the County's current 68 growers, assuming that all 53 outdoor grows are 1 acre in size (43,560 square feet) and all 15 mixed-light grows are 22,000 square feet, and assuming that all outdoor cultivation yields one harvest cycle per year while all mixed-light grows yield 3. The production rate is determined by multiplying the number of grows times the square footage times the number of cycles per year, then dividing the amount of production by this number.

A more typical rate for making revenue projections is 0.1 pound per square foot, or 10 square feet per pound, as derived from the 2010 Rand study[xiii]. While this figure is commonly used and has been corroborated by a number of industry sources, it is a proxy for case-specific data. In the case of Yolo County, we have field-derived data that is specific to Yolo's current growers.

Figure 9 provides revenue estimates for the 75 permit scenario based upon this higher 0.1 pound per square foot figure, for comparison purposes. It is possible that Yolo's cannabis growers may be able to increase their production yields in the future by modifying some of their methods. The County's interest in converting this industry from predominantly outdoor to predominantly or solely mixed-light might help to reduce impacts from pesticide drift, or possibly even help address the high levels of boron in the water by shifting the water sources being used.

Under the anticipated distribution of 75 permits (52 mixed-light and 23 outdoors), the current production rate of 0.0425 pounds per square foot would yield 188,440 pounds of cannabis per year. At the higher production rate of 0.1 pounds per square foot, this same distribution would yield 443,388 pounds.

At this higher production rate, a square footage tax could generate between around $13 million and $33 million in annual revenues to the County, depending upon the tax rate being applied. A per-pound tax would potentially generate between $25 million and $55 million per year. Applying the gross receipts rates from our analysis would generate from $13 million to over $66 million.

Figure 9:

75 Permit Scenario @ 1 Pound per 10 Square Feet - Square Footage Tax												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.1 lbs/sf)	Value @ $1,000/lb	Tax Per Square Foot	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
$3/sf	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$3.00	$3,005,640	$3.00	$30.00	3.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$9.00	$10,296,000	$3.00	$30.00	3.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$13,301,640**			
$5/sf	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$5.00	$5,009,400	$5.00	$50.00	5.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$15.00	$17,160,000	$5.00	$50.00	5.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$22,169,400**			
$7sf	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$7.00	$7,013,160	$7.00	$70.00	7.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$21.00	$24,024,000	$7.00	$70.00	7.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$31,037,160**			
$10/sf	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$10.00	$10,018,800	$10.00	$100.00	10.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$30.00	$34,320,000	$10.00	$100.00	10.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$44,338,800**			

75 Permit Scenario @ 1 Pound per 10 Square Feet - Per Pound Tax												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.1 lbs/sf)	Value @ $1,000/lb	Tax Per Pound	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax as Percent of Value
$50 /pound	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$50.00	$5,009,400	$5.00	$5.00	5.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$50.00	$17,160,000	$15.00	$5.00	5.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$22,169,400**			
$70 /pound	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$70.00	$7,013,160	$7.00	$7.00	7.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$70.00	$24,024,000	$21.00	$7.00	7.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$31,037,160**			
$100 /pound	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$100.00	$10,018,800	$10.00	$10.00	10.00%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$100.00	$34,320,000	$30.00	$10.00	10.00%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$44,338,800**			
$125 /pound	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	$125.00	$12,523,500	$12.50	$12.50	12.50%
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	$125.00	$42,900,000	$37.50	$12.50	12.50%
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$55,423,500**			

75 Permit Scenario @ 1 Pound per 10 Square Feet - Gross Receipts Tax												
Tax Rate	Cultivation Type	# of Licenses	Max Area	Total Area (sf)	Harvest Cycles /Year	Yield (@ 0.1 lbs/sf)	Value @ $1,000/lb	Tax as Percent of Value	Total Annual Tax Paid	Tax Per Square Foot	Tax per SF/Cycle	Tax per Pound
3%	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	3%	$3,005,640	$3.00	$3.00	$30.00
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	3%	$10,296,000	$9.00	$3.00	$30.00
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$13,301,640**			
5%	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	5%	$5,009,400	$5.00	$5.00	$50.00
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	5%	$17,160,000	$15.00	$5.00	$50.00
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$22,169,400**			
10%	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	10%	$10,018,800	$10.00	$10.00	$100.00
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	10%	$34,320,000	$30.00	$10.00	$100.00
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$44,338,800**			
15%	Outdoors	23	43,560	1,001,880	1	100,188	$100,188,000	15%	$15,028,200	$15.00	$15.00	$150.00
	Mixed Light	52	22,000	1,144,000	3	343,200	$343,200,000	15%	$51,480,000	$45.00	$15.00	$150.00
	Totals	**75**		**2,145,880**		**443,388**	**$443,388,000**		**$66,508,200**			

Summary and Recommendations

The revenue projections in this analysis suggest that a tax on cannabis cultivation in Yolo County could conceivably generate anywhere between $4 million and $132 million dollars, depending upon the tax structure, the rates applied, the number of cultivation sites, the cultivation methods being used, and the general production rate of the County's growers. Of these five factors, it would be too easy to focus on the type and the amount of any tax as the most important issues that will determine the level of revenue that might be generated for the County. We would encourage the County to look at the larger picture.

The County currently has 68 cannabis growers who are in the process of becoming permitted, which will allow them to sell their product into California's legal cannabis market. These growers are currently producing 140,000 pounds of cannabis per year, which could be as much as 12% of the amount of legal cannabis consumed in California. Under the 75 grow scenario in this report, the County's growers could produce 188,000 pounds of cannabis, or as much as 17% of the cannabis consumed statewide. Under the 200 grow scenario, Yolo County's growers could produce 561,000 pounds, or as much as half of the legal cannabis for the entire statewide market. If growers were able to improve their productivity rates closer to the 0.1 pound per square foot metric discussed here, they could more than double that figure.

As with many counties in California, Yolo has likely already reached its saturation point for legal cannabis cultivation. There are numerous other counties that individually have enough growers seeking permits that they could provide more cannabis, perhaps even far more, than California's cannabis users consume. Given this, increasing the number of legal cannabis growers in the County seems highly unlikely. The limiting factor here is not regulation or taxes, but rather the limits of the market.

We believe that Yolo County's cannabis cultivation industry is more likely to see contraction in coming years, rather than expansion. If the County wishes to hold on to these businesses for the jobs and inherent economic benefits they bring, as well as the potential tax revenue they could provide, then policies, regulations and taxes should be developed with an eye towards supporting existing growers in the face of a highly competitive market that has surpassed its saturation point. With cultivation taxes above the 5% to 7% range, it is hard to keep the cumulative rate below 30%. We would recommend that the County look at tax rates that are low enough to allow the existing industry to compete in the statewide marketplace.

The County has expressed an interest in converting the existing industry from predominantly outdoors cultivation to predominantly or solely mixed-light. While there may be substantial community benefits to be gained from this conversion, we would encourage the County to consider how this transition might happen, and how it is likely to affect growers who have already made substantial investments in property, equipment and infrastructure based upon their current practices.

While local taxes on cannabis production are increasingly common in California, there is not yet an established norm. HdL has commonly recommended cultivation taxes based on square footage, as they are simple, predictable and easy to administer. With vertically integrated cannabis businesses, however, it may be difficult to apply different tax mechanisms to different parts of the business. Allowing cannabis growers to process, manufacture and distribute their own product, should they so choose, will help them to be more competitive in the marketplace, thus decreasing the likelihood of failure. A single, all-encompassing tax on gross receipts may allow greater flexibility for cultivators to structure their business more competitively.

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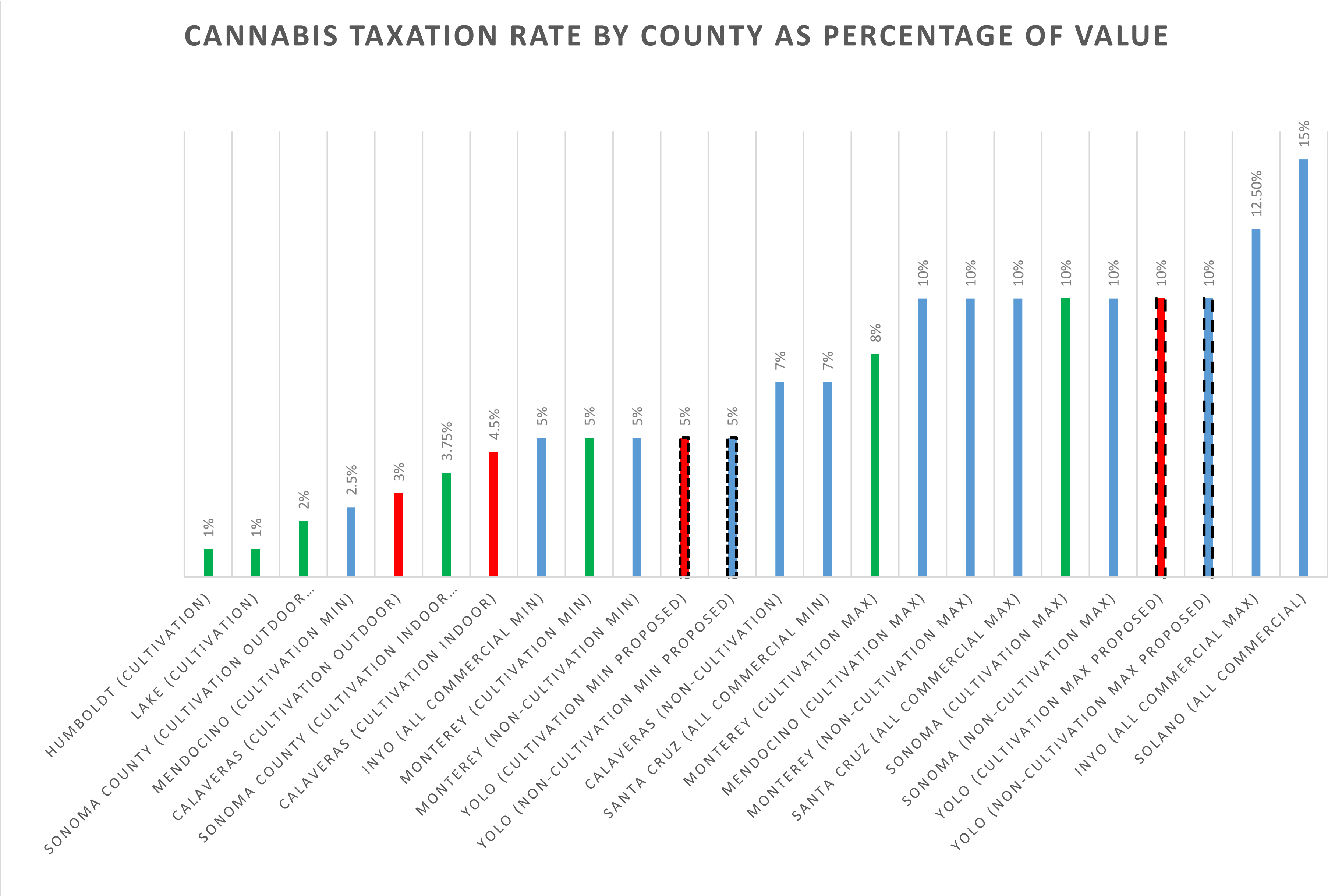
[xii] *"Economic Costs and Benefits of Proposed Regulations for the Implementation of the Medical Cannabis Regulation and Safety Act (MCRSA)"* (February 23, 2017) University of California Agricultural Issues Center

[xiii] John P. Caulkins (2010) *"Estimated Cost of Production for Legalized Cannabis",* the Rand Drug Policy Research Center

Square footage taxes are in green, weight based taxes in red, and gross receipts taxes in blue.



Cannabis Taxation in Yolo County

Analysis and Recommendations

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October 31, 2017

Introduction

The Yolo County Cannabis Coalition (the "YCC") is a local nonprofit trade organization dedicated to benefiting the common interests of its membership, promoting commercial cannabis development, and strengthening the greater community of Yolo County. The YCC envisions growth of a cooperative, integrated, and community-focused Cannabis Industry in the County that sets the standard for innovative cannabis policy solutions. The organization currently represents over 50% of the local industry via paid membership, as well as numerous non-industry stakeholders such as local business owners and individual advocates of sensible cannabis policies.

Yolo County has expressed interest in crafting a cannabis tax initiative for inclusion on the June 2018 Ballot. The YCC understands that the implementation of a workable taxation model is a necessary step to creating a local industry that is of maximum benefit to both the local community and local cannabis businesses. The YCC believes that the optimal tax ordinance is one that supplies the local government with annual funds for not only enforcement of cannabis regulations, but other county programs as well, while also rendering the local industry competitive in the marketplace to ensure the continued viability and stability of the local industry through impending market volatility.

Towards the goal of securing an intelligent and sustainable tax policy in Yolo County, the YCC has performed broad and detailed analyses of state and local tax rates, policy studies, market forecasts, etc. This memorandum outlines the YCC's research findings, conclusions, and suggestions in regards to tax policy in the County of Yolo.

Method

The YCC believes that the taxation model that provides the maximum benefit to Yolo as a whole is one that taxes the local industry to a proportionately balanced and reasonable extent while achieving the following goals:

1. Combating the local illicit market by rendering the local legal market economically competitive with the local illicit market
2. Combating the local illicit market by funding law enforcement and criminal prosecution
3. Adequately funding community programs outside of the cannabis program
4. Ensure continued tax production by rendering Yolo cannabis products competitive in the market with cannabis products from other areas (i.e. ensuring local businesses stay in business)
5. Employing a method and system of taxation that is not unduly burdensome or complicated for ease of administration

In order to identify taxation models that meet the above criteria, the YCC has used the following method to analyze tax options for Yolo County:

1. Identify Enforcement Target Amount
    a. Annual funds required by the Sheriff's Office for enforcement?
    b. Annual funds required by the DA's Office for enforcement?
2. Identify "Other Government Programs" Target Amount
    a. What programs should cannabis tax dollars fund outside of the cannabis program?
    b. Annual funds required to fund these programs?
3. Market Analysis
    a. What cannabis-producing areas will Yolo need to be competitive with in the market, and what will the market and market prices look like?
    b. What are the costs of production and tax rates in other areas with which Yolo must remain competitive?
4. Identify Tax Ceiling
    a. How much taxation could the local industry bear before it is rendered non-competitive with the identified competition?
5. The Question
    a. Can Yolo's annual tax revenue target be met with a tax equal to or lower than the identified maximum tax ceiling?

Analysis

Enforcement Target

The YCC approached the Yolo County Sheriff's and District Attorney's Offices to identify a target amount of funding these offices would require to both adequately enforce compliance of legal operations, and sufficiently increase criminal enforcement of the cannabis illicit market. To date, the YCC has not been able to secure a meeting with the DA, and as such, while the below fiscal needs are accurate for the Sheriff, the fiscal needs for the DA have been estimated.

The Sheriff's Office stated the following needs:

1. Two additional Cannabis Task Force Deputies towards the enforcement of legal operators, totaling $461,224 annually, (these costs to be paid via licensing fees)
2. Two additional officers and two patrol cars to bolster criminal enforcement of cannabis illicit market, totaling $461,224 annually (to be paid via Cannabis Industry taxes)

Assuming that the District Attorney's Office would have fiscal needs of equal or lesser amount, the total fiscal need via tax dollars for adequate enforcement would be a maximum of $922,448 annually.

Government Programs Target

Representatives of the YCC approached all five supervisors as well as numerous staff members and private citizens in regards to what programs they believed should be funded through cannabis tax dollars, and what annual amount would be sufficient to do so.

The YCC found that all parties generally agreed that cannabis tax dollars should be applied to the following causes:

1. Early childhood and family development
2. Road maintenance and infrastructure
3. Community support programs, such as mental health programs, food programs, etc.

In general, when the YCC asked how much cannabis tax dollars should go towards these programs annually, whether the person asked was a public official, department head, or private citizen, the answer from most parties was generally found to be in the vicinity of a minimum of $2 million.

Market Analysis

A state-commissioned Economic Impact Report on the California Cannabis Industry estimated the total annual state demand for cannabis flower to be 2.6 million pounds[1]. Assuming annual production rates of 2,500 lbs per acre (combined outdoor and greenhouse production), the cultivation acreage needed to meet the combined demand of the post-2018 state legal medical and recreational flower markets would be 1,050 acres. The YCC found that when accounting for the consumption of manufactured cannabis products and post-legalization increases of demand, most experts believe that it will take 2,000 to 3,000 acres of cannabis production statewide to meet demand.

In addition, state officials, Cannabis Industry representatives and advocates consistently estimate that California currently contains between 40,000 and 60,000 farms.

Through contact with cannabis advocacy groups and trade associations in four other counties, the YCC has established that on average, a northern California cannabis farm grows between 15,000 and 17,000 sq ft of canopy, depending on the county (Calaveras, Humboldt, Mendocino, and Sonoma). Applying an estimated 16,000 sq feet of canopy to 50,000 farms statewide yields an estimated statewide production capacity of over 18,000 acres, or somewhere between three and nine times the estimated demand of the state legal market. The YCC draws a conclusion that if more than 10% of the state's currently operating farms manage to transition into

[1] MacEwan, Duncan. "Economic Impact Analysis of Medical Cannabis Cultivation Program Regulations." California State Department of Finance. January 27, 2017. dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/documents/20170203FinalMCCPSRIA.pdf.

post-2018 legalization, supply would exceed demand on the state level, leading to potentially extreme market crashes.

Through contact with advocacy groups and trade organizations, the YCC has established an estimate of approximately 1,800 acres of canopy either already approved or in the application process throughout the state[2]. After compensating for a 25% denial rate for those applications in process, it is estimated that approximately 1,500 acres of cultivation will be state legal as of 2018. Additionally, it should be noted that Humboldt County is expected to open a second application period, during which the local Cannabis Industry and advocates are expecting the county to receive cultivation applications numbering in the hundreds.

It should be noted that this does not account for local jurisdictions that are currently in the process of considering or passing ordinances. Based on information received from government and industry contacts, the YCC estimates that approximately 25 local governments statewide are currently considering, or in the process of passing, regulatory ordinances.

This data seems to suggest that barring intervention, a market crash within the first three years of legalization is at least possible, if not likely.

While there are a number of factors that could mitigate this effect (such as testing standards or state licensing standards culling cannabis products and producers from the market), the YCC believes that in order to ensure the continued stability of the local Cannabis Industry, a potential market crash must be anticipated, and local policies designed that secure continued productivity of the local industry through said crash. To accomplish this, the YCC believes that a tax ordinance **must not place a tax burden on the local industry such that Yolo cannabis products are rendered economically non-competitive with the majority of the cannabis products in the state market.** To do so would threaten not only local cannabis businesses, but local jobs, the local cannabis tax base, and with it, funding for effective enforcement and other county programs.

Special vs. General Tax

The YCC strongly supports a general tax versus a special tax, based on the following factors:

1. That a general tax would require a simple majority vote, thus significantly increasing the chances of passage by the voters;
2. That a general tax would allow the Board of Supervisors and the County broad discretion for the use of such tax monies; and

[2] Humboldt County is expected to re-open for applications by summer 2018. Industry experts and local government officials expect over a thousand applicants to apply. The YCC used a more conservative estimate of 750 applicants for Humboldt's second application period for the purposes of this statewide estimate.

3. That a general tax would allow the County flexibility in applying tax monies to various changing expenses over time at the discretion of the Board of Supervisors.

Tax Ceiling - Whole Industry Perspective

The YCC analyzed data on tax rates both in and out of state in an effort to determine the effect of overall tax rates on the realization of regulatory goals as stated above (illicit market dissolution, market health, local competition).

Oregon, Washington, and Colorado all initially passed cumulative tax rates of the cannabis production chain of over 30%. However, in general these tax rates have been found to render the legali market non-competitive with the illicit cannabis market, in effect perpetuating the existence of illegal activity[3].

For this reason, Oregon, Washington, and Colorado have all independently launched efforts to reduce cumulative tax, and based on this data, more recent tax proposed tax initiatives across the United States have featured cumulative tax rates between 10 and 25 percent[4].

Upon a review of the effect of cumulative tax rate in other areas, the YCC believes that the total cumulative tax rate on California cannabis should exceed no more than 25%, although the YCC notes that it is yet to be borne out via studies that such a reduction in tax rates would be sufficient to achieve the above stated goals of illicit market dissolution.

It is important to note that in California, current state taxes already exceed this ceiling for adult-use/recreational cannabis before taking local taxes into account, with medicinal/medical cannabis approaching 25% (see Fig. 1).

Fig. 1	**Adult-Use**	**Medicinal**
Cannabis Excise Tax:	15%	15%
CA State Sales Tax:	7.25%	0.00%
Cultivation Tax:	4.90%*	4.90%*
Trim Tax:	2.7%	2.7%
Total:	**29.85%**	**23.60%**

* Based on CA State Cultivation Tax of $9.25 per ounce of flower and estimated retail price of $3000

Additionally, when attempting to determine the upper limit of what constitutes a workable tax burden for the local Cannabis Industry, the YCC believes it important to consider the additional

[3] Bishop-Henchman, Joseph, and Morgan Scarboro. "Marijuana Taxes: Lessons from Colorado and Washington." Tax Foundation. February 16, 2017. taxfoundation.org/marijuana-taxes-lessons-colorado-washington/

[4] Bishop-Henchman, Joseph, and Morgan Scarboro. "Marijuana Taxes: Lessons from Colorado and Washington." Tax Foundation. February 16, 2017. taxfoundation.org/marijuana-taxes-lessons-colorado-washington/

cost burdens associated specifically with cannabis businesses that other industries may not necessarily share, including:

Internal Revenue Code Section 280E

Cannabis businesses are barred from deducting all operating expenses outside of Cost of Goods Sold from their taxes by 26 U.S. Code § 280E. This means that cannabis businesses do not have access to the majority of the deductions enjoyed by businesses in other sectors, rendering the overall tax burden of a cannabis business disproportionately higher than businesses of similar size and description in other industries.

Real Estate

Local jurisdictions that have voted to allow cannabis businesses to legally operate have experienced significant increases in real estate prices for properly zoned parcels. Likewise, for landowners who wish to lease rather than sell to cannabis businesses, rent amount and terms have become increasingly disadvantageous to the cannabis businesses tenant, including six-figure non-refundable down-payments, profit sharing in excess of 20%, and in some cases, equity being granted to landlords.

Goods and Services

Historically, regulatory complications and unusually high risk have prevented a healthy proliferation (and thus competition) of businesses that support the Cannabis Industry with goods and services. Combined with historically high profit margins for cannabis products, specialized supportive businesses have become significantly over priced compared to businesses that support comparable ag crops. Most large commercial cannabis operations still have difficulty getting access to accounts with wholesale supply companies, and are forced instead to seek supply from “Hydro Stores”, which employ 10 to 200 percent markups from prices experienced by other ag businesses for the same or similar goods or services. A similar effect plays out during the development phase of a cannabis operation, in which companies providing similar infrastructure to those found in other industries are doing so at a disproportionately higher price.

Gouging and Defrauding

Cannabis cultivators have not until very recently enjoyed any recourse against predatory businesses that seek to price gouge or defraud. As is common in any jurisdiction that debuts cannabis regulations, Yolo has seen a number of local businesses spring to meet the new demand which have marketed products and services that not only feature extremely high prices, but in some cases, lead to the complete failure of the crops of the businesses they market to due to extremely substandard materials or methods. It has been estimated by the YCC that one local soil company has led to $10 to $16 million in lost profits through an actively misrepresented and extremely deficient soil mix.

Financing

Due to federal regulation of banking, almost all banks operating in California refuse to work with cannabis businesses or employees. This means that even for those individuals and business that can claim consistent income and good credit ratings, obtaining a business or development loan is usually impossible. For this reason, cannabis businesses are often limited to hard money loans, with interest rates between 10 to 20 percent.

Additionally, the management of cash in the absence of a bank account usually incurs additional cost in regards to safes and other security equipment, the use of guards, secure transportation, accounting, etc.

Tax Ceiling - Cultivation

Of the estimated 1,500 acres of cannabis cultivation spread across the state, approximately 80% is attributed to only 4 counties—Calaveras, Humboldt, Mendocino, and Sonoma. For this reason, the YCC will use these "competitive counties" as the main comparison to the local industry, acting as a litmus test for economic competitiveness.

Fig. 2	Outdoor Tax	Mixed Light Tax	Indoor Tax
Calaveras:	$2/sq ft	$2/sq ft	$5/sq ft
Humbodlt:	$1/sq ft	$2/sq ft	$3/sq ft
Mendocino:	2.5% gross receipts	2.5% gross receipts	2.5% gross receipts
Sonoma[5]:	$.50/Sq ft	$1.08/sq ft	$1.88/sq ft

Based on this data (see Fig. 2), should Yolo County decide to implement a square footage tax, the YCC believes that the local tax rate ceiling of $1, $2, and $3 per square foot of canopy for outdoor, mixed light, and indoor cultivation, respectively, should be sufficient to ensure that Yolo cannabis products are competitive in the market.

However, it is the YCC's position that although most other local jurisdictions have implemented square footage taxation due to ease of implementation (square footage is already measured during compliance inspections in all local ordinances, and thus requires little additional administration), a gross receipts tax is likely a more intelligent choice in regards to sustainability of the tax base through market volatility. Under a gross receipts tax, as prices for cannabis fall, taxes are proportionately scaled to market price, thus more adequately ensuring that local

[5] For Sonoma County, quoted rates are starting rates, to be raised as directed by the Board of Supervisors.

businesses remain economically solvent despite narrowing profit margins in the event of a market crash.

Yolo has implemented a moratorium on new cannabis cultivation sites within the County, and does not allow for transference of permits. This means that under the current regulatory scheme, as local cannabis farms go out of business or otherwise fail to pay local taxes, their lost tax and fee revenues constitute an irreplaceable deduction from the overall annual tax and fee bases. Therefore the possibility of a significant portion of local cannabis operations falling into tax-noncompliance or shutting their doors entirely represents a serious threat to the stability of the regulatory program as a whole, and any additional programs cannabis tax dollars may fund.

By ensuring that tax rates remain intelligently proportionate to market price, the YCC believes that a Gross Receipts Tax will help to stabilize the local fee and tax bases, therefore further stabilizing the programs that depend upon these revenue sources.

Therefore, **the YCC recommends that Yolo County pursues a gross receipts tax of a rate roughly equivalent to the per sq ft tax rates of the other four competitive areas** (Humboldt, Mendocino, Sonoma, Calaveras).

To establish a gross receipts tax rate that is equivalent to a competitive counties' square footage tax rates, the YCC converted the highest square footage mixed light tax rate found amongst the three competitive areas that tax based on square footage ($2/sq ft) to the equivalent gross receipts tax rate (see Fig. 3).

Fig. 3

Type 2 Canopy (sq ft)	lbs / Harvest	lbs / Year	Annual Revenue	Tax / sq ft	Total Annual Taxes	Gross Receipts Equivalent
22,000	977.92	3,907.68	$3,907,665	$2	$44,000	1.1%

It should be noted that the above table constitutes extremely conservative estimates, including:

1. 28 grams/sq ft (70 g/sq ft possible)[6]
2. 4 harvests per year (6 possible)[7]

[6] Caulkins / Botec Analysis, Jonathan, Matthew Cohen / Triq Inc., and Luigi Zamara. "Estimating Adequate Licensed Square Footage for Production." Washington State Liquor and Cannabis Board. lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5a_Cannabis_Yields-Final.pdf.

[7] Caulkins / Botec Analysis, Jonathan, Matthew Cohen / Triq Inc., and Luigi Zamara. "Estimating Adequate Licensed Square Footage for Production." Washington State Liquor and Cannabis Board. lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5a_Cannabis_Yields-Final.pdf.

3. $1,000/lb wholesale price ($1,200 possible in current market)[8]

It should also be noted that the YCC's estimates are based on an assumption of greenhouse cultivation, which includes multiple harvests per year. Industry experts estimate that of the total production canopy that is eligible for legalization post-2018, approximately 30% is greenhouse. However, it is also estimated that the significant competitive edge enjoyed by greenhouse growers due to higher quality and drastically lower production costs, paired with new regulations spurring investment and incentivizing greenhouse development, is likely to drive the majority of cultivation canopy into greenhouses within 3 to 7 years. For this reason, the YCC believes that mixed light tax rates are of the highest value for use in future projections.

Based on this data, the YCC asserts that in order for the local cannabis program to remain competitive through market volatility and other specific cost burdens, thus requiring the stability of both the program and the tax base, **then the County's target for a gross receipts tax of cannabis cultivation should be in the vicinity of 1%.** However, the YCC understands that this tax rate would likely not meet the goals of local cannabis tax revenue of $2.9 million. Therefore, the YCC recommends that Yolo County adopt the lowest gross receipts tax rate possible to meet cannabis revenue funding goals.

The YCC recommends an initial gross receipts tax rate of 2.5%, be raised by 1% every 2 years, for a maximum tax ceiling of 4%, via a vote of the Board of Supervisors. This would allow for maximum control by the Board of Supervisors to determine the local tax rate, and allow for greater flexibility for intelligently choosing local tax rates based on market factors in real time.

Tax Ceiling - Other Cannabis Businesses

The YCC completed an analysis of surrounding areas likely to be contributing a significant percentage of the overall manufactured goods to the state market. In general, outside of cultivation, most jurisdictions have chosen to tax the industry on a percent of gross receipts basis.

A brief look at these tax rates is made available on the next page (see Fig. 4).

[8] MacEwan, Duncan. "Economic Impact Analysis of Medical Cannabis Cultivation Program Regulations." California State Department of Finance. January 27, 2017. dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/documents/20170203FinalMCCPSRIA.pdf.

Fig. 4

Mendocino:	All Non-Flower Production Cannabis Businesses:	• $2500 flat rate annually
Sacramento:	Manufacturing and Nurseries:	• 4% gross receipts
	Other Cannabis Businesses:	• 0% gross receipts
Santa Cruz:	All Cannabis Businesses:	• 7% gross receipts
Sonoma:	Manufacturing:	• 5% gross receipts
	Other Cannabis Businesses:	• 0% gross receipts

Yolo County has expressed interest in applying one blanket gross receipt tax rate to all non-flower producing cannabis businesses. Based on surveys of competitive areas, the YCC suggests that if a blanket gross receipts tax is passed, that it be started at 2%, to be raised by 1% every 2 years, for a maximum tax ceiling of 4% gross receipts at the discretion of the Board of Supervisors. This would allow for maximum control by the Board of Supervisors to determine the local tax rate, and allow for greater flexibility for intelligently choosing local tax rates based on market factors in real time.

Conclusion and Recommendations

The YCC recommends that Yolo County pursue a cultivation tax rate of 1% of gross receipts, to be increased by 1.5% every two years via a vote of the Board of Supervisors to a maximum of 4%. For non-flower cultivation cannabis businesses, the YCC recommends a starting tax rate for these businesses of 2% of gross receipts, to be increased by 1% every two years by vote of the Board of Supervisors. These recommendations are based on careful analysis of the tax burden local cannabis businesses could safely bear while maintaining economic solvency through a potential market crash and special production costs.

In addition, should Yolo County employ a gross receipts tax, the YCC recommends instituting a cap on the total combined fees and taxes.

If Yolo County were to opt instead for a square footage tax model, then the YCC would recommend mirroring tax rates in counties that constitute over 80% of the production in the state (see Fig. 5 on the next page).

Fig. 5

Cultivation Types:			
	Outdoor	**Mixed Light**	**Indoor**
	$1/sq ft	$2/sq ft	$3/sq ft

Applied to the current number of permitted farms in Yolo County, and assuming the same production statistics as in Figure 3 of this report, the YCC proposed cannabis cultivation gross receipts tax alone could yield the following:

64 Farms (assuming maximum canopy; 30% greenhouse) = **$4,031,946**

The YCC understands that the state will likely allow cannabis businesses to stack cultivation licenses up to 4 acres via emergency regulations, expected to be issued in November 2017. The State has also announced that it will allow colocation of multiple cannabis cultivation businesses on any single qualifying parcel so long as they are separated by an immovable barrier and maintain separate entrance and egress to their respective premises.

Should Yolo County allow multiple cultivation licenses per parcel up to 4 acres of canopy per parcel, and allow up to 100 farms (as previously stated in Yolo County Board of Supervisors meetings), and assuming that at least 50% of this canopy would be greenhouse production, annual cultivation tax revenue would increase to around **$48,354,213**.

After interviewing Supervisors, Department heads, and private citizens, the YCC currently believes that there is a general consensus that Cannabis Industry taxes must produce $922k in enforcement monies and an additional $2 million for funding of government programs, for a total of at least $2.9 million annually to be acceptable to the County as a whole.

With the current combined canopy area licensed in Yolo, the cannabis cultivation tax alone would produce approximately $4 million, or approximately $1.1 million more than the target annual revenue of $2,922,448. If Yolo were to approve and tax other cannabis businesses, increase the number of farms allowed in the County, and/or allow for multiple licenses per parcel, this figure could easily be increased by over $40 million within two years.

Based on this analysis, the YCC believes that it is possible to achieve annual tax revenue for the County significantly beyond this target amount using the YCC's proposed tax rates.

In addition to this direct income, the YCC believes it important for the County and local industry to take into account indirect economic benefits that lead to boosts in tax and fee incomes in other supportive industries.

In 2016, economic and fiscal impact reports on the Calaveras cannabis economy (commissioned by Ebbett's Pass Lumber and authored by the University of the Pacific Center for Business and Policy Research) quantified many indirect economic benefits of the local industry, including[9] [10]:

1. A 0.3 job multiplier (for every job created in the Cannabis Industry, 0.3 jobs are created in supporting industries)
2. Combined indirect and induced economic output increase equal to 35% of the local Cannabis Industry's direct economic output
3. Combined indirect and induced labor income increase equal to 6.7% of the local Cannabis Industry's direct labor income
4. $212 thousand to $4.3 million in California state cannabis tax funds (depending on method of distribution)

Although specific estimates would require careful comparison between Yolo and Calaveras, if even a fraction of these indirect and induced effects manifest in Yolo, the County can expect indirect economic output of the supporting industries in the tens of millions, with the added tax revenues to the County from these supportive industries valued in the hundreds of thousands to millions.

The Yolo Cannabis Coalition stands ready to support the County towards the goal of implementing intelligent tax policy in Yolo, and looks forward to being a valuable partner towards the goal of sensible regulations that benefit the broader Yolo community.

[9] Michael, Jeffrey. "An Economic Impact Assessment of the Cannabis Cultivation Industry in Calaveras County." University of the Pacific. February 2, 2017. pacific.edu/Documents/school-business/BFC/CannabisStudy/Calaveras%20Cannabis%20Cultivation%20EIS_2017.pdf.

[10] Michael, Jeffrey. "Fiscal Impact of Cannabis Regulations in Calaveras County." County of Calaveras. May 8, 2017. cannabis.calaverasgov.us/Portals/Cannabis/Documents/Planning/Cannabis/Public%20Comments%20On%20DEIR/Rolling%20Hills%20Bookkeeping%206-13-17.pdf

Att. D

Yolo County Cannabis Tax Measure

NOVEMBER 7, 2017

Key Questions

- General or Special Tax
  - Recommendation: General Tax
- Area of Taxation
  - Recommendation: Commercial Activity in the Unincorporated Area
- Mechanism of Taxation
- Rate of Taxation

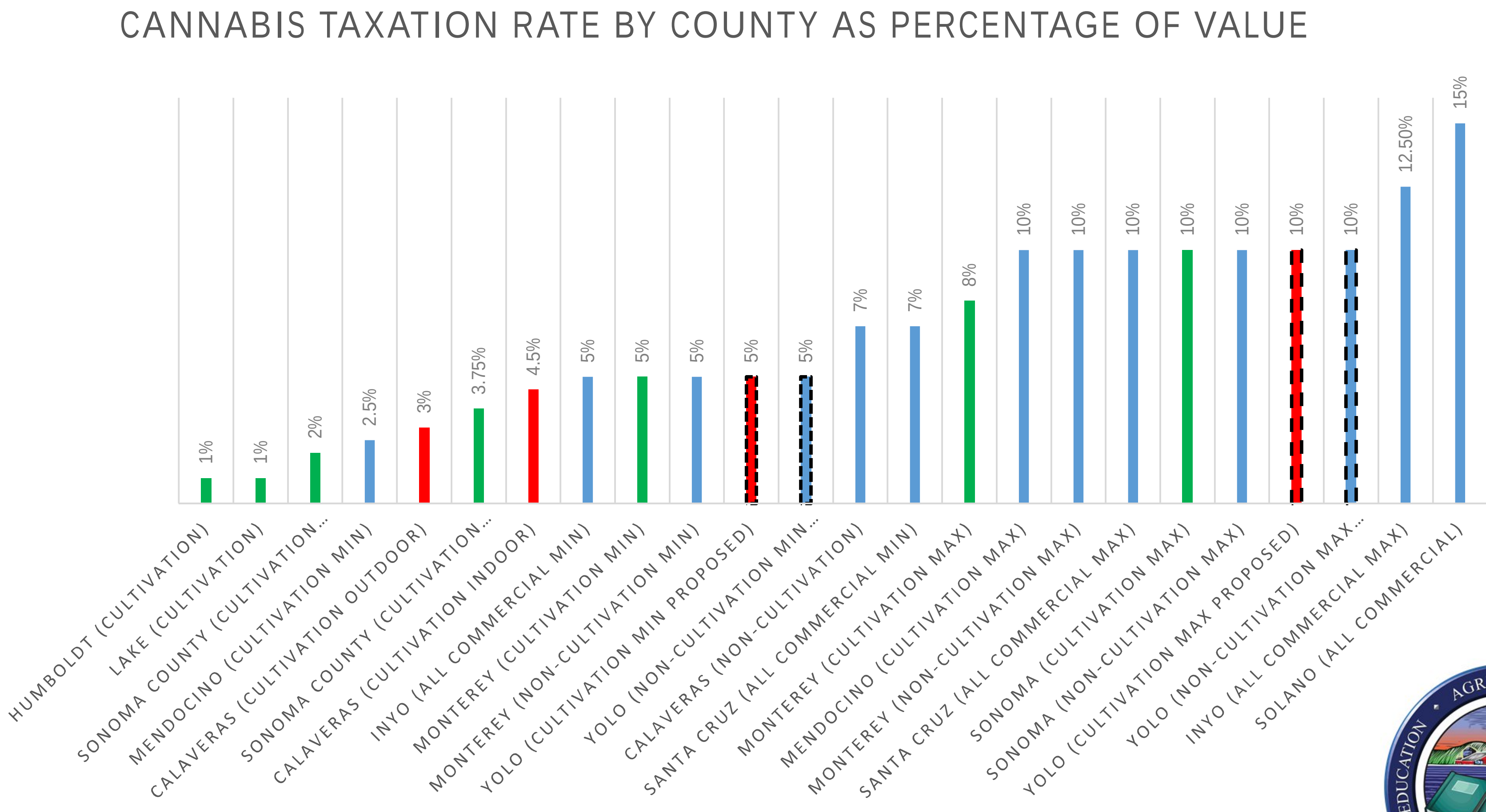
Mechanism of Taxation

- Square footage of canopy: tax on the square footage of permitted canopy, predictable, simple to administer, regressive
- Gross receipts: tax on revenue, subject to variability, can be harder to collect and verify, progressive
- Weight: tax on yield, subject to variability, requires system to collect data, progressive
- Recommendation: weight-based
  - County's track and trace program already collects necessary data

Rate of Taxation

- Data presented intended to be illustrative, not discrete
- Need to balance revenue and market sustainability
- New market, numerous variables (price and productivity fluctuations, overproduction, attrition, type of cultivation, etc.), lack of data, potential for significant market constraints
- Fluctuations in revenue could be smoothed via endowment fund concept that produces consistent revenue
- Tax revenue necessary to address impacts and provide public benefit: $5-10m
- Other considerations: Development Agreements, proposals and input from cultivators (yield based tax in the range of 2-4%)

Rate of Taxation: Comparison



Percentage of Value as a Tax Rate

Tax Mechanism	Percentage of Value	Tax Rate
SQFT (Proposed Min 1lb/20 SQFT)	5%	$2.50/SQFT Outdoor $7.50/SQFT Indoor
SQFT (Proposed Max 1lb/20 SQFT)	10%	$5/SQFT Outdoor $15/SQFT Indoor
SQFT (Proposed Min 1lb/10 SQFT)	5%	$5/SQFT Outdoor $15/SQFT Indoor
SQFT (Proposed Max 1lb/10 SQFT)	10%	$10/SQFT Outdoor $30/SQFT Indoor
Gross Receipts (Proposed Min)	5%	5% Gross Receipts
Gross Receipts (Proposed Max)	10%	10% Gross Receipts
Weight (Proposed Min)	5%	$3.25/oz flower
Weight (Proposed Max)	10%	$6.50/oz flower

Revenue Estimate @ 1lb/20 SQFT: $5-26m

Number of Cultivation Sites	Tax as Percentage of Value	Estimated Revenue	Estimated Revenue w/ Attrition
68 (80% outdoor, 20% indoor)	5%	$7m	$5m
68 (80% outdoor, 20% indoor)	10%	$15m	$7m
75 (30% outdoor, 70% indoor)	5%	$10m	$7m
75 (30% outdoor, 70% indoor)	10%	$19m	$10m
100 (30% outdoor, 70% indoor)	5%	$13m	$10m
100 (30% outdoor, 70% indoor)	10%	$26m	$13m

Revenue Estimate @ 1lb/10 SQFT: $16-59m

Number of Cultivation Sites	Tax as Percentage of Value	Estimated Revenue	Estimated Revenue w/ Attrition
75 (30% outdoor, 70% indoor)	5%	$22m	$16m
75 (30% outdoor, 70% indoor)	10%	$44m	$22m
100 (30% outdoor, 70% indoor)	5%	$29m	$22m
100 (30% outdoor, 70% indoor)	10%	$59m	$30m

Next Steps

- Pending Board direction, staff anticipates returning to the Board on December 12 for a final opportunity to receive Board feedback and guidance prior to drafting of ordinance
- Ordinance first reading: January 9
- Ordinance second reading: January 23
- 4/5ths vote is required to place a general tax ordinance on the ballot