



**Delivering Revenue, Insight
and Efficiency to Local Government**

Fiscal Analysis of the Potential Commercial Cannabis Industry

**Prepared for
the
County of Contra Costa**

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Table of Contents

Introduction	Page 3
Legal and Regulatory Background for California	Page 4
Current Un-Licensed Production in Contra Costa County	Page 7
Initial Parameters for this Analysis	Page 8
Phasing-In Permits and Taxes	Page 11
Taxing Cultivation	Page 12
State Tax Considerations	Page 20
General Economic Impacts	Page 23
Enforcement and Permitting Costs	Page 24
Revenue Projections for Cultivation	Page 27
Manufacturers	Page 32
Distributors	Page 36
Cannabis Retailers	Page 38
References	Page 41

Introduction

HdL is providing this fiscal analysis of the commercial medical and non-medical cannabis industry in Contra Costa 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 Contra Costa 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 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 decriminalized 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-contiguous 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	California 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 Un-Licensed Production in Contra Costa 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 poundsⁱ, suggesting a significant amount of overproduction that is presumably exported to other states through the black market.

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 than the 13.5 million pounds projected.

This same study found that the Bay Area Region (which includes San Francisco, Alameda and Contra Costa counties) produces approximately 175,000 pounds of cannabis per year, which amounts to about 1.3% of the cannabis produced in the State. 61% of the region's production is believed to be cultivated outdoors, with 13% using mixed-light cultivation and 26% being produced indoors.

The SRIA does not break down estimates of production for individual counties. Dividing 175,000 pounds equally among the three counties in the region would give a figure of about 58,000 pounds for each. Contra Costa County has a population of 1.135 million people, while Alameda County's population is 1.514 million, and San Francisco's is 865,000. This gives Contra Costa 32% of the region's share of population, which roughly conforms with the three-way split.

San Francisco is one of the most expensive places to live in the United States, with a medium home price of \$1.469 million dollars. By comparison, the medium home price in Alameda County is \$900,000, and \$660,000 in Contra Costaⁱⁱ. It's reasonable to assume that these lower property values and a higher vacancy rate for commercial or industrial properties would make Alameda a more attractive location for this industry to locate, given the opportunity.

Initial Parameters for this Analysis

Contra Costa County currently has a ban on all commercial cannabis activity. At its July 18th meeting, the Board of Supervisors expressed interest in exploring possibilities for lifting the ban and instead regulating and taxing cannabis, but only if the two are linked. To accomplish this, the County is seeking to develop a tax measure for the November 2018 ballot, along with a regulatory program that would only be enacted if and when the voters approve the tax measure. The County is seeking additional data and information from HdL to help inform decision-making regarding both measures. Most immediately, the County desires information on the potential revenue that could be generated by a tax measure, based on a variety of scenarios, as well as other fiscal and economic impacts. This information will help the Board determine how aggressive it wants to be in permitting, regulating and taxing this industry, so that it can provide more meaningful direction to staff for development of these measures.

For this fiscal analysis, HdL is providing a number of scenarios based upon a variety of sources. Figures for cultivation are based on 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. Rather than using the CDFA survey as a source for specific numbers, we shall utilize this data only as a starting point to provide a general indication of the overall level of interest in, for example, indoor cultivation versus outdoor, or Type 3 "Medium" licenses versus the smaller Type 1 "Specialty" licenses. To this end, we have rounded the numbers in our calculations to the nearest 5 to avoid the perception that these figures are exact.

That CDFA survey shows 213 people expressing interest in seeking any of the 10 cultivation license types in all of Contra Costa County, including both the cities and the unincorporated area. While this figure seems reasonable compared with other Bay Area counties of similar size (the survey shows 257 for San Francisco and 589 for Alameda) our analysis here will use a smaller subset of these numbers to account for that portion of survey respondents who live in the cities, or who may not be in a realistic position to move forward at this time. Additionally, the County may wish to phase-in such permits over a period of time, starting with a smaller number of available permits and increasing this as the industry normalizes.

This initial fiscal analysis provides four scenarios that represent roughly 5%, 10%, 15% and 25% of the cultivation figures in the CDFA survey. Based on consultation with County staff, we shall use hypothetical base tax rates of \$1, \$3, \$5 and \$7 per square foot of cultivation area.

The CDFA survey shows 34 people registering their interest in seeking licenses for cannabis retailers in Contra Costa County. The number of cannabis retailers that a city or county can support can be based upon population and neighboring communities. Contra Costa has an estimated population of 1.135 million people, of which around 200,000 live in the unincorporated area. A 2015 survey by the Humboldt Institute for Interdisciplinary Marijuana Studiesⁱⁱⁱ found an average of 4-6 retailers (or dispensaries) for every 100,000 people statewide, and likely more in communities with higher social acceptance and use. This would allow for between 45 and 68 retailers countywide, with a proportional share of 8 to 12 in the

unincorporated area. That same study showed that Contra Costa County had only 1 or 2 dispensaries per 100,000 people, which would indicate between 11 and 22 dispensaries countywide, with 2 to 4 in the unincorporated area.

Confidential sales tax data obtained by HdL shows 40 marijuana-related businesses in Contra Costa County as a whole registered with the Board of Equalization (payment of sales tax indicates a retail cannabis business). Of these, only 26 report any actual income, with just 9 reporting significant income over the past 4 quarters. There are just 7 registered marijuana-related businesses in the unincorporated County, with only 1 reporting significant income over the past 4 quarters. This figure is presumably low due to the existing ban on such businesses, and so does not represent the number of retailers that might come into existence should the County allow them.

The population-based norms from the study above suggest that the county as a whole could potentially accommodate as many as 68 cannabis retailers, with perhaps as many as 22 serving the unincorporated area. To attract such a large share of such businesses, the County would have to offer favorable regulations and attractive tax rates, and allow retailers in locations that very aggressively pull customers from neighboring cities. We believe this is unlikely in the near term, and may be undesirable to the community at large. For purposes of this fiscal analysis, we shall use four scenarios for the number of retailers in the unincorporated area: a low of 3, a high of 12, and two midrange models at 6 and 9. We have run each of these scenarios using hypothetical gross receipts tax rates of 3%, 5% and 7%.

The County may also wish to consider structuring its regulations or taxes for cannabis retailers in a way that supports or encourages delivery services, rather than brick-and-mortar stores. Data collected for a Standardized Regulatory Impact Assessment conducted for the Bureau of Medical Cannabis Regulation (now Bureau of Cannabis Control) found that 57% of cannabis retailers statewide use a storefront location, while 47% conduct business using a delivery service. The 4% overlap in the results represents retailers that sell through both a storefront and a delivery service. This 4% figure is believed to be an underestimate due to certain reporting requirements.

Estimating numbers for cannabis manufacturers is more complicated than either cultivators or dispensaries, as there is not yet good data to go by. The Standardized Regulatory Impact Assessment developed for the California Department of Public Health's Office of Manufactured Cannabis Safety estimated that there are perhaps 1,000 cannabis manufacturers of all types statewide. HdL believes that these will not be apportioned evenly by county or by population or land mass. Rather, we assume that these businesses will tend to locate in those counties that provide the most attractive mix of amenities, including access to markets and suppliers, a vibrant cannabis industry and a welcoming regulatory and tax climate. Given the wide range of approaches to cannabis by jurisdictions around the State, we assume that 50% (500) of these 1,000 business will be centered in 12 supportive counties, with the other 50% being spread among the remaining 46. This gives an average of 42 cannabis manufacturers for each of the 12 counties.

We believe that Contra Costa County, due to its prime location as the eastern gateway to the Bay Area, is well positioned to be one of these 12 supportive counties, should it choose to be. How these are apportioned between the County and the 17 cities is uncertain, but with favorable regulatory policies and available industrial spaces, the County could potentially attract as many as 20 of these businesses. For this analysis we will use four scenarios, with 5, 10, 15 or 20 manufacturers, and run them at hypothetical tax rates of 3%, 5% and 7% of gross receipts.

Distributorships are also difficult to provide estimates for at this time, due to a similar lack of data. As with manufacturers, where these businesses choose to set up shop will largely be a function of access to

clients and markets, and a welcoming regulatory and tax climate. Contra Costa’s location lends itself well to distribution centers that can access both the greater San Francisco Bay Area and the Capitol corridor, suggesting that the County could seek to attract more than its proportional share of these businesses, if it chose to.

The Standardized Regulatory Impact Assessment (SRIA) completed for the Bureau of Cannabis Control^{iv} assumes that there is an average of 1 distributor for every 10 dispensaries, and 1 testing lab for every 2 distributors. The model estimates that the average distributor would handle 6,400 pounds of cannabis per year. Our analysis of potential cultivation in the County considers 4 possible scenarios, ranging from 5% to 25% of the number of growers identified in the CDFA survey. From this, we anticipate a total production of 22,000 pounds to 110,000 pounds per year. Assuming that half of the cultivators choose to self-distribute, we would anticipate between 2 and 8 independent distributors being needed to move the remaining volume of product to market. This is discussed in more detail in the section on Distributors, beginning on page 32.

There are not yet established norms for taxing distributorships. This analysis will consider just two scenarios with 3 and 5 distributors, and will run them with the same tax rates for retailers and manufacturers (3%, 5% and 7%). While there is not an abundance of data to determine the average gross receipts for distributors, HdL has reviewed a number of pro-formas for distributors seeking licenses in other jurisdictions. These indicate anticipated gross receipts in the range of \$2 million to \$3 million per year, with an average of \$2.5 million. We shall use these figures for our revenue projections.

Lastly, HdL does not recommend proposing a tax on testing laboratories, as they perform a quasi-regulatory function that protects public health and safety. The cost of testing (averaging about \$50 per pound) and loss of product (0.5%) is a government mandated cost that is akin to a tax of 5.5%.

The scenarios and rates for this analysis are shown in Figure 2, below.

Figure 3:

Cannabis Business Type	Scenarios	Tax Rates
Cultivation	5%, 10%, 15%, 25% of CDFA	\$1, \$3, \$5, \$7 per sq. ft.
Retailers	3, 6, 9, 12	3%, 5%, 7%
Manufacturers	5, 10, 15, 20	3%, 5%, 7%
Distributors	3, 5	3%, 5%, 7%
Testing	-	-

Phasing-In Permits and Taxes

The numbers and percentages used in this analysis are displayed as ranges to offer options for the County to consider. These ranges can also be considered as illustrating the effect of “phasing-in” over time. For example, the County may issue 3 retailer permits the first year, with 3 more in year two, and 3 more the year after that, for a total of 9. In such case, the numbers in this analysis could be used to show the revenues that could be expected in each successive year as the program builds.

Phasing-in can be done deliberately, to allow the County to gain experience with regulating cannabis, or it can happen passively as a result of the rate at which the County is able to implement a new program and process the associated permit workload. It can also happen as a result of the adoption curve by the industry, as some players may choose to delay their entry into the regulated market so as to avoid the risks associated with being an early adopter. Additionally, many of those in the cannabis industry may have little or no experience with permitting, licensing or regulation, or in running an above-board business, which reduces the likelihood that they will ultimately succeed in obtaining permits.

In any of these cases, the number of permits issued in the first few years would be a subset of the total number of cannabis businesses that may step forward. As such, a deliberate phased approach that limits the number of permits to be processed in each of the first few years of the program may prove to have little actual effect on the number of businesses that obtain permits within that timeframe.

Planning for a set number of permits over a given period of time can allow the County to better anticipate the workload on an annual basis, so that it can budget appropriately and provide adequate staffing in advance. Stretching the permitting workload over a greater period of time, in turn, can allow the County to accommodate that workload with fewer additional staff, decreasing the likelihood of layoffs after an initial rush of permitting has ended.

Taxing Cultivation

There are four main approaches to taxing the various cannabis commercial activities:

- 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; The State's 15% excise tax is an example of a tax on the business's gross receipts. This is the method most commonly applied to cannabis businesses other than 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 is a tax on product by weight, which does not consider the value of the product.
- 4) A retail sales tax at point of sale: All retail sales of cannabis and cannabis products are subject to State and local sales taxes, with a limited exception for qualifying patients with a State-issued ID card. State and local taxes are limited to a combined maximum of 10.250%

When multiple tax methods are applied at both the local and state levels, each adds to the final price of the product, even though the taxes are collected upstream from the end user in most cases. Varying tax structures at both the local and state levels can make it hard to find a common denominator for determining the cumulative tax rate. To determine the cumulative tax rate on cannabis, how a gross receipts tax compares with other methods, we must find a common denominator between square footage, weight of product, and gross receipts.

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 MCRSA¹ define "canopy" to mean all of the following:

- 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

¹ 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 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.

- 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 on Cultivation

A tax on the gross receipts of a business may be paid either monthly 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 or not be known until harvest time, which may leave some growers with a significant end-of-year tax burden beyond 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 generally 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 made more money.

Lastly, it's important to bear in mind that a tax on gross receipts is a tax on *gross income*, rather than actual profit. What portion of that 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.

Economies of scale

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, both cultivation and manufacturing have some option to move to other jurisdictions with a more advantageous regulatory climate. If the County desires to generate revenue from this industry through taxes, then it must find tax rates and structures that are acceptable or beneficial 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.

Scenarios presented in this report make a number of baseline assumptions regarding the impact of taxes. It is assumed that a high tax burden presents a greater challenge to smaller businesses than to larger ones, which have certain benefits from economies of scale. This is not to say that higher taxes are beneficial to larger businesses; it is only to suggest that larger businesses generally have a somewhat greater capacity to accommodate and absorb overhead such as taxes and, conversely, that smaller businesses are more acutely affected by this increased overhead. Studies suggest that the economies of scale are larger for outdoor cultivation than for indoor, but that they are nonetheless relatively mild (Hawken, 2013).^v

Economies of scale may be a consideration for the County in that they create a slight advantage for larger cannabis businesses. All other things being equal, a larger business with lower per-unit operational costs will have certain advantages over smaller competitors, potentially leading to more large businesses and fewer small ones, especially if there is only a limited number of permits to be available. The County may regard this as either a non-issue or even as beneficial, if it desires to incentivize large cannabis businesses over small ones. On the other hand, if the County desires to either level the playing field or to incentivize smaller cannabis operations, it may want to consider a tiered tax structure with a slight increase on the larger operations. This is discussed later in this analysis.

Harvest Cycles

It is assumed that 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 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^{vi}. Both of these factors should be considered when developing an appropriate tax strategy.

For purposes of this analysis, we have modified the one, three and five harvest cycles per year above to assume just four cycles for indoor cultivation. This assumption is modified for the sake of providing more conservative projections and to recognize that there are a range of practices and regimens for indoor cultivation. It is generally accepted that cannabis requires a minimum of 60 days to reach flowering maturity, which would allow for a maximum of six harvest cycles per year (some cultivators claim to achieve as many as eight harvests per year, but this is likely neither realistic nor sustainable at the commercial level). Assuming four harvest cycles per year also reflects the higher volatility of a more rigorous and demanding rotation schedule by allowing for the possibility of crop loss due to pathogens or other causes.

Yield is 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^{vii}. 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.

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. It is not possible at this time to know the actual size of the cultivation area that will be permitted for each applicant, but any variables can only push these figures downward, as they cannot exceed the maximum allowed by their license type. For purposes of this analysis, we will generally assume that the average canopy area for each license type would be 75% of the allowable maximum.

Comparing Square Footage and Gross Receipts

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 it is 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. The next three scenarios are based on the varied tax rate above, but we have added in tiers that increase the tax rate by 25% for each larger cultivation class (Specialty, Small and Medium).

Figure 5:

Tiered Variable Tax Adjusted by Harvest Cycles per Year and Cultivation Area - Example 1									
Cultivation Type	Harvest Cycles /Year	Sample Area (sq ft)	Yield (lbs)	Value @ \$1,000/lb	Tiered Variable Tax Rate	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
Specialty Outdoors	1	1,000	100	\$100,000	\$1.00	\$1,000	\$1.00	\$10.00	1.00%
Specialty Mixed Light	3	1,000	300	\$300,000	\$3.00	\$3,000	\$1.00	\$10.00	1.00%
Specialty Indoors	4	1,000	400	\$400,000	\$4.00	\$4,000	\$1.00	\$10.00	1.00%
Small Outdoors	1	1,000	100	\$100,000	\$1.25	\$1,250	\$1.25	\$12.50	1.25%
Small Mixed Light	3	1,000	300	\$300,000	\$3.75	\$3,750	\$1.25	\$12.50	1.25%
Small Indoors	4	1,000	400	\$400,000	\$5.00	\$5,000	\$1.25	\$12.50	1.25%
Medium Outdoors	1	1,000	100	\$100,000	\$1.50	\$1,500	\$1.50	\$15.00	1.50%
Medium Mixed Light	3	1,000	300	\$300,000	\$4.50	\$4,500	\$1.50	\$15.00	1.50%
Medium Indoors	4	1,000	400	\$400,000	\$6.00	\$6,000	\$1.50	\$15.00	1.50%

Figure 5 (above) uses the 1/3/4 rate structure from Figure 3 for the “Specialty” cultivation classes (License Types 1, 1A and 1B; up to 5,000 square feet). For the “Small” cultivation classes (Type 2, 2A and 2B; up to 10,000 square feet), we have added in a 25% increase over the base rate, and for the “Medium” classes (Type 3, 3A and 3B; up to 22,000 square feet for indoor and mixed light, or one acre for outdoor) we have added an additional 25%. The tax rates vary more greatly, from a low of \$1.00 per square foot for Specialty Outdoor, up to \$6.00 per square foot for Medium Indoor, and the amount of tax paid on the 1,000 square feet sample area varies accordingly; from \$1,000 up to \$6,000. However, the tax rate amortized by harvest cycles per year only varies from \$1.00 per square foot to \$1.50 per square foot. The tax per pound ranges from \$10.00 to \$15.00, and the tax as a percent of value (assuming \$1,000 per pound) equals just 1% to 1.5%.

Figure 6 builds upon the previous scenario, but increases the base tax rate for outdoors cultivation up to \$3.00 per square foot. The base rate for mixed light is set at \$9.00 per square foot, and the base rate for

indoors is \$12.00 per square foot. As with the previous model, the rate increases by 25% for each larger cultivation class. This pushes the tax rate for Medium Indoors cultivation up to \$18.00 per square foot, or \$18,000 for a 1,000 square foot sample area. While on its face this appears to be a very high tax rate, when amortized over four harvest cycles the rate is just \$4.50 per square foot, and the tax as a percent of value is 4.50%.

Figure 5:

Tiered Variable Tax Adjusted by Harvest Cycles per Year and Cultivation Area - Example 2									
Cultivation Type	Harvest Cycles /Year	Sample Area (sq ft)	Yield (lbs)	Value @ \$1,000/lb	Tiered Variable Tax Rate	Total Annual Tax Paid	Tax Rate per Cycle	Tax per Pound	Tax as Percent of Value
Specialty Outdoors	1	1,000	100	\$100,000	\$3.00	\$3,000	\$3.00	\$30.00	3.00%
Specialty Mixed Light	3	1,000	300	\$300,000	\$9.00	\$9,000	\$3.00	\$30.00	3.00%
Specialty Indoors	4	1,000	400	\$400,000	\$12.00	\$12,000	\$3.00	\$30.00	3.00%
Small Outdoors	1	1,000	100	\$100,000	\$3.75	\$3,750	\$3.75	\$37.50	3.75%
Small Mixed Light	3	1,000	300	\$300,000	\$11.25	\$11,250	\$3.75	\$37.50	3.75%
Small Indoors	4	1,000	400	\$400,000	\$15.00	\$15,000	\$3.75	\$37.50	3.75%
Medium Outdoors	1	1,000	100	\$100,000	\$4.50	\$4,500	\$4.50	\$45.00	4.50%
Medium Mixed Light	3	1,000	300	\$300,000	\$13.50	\$13,500	\$4.50	\$45.00	4.50%
Medium Indoors	4	1,000	400	\$400,000	\$18.00	\$18,000	\$4.50	\$45.00	4.50%

Figure 7 shows the effect of applying this model to a higher base rate of \$5.00 per square foot. Using the same multipliers for harvest cycles, the base rate for mixed-light cultivation goes up to \$15.00 per square foot and the base rate for indoor goes up to \$20.00 per square foot. The highest rate for the medium indoors cultivation class climbs all the way to \$30.00 per square foot, which equals a tax per pound of \$75.00, and an equivalent tax rate as a percent of value of 7.50%.

Figure 7:

Tiered Variable Tax Adjusted by Harvest Cycles per Year and Cultivation Area - Example 3									
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
Specialty Outdoors	1	1,000	100	\$100,000	\$5.00	\$5,000	\$5.00	\$50.00	5.00%
Specialty Mixed Light	3	1,000	300	\$300,000	\$15.00	\$15,000	\$5.00	\$50.00	5.00%
Specialty Indoors	4	1,000	400	\$400,000	\$20.00	\$20,000	\$5.00	\$50.00	5.00%
Small Outdoors	1	1,000	100	\$100,000	\$6.25	\$6,250	\$6.25	\$62.50	6.25%
Small Mixed Light	3	1,000	300	\$300,000	\$18.75	\$18,750	\$6.25	\$62.50	6.25%
Small Indoors	4	1,000	400	\$400,000	\$25.00	\$25,000	\$6.25	\$62.50	6.25%
Medium Outdoors	1	1,000	100	\$100,000	\$7.50	\$7,500	\$7.50	\$75.00	7.50%
Medium Mixed Light	3	1,000	300	\$300,000	\$22.50	\$22,500	\$7.50	\$75.00	7.50%
Medium Indoors	4	1,000	400	\$400,000	\$30.00	\$30,000	\$7.50	\$75.00	7.50%

Adding tiers for larger cultivation license types can be an effective, incentive-based tool to either level the playing field for small operations, or to actively encourage small growers over larger ones. Limiting the

number of licenses available for each license type accomplishes this same goal in a more prescriptive manner.

Equivalent Tax Rate

Lastly, Figure 8 shows a simple, non-tiered tax to arrive at an equivalent tax rate of 7%. The baseline for outdoor cultivation would be \$7 per square foot, with mixed light at \$21 per square foot and indoors at \$28 per square foot. There are no tiers for larger or smaller size operations, to keep the equivalent tax rate at a consistent 7%. Adding tiers at an additional 25% as in the previous models would push the top-tier rate for Type 3B Medium Indoor cultivation to \$42 per square foot, making it one of the highest square-footage cultivation rates in California.

Figure 8:

7% Equivalent Tax Rate									
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	\$7.00	\$7,000	\$7.00	\$70.00	7.00%
Mixed Light	3	1,000	300	\$300,000	\$21.00	\$21,000	\$7.00	\$70.00	7.00%
Indoors	4	1,000	400	\$400,000	\$28.00	\$28,000	\$7.00	\$70.00	7.00%

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. Both 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.

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 administer², 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 difficult to administer, as the County must verify the business's reported earnings or production.

² 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.

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)^{viii}. 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 the County cultivation tax to the State's 14.8% to determine the total tax rate paid. If the County 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%^{ix}. For this analysis, we will assume an average markup of 30%, though we anticipate this will settle out closer to 20% over time.

Figure 9:

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 3% CBT	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 7% CBT	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 and manufacturers 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 \$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% is undeniably high for any business or product, it is still within the range of taxes imposed by other states that have legalized cannabis^x. 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 (such as vape pens), 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 of these businesses are not limited to the business owner or the cannabis industry, itself. Cultivators and manufacturers bring 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, and other businesses. Retail does not have the same potential for bringing in new money, as it generally recirculates money within the existing community, with some portion going out of the area to pay suppliers and wholesale distributors. However, a community that lacks retail outlets for any particular product sector will likely experience “leakage” of those sales and their associated sales tax revenue to other neighboring jurisdictions where such stores are located. In this way, cultivators and manufacturers can bring new money into the community, while retailers can help prevent leakage or loss of sales and sales tax out of the community.

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^{xi}, 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 Californians 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^{xii}. The majority of the cannabis produced in California is presumably supplying other states that do not have legalized cannabis.

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 annually³. 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 Contra Costa County. However, if we assume that perhaps 20% of the 367 potential cannabis businesses identified in the CDFA survey are currently operating then, at the cost range above, the County could expect to spend between \$1.8 million and \$3.7 million to enforce a ban against some 73 illegal cannabis businesses.

Under a ban, enforcement against illegal commercial cannabis activities requires greater involvement by the Sheriff's office. The full cost (salary and benefits) to the County for a 40-hour, POST-certified Deputy Sheriff ranges from around \$100,000 per year to over \$200,000 per year (depending on hours, years of experience, overtime and other factors^{xiii}). The average cost for all 1,100 Sheriff's Office employees is \$98,000 per year, including administrative staff and non-POST certified personnel, all of whom would have some role in supporting the work of Deputies in the field. 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

³ HdL did not receive permission to identify these clients for this report.

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 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 50 or more new businesses of this type may well require additional staff. Staffing up for this work would 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.

The scenarios contemplated by these two counties assumed a workload of 75 to 142 permits in one case, and from 143 to 223 in the other. In the analysis that follows, we shall consider a total permit workload from as few as 22 cannabis businesses to as many as 91; significantly below the ranges from these other counties. At the low end of this range, the County may be able to accommodate the additional workload with existing staff, especially if these permits are phased in over a period of 2 or 3 years. At the upper end, the County would likely need a special cannabis permitting unit, presumably within the Department of Conservation and Development. The individual permit costs will depend upon how robust of a program the County chooses to develop, but we would project costs in the range of \$2 million to \$3 million for a dedicated cannabis permit program adequate for this number of businesses, with individual costs ranging from \$22,000 to \$32,000 per permit.

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. 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.

Counties which allow the commercial cultivation and retail sale of cannabis are also available for certain competitive grants through the Bureau of State and Community Corrections (BSCC), which are funded with revenue from the California Cannabis Tax Fund. The State is estimated to take in over a billion dollars

to this fund through the taxes established in the AUMA. After a number of set-asides, 60% of this will be available to counties, schools and other organizations for youth education, intervention, behavioral health, substance abuse treatment and related programs. 20% will go to the Department of Fish and Wildlife and the Department of Parks and Recreation to fund investigation, enforcement and prosecution for environmental violations related to cannabis cultivation. The remaining 20% will go to the State and Local Government Law Enforcement Account, to be allocated to the California Highway Patrol and the BSCC for specific purposes. Of the entire Cannabis Tax Fund, only that subset of 20% that goes to the BSCC is unavailable to counties or cities which ban commercial cultivation and retail sale.

In this way, taking a regulatory approach to cannabis allows local governments to reduce the burden on the general fund for enforcement against the black market, to develop substantial new revenue sources, and to make the legal, regulated industry pay its own way through fees.

Revenue Projections for Cultivation

HdL has created a series of tax revenue scenarios which analyze and present the potential annual revenue that could be generated for the County by applying various tax rates to different cannabis business types. We have analyzed four different tax rates of 1%, 3%, 5% and 7% and applied them to the four categories of cultivation, manufacturing, distribution, and dispensaries.

This analysis for cannabis cultivation is patterned after the best practices in the logic model presented in figures 3 through 8, which uses a square footage tax as a way to approximate a percentage of value. As we have demonstrated, an “uneven” tax rate per square foot of cultivation area results in a more equitable tax that represents an even amount based on tax per cycle, tax per pound, or as a percentage of value. That generic model used a standard unit of 1,000 square feet for each cultivation type, which could then be multiplied to apply to any size operation.

We have also included an “attrition factor” to account for the impact that higher taxes will likely have on the industry. This factor assumes that for every 1% increase in the local tax rate (as a percent of value), there is 5% attrition 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. By this model a local tax rate of 10%, on top of the considerable State taxes, will result in attrition of 50%⁴.

This rate of 5% attrition for every 1% tax increase 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.

Figure 10, below, shows the number of licenses and the square footage for each cultivation license type, using roughly 5%, 10%, 15% and 25% of the numbers from the CDFA survey. As noted previously, we have rounded the actual numbers from the survey to the nearest 5, to avoid the perception that the resulting figures are exact. The square footage for each license type at each percentage will be used in this analysis for determining the amount of tax revenue that could be generated at various rates.

⁴ Though the attrition rate refers to a reduction in the number of cultivators, here we are applying it to the total annual tax, for ease of illustration. The total annual tax is a direct product of the number, size and type of cultivation, making it an appropriate proxy.

Figure 10:

Cultivation Area by License Type											
License Type	CDFA Survey		Rounded Figures	25% of CDFA		15% of CDFA		10% of CDFA		5% of CDFA	
	Average s/f	# of Licenses		# of Licenses	Total Area (s/f)	# of Licenses	Total Area (s/f)	# of Licenses	Total Area (s/f)	# of Licenses	Total Area (s/f)
Type 1	3,750	28	30	8	28,125	5	16,875	3	11,250	2	5,625
Type 1A	3,750	41	40	10	37,500	6	22,500	4	15,000	2	7,500
Type 1B	3,750	20	20	5	18,750	3	11,250	2	7,500	1	3,750
Type 2	7,500	21	20	5	37,500	3	22,500	2	15,000	1	7,500
Type 2A	7,500	30	30	8	56,250	5	33,750	3	22,500	2	11,250
Type 2B	7,500	15	15	4	28,125	2	16,875	2	11,250	1	5,625
Type 3	32,670	8	10	3	81,675	2	49,005	1	32,670	1	16,335
Type 3A	16,500	19	20	5	82,500	3	49,500	2	33,000	1	16,500
Type 3B	16,500	10	10	3	41,250	2	24,750	1	16,500	1	8,250
Type 4	15,000	21	20	5	75,000	3	45,000	2	30,000	1	15,000
Totals		213		54	486,675	32	292,005	22	194,670	11	97,335

Each of these scenarios assumes a different number of cultivators seeking and obtaining each of the various license types available. These scenarios allow the County to consider the potential revenues that could be realized from such a scenario. These figures can also provide a glimpse of what a phased approach might look like, as discussed earlier. For example, the County might seek to eventually permit 50 cultivation sites, similar to the 25% CDFA figures. If the County desired to phase these permits in over time, it might look to permit 10 cultivation sites in year one, followed by 20 cultivation sites in years two and three. The scenarios that follow give an indication of the revenues the County could anticipate from such a phased approach.

Figure 11

5% of CDFA Survey														
License Type	# of Licenses	Harvest /Year	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax
Type 1	2	1	\$1.00	1.0%	\$5,625	\$3.00	3.0%	\$16,875	\$5.00	5.0%	\$28,125	\$7.00	7.0%	\$39,375
Type 1A	2	4	\$4.00	1.0%	\$30,000	\$12.00	3.0%	\$90,000	\$20.00	5.0%	\$150,000	\$28.00	7.0%	\$210,000
Type 1B	1	3	\$3.00	1.0%	\$11,250	\$9.00	3.0%	\$33,750	\$15.00	5.0%	\$56,250	\$21.00	7.0%	\$78,750
Type 2	1	1	\$1.00	1.0%	\$7,500	\$3.00	3.0%	\$22,500	\$5.00	5.0%	\$37,500	\$7.00	7.0%	\$52,500
Type 2A	2	4	\$4.00	1.0%	\$45,000	\$12.00	3.0%	\$135,000	\$20.00	5.0%	\$225,000	\$28.00	7.0%	\$315,000
Type 2B	1	3	\$3.00	1.0%	\$16,875	\$9.00	3.0%	\$50,625	\$15.00	5.0%	\$84,375	\$21.00	7.0%	\$118,125
Type 3	1	1	\$1.00	1.0%	\$16,335	\$3.00	3.0%	\$49,005	\$5.00	5.0%	\$81,675	\$7.00	7.0%	\$114,345
Type 3A	1	4	\$4.00	1.0%	\$66,000	\$12.00	3.0%	\$198,000	\$20.00	5.0%	\$330,000	\$28.00	7.0%	\$462,000
Type 3B	1	3	\$3.00	1.0%	\$24,750	\$9.00	3.0%	\$74,250	\$15.00	5.0%	\$123,750	\$21.00	7.0%	\$173,250
Type 4	1	-	\$0.50		\$7,500	\$1.00		\$15,000	\$2.00		\$30,000	\$3.00		\$45,000
Totals	11				\$230,835			\$685,005			\$1,146,675			\$1,608,345
Attrition Rate (-5% for every 1% tax)				5.00%	\$219,293		15.00%	\$582,254		25.00%	\$860,006		35.00%	\$1,045,424

Figure 11 projects tax revenues assuming that 5% of the respondents to the CDFA survey would cultivate a combined area of 97,335 square feet. We have applied base tax rates of \$1, \$3, \$5 and \$7 per square foot to the amount of area cultivated by each license type. These rates are roughly equivalent to 1%, 3%, 5% and 7% of value, respectively. The base tax rate is then multiplied by the number of harvests per year (1 for outdoor, 3 for mixed light and 4 for indoor) to arrive at the rates above, as demonstrated in the model outlined earlier.

At a base tax rate of \$1 per square foot (\$1/sf outdoor, \$3/sf mixed light, \$4/sf indoor), this scenario would nominally generate \$230,835 in annual revenue for the County. When the attrition factor is applied, there is a loss of 5% of businesses that choose to locate elsewhere, or who go out of business or who choose not to transition to the legal market, reducing the total revenue to \$219,293.

A base rate of \$3 per square foot (\$3/sf outdoor, \$9/sf mixed light, \$12/sf indoor) would nominally generate \$685,005 in annual revenue. When the 5% attrition rate is applied that number drops by 15%, down to \$582,254.

With a rate structure of \$5 per square foot for outdoor, \$15 per square foot for mixed-light, and \$20 per square foot for indoor cultivation, this scenario would nominally generate \$1,146,675 in annual revenue for the County. This drops by 25% after attrition, down to \$860,006.

Applying a base rate of \$7 per square foot (\$7/sf outdoor, \$21/sf mixed light, \$28/sf indoor) would generate \$1,608,345 before attrition of 35%, which would bring it down to \$1,045,424.

Figure 12

10% of CDFA Survey														
License Type	# of Licenses	Harvest /Year	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax
Type 1	3	1	\$1.00	1.0%	\$11,250	\$3.00	3.0%	\$33,750	\$5.00	5.0%	\$56,250	\$7.00	7.0%	\$78,750
Type 1A	4	4	\$4.00	1.0%	\$60,000	\$12.00	3.0%	\$180,000	\$20.00	5.0%	\$300,000	\$28.00	7.0%	\$420,000
Type 1B	2	3	\$3.00	1.0%	\$22,500	\$9.00	3.0%	\$67,500	\$15.00	5.0%	\$112,500	\$21.00	7.0%	\$157,500
Type 2	2	1	\$1.00	1.0%	\$15,000	\$3.00	3.0%	\$45,000	\$5.00	5.0%	\$75,000	\$7.00	7.0%	\$105,000
Type 2A	3	4	\$4.00	1.0%	\$90,000	\$12.00	3.0%	\$270,000	\$20.00	5.0%	\$450,000	\$28.00	7.0%	\$630,000
Type 2B	2	3	\$3.00	1.0%	\$33,750	\$9.00	3.0%	\$101,250	\$15.00	5.0%	\$168,750	\$21.00	7.0%	\$236,250
Type 3	1	1	\$1.00	1.0%	\$32,670	\$3.00	3.0%	\$98,010	\$5.00	5.0%	\$163,350	\$7.00	7.0%	\$228,690
Type 3A	2	4	\$4.00	1.0%	\$132,000	\$12.00	3.0%	\$396,000	\$20.00	5.0%	\$660,000	\$28.00	7.0%	\$924,000
Type 3B	1	3	\$3.00	1.0%	\$49,500	\$9.00	3.0%	\$148,500	\$15.00	5.0%	\$247,500	\$21.00	7.0%	\$346,500
Type 4	2	-	\$0.50		\$15,000	\$1.00		\$30,000	\$2.00		\$60,000	\$3.00		\$90,000
Totals	22				\$461,670			\$1,370,010			\$2,293,350			\$3,216,690
Attrition Rate (-5% for every 1% tax)				5.00%	\$438,587		15.00%	\$1,164,509		25.00%	\$1,720,013		35.00%	\$2,090,849

Figure 12 assumes that 10% of the number of respondents in the CDFA survey apply for and obtain permits. This scenario, and the two that follow, apply the same four base tax rates (\$1/sf, \$3/sf, \$5/sf and \$7/sf) as in Figure 10.

At a base tax rate of \$1 per square foot (\$1/sf outdoor, \$3/sf mixed light, \$4/sf indoor), this scenario would nominally generate \$461,670 in annual revenue for the County. When the attrition factor is applied, that revenue drops to \$438,587.

A base rate of \$3 per square foot (\$3/sf outdoor, \$9/sf mixed light, \$12/sf indoor) would potentially generate \$1,370,010 in annual revenue. When the 5% attrition rate is applied that number drops by 15%, down to \$1,164,509.

With a rate structure of \$5 per square foot for outdoor, \$15 per square foot for mixed-light, and \$20 per square foot for indoor cultivation, this scenario would nominally generate \$2,293,350 in annual revenue for the County. This drops by 25% after attrition, down to \$1,720,013.

Applying a base rate of \$7 per square foot (\$7/sf outdoor, \$21/sf mixed light, \$28/sf indoor) would generate \$3,216,690 before attrition of 35%, which would bring it down to \$2,090,849.

Figure 13

15% of CDFA Survey														
License Type	# of Licenses	Harvest /Year	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax
Type 1	5	1	\$1.00	1.0%	\$16,875	\$3.00	3.0%	\$50,625	\$5.00	5.0%	\$84,375	\$7.00	7.0%	\$118,125
Type 1A	6	4	\$4.00	1.0%	\$90,000	\$12.00	3.0%	\$270,000	\$20.00	5.0%	\$450,000	\$28.00	7.0%	\$630,000
Type 1B	3	3	\$3.00	1.0%	\$33,750	\$9.00	3.0%	\$101,250	\$15.00	5.0%	\$168,750	\$21.00	7.0%	\$236,250
Type 2	3	1	\$1.00	1.0%	\$22,500	\$3.00	3.0%	\$67,500	\$5.00	5.0%	\$112,500	\$7.00	7.0%	\$157,500
Type 2A	5	4	\$4.00	1.0%	\$135,000	\$12.00	3.0%	\$405,000	\$20.00	5.0%	\$675,000	\$28.00	7.0%	\$945,000
Type 2B	2	3	\$3.00	1.0%	\$50,625	\$9.00	3.0%	\$151,875	\$15.00	5.0%	\$253,125	\$21.00	7.0%	\$354,375
Type 3	2	1	\$1.00	1.0%	\$49,005	\$3.00	3.0%	\$147,015	\$5.00	5.0%	\$245,025	\$7.00	7.0%	\$343,035
Type 3A	3	4	\$4.00	1.0%	\$198,000	\$12.00	3.0%	\$594,000	\$20.00	5.0%	\$990,000	\$28.00	7.0%	\$1,386,000
Type 3B	2	3	\$3.00	1.0%	\$74,250	\$9.00	3.0%	\$222,750	\$15.00	5.0%	\$371,250	\$21.00	7.0%	\$519,750
Type 4	3	-	\$0.50		\$22,500	\$1.00		\$45,000	\$2.00		\$90,000	\$3.00		\$135,000
Totals	32				\$692,505			\$2,055,015			\$3,440,025			\$4,825,035
Attrition Rate (-5% for every 1% tax)				5.00%	\$657,880		15.00%	\$1,746,763		25.00%	\$2,580,019		35.00%	\$3,136,273

The scenario in Figure 13 applies these same rate structures to figures that are 15% of the CDFA survey. A base tax rate of \$1 per square foot would nominally generate \$692,505 in annual revenue for the County. 5% attrition would bring that figure down to \$657,880.

A base rate of \$3 per square foot would generate \$2,055,015 in annual revenue before 15% attrition reduces it to \$1,746,763.

Rates of \$5 per square foot for outdoor, \$15 per square foot for mixed-light, and \$20 per square foot for indoor cultivation would nominally generate \$3,440,025 in annual revenue for the County. This drops by 25% after attrition, down to \$2,580,019.

Applying a base rate of \$7 per square foot would generate \$4,825,035 before attrition of 35%, which would bring it down to \$3,136,273.

Figure 14

25% of CDFA Survey														
License Type	# of Licenses	Harvest /Year	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax	Tax per s/f	% Tax Rate	Total Annual Tax
Type 1	8	1	\$1.00	1.0%	\$28,125	\$3.00	3.0%	\$84,375	\$5.00	5.0%	\$140,625	\$7.00	7.0%	\$196,875
Type 1A	10	4	\$4.00	1.0%	\$150,000	\$12.00	3.0%	\$450,000	\$20.00	5.0%	\$750,000	\$28.00	7.0%	\$1,050,000
Type 1B	5	3	\$3.00	1.0%	\$56,250	\$9.00	3.0%	\$168,750	\$15.00	5.0%	\$281,250	\$21.00	7.0%	\$393,750
Type 2	5	1	\$1.00	1.0%	\$37,500	\$3.00	3.0%	\$112,500	\$5.00	5.0%	\$187,500	\$7.00	7.0%	\$262,500
Type 2A	8	4	\$4.00	1.0%	\$225,000	\$12.00	3.0%	\$675,000	\$20.00	5.0%	\$1,125,000	\$28.00	7.0%	\$1,575,000
Type 2B	4	3	\$3.00	1.0%	\$84,375	\$9.00	3.0%	\$253,125	\$15.00	5.0%	\$421,875	\$21.00	7.0%	\$590,625
Type 3	3	1	\$1.00	1.0%	\$81,675	\$3.00	3.0%	\$245,025	\$5.00	5.0%	\$408,375	\$7.00	7.0%	\$571,725
Type 3A	5	4	\$4.00	1.0%	\$330,000	\$12.00	3.0%	\$990,000	\$20.00	5.0%	\$1,650,000	\$28.00	7.0%	\$2,310,000
Type 3B	3	3	\$3.00	1.0%	\$123,750	\$9.00	3.0%	\$371,250	\$15.00	5.0%	\$618,750	\$21.00	7.0%	\$866,250
Type 4	5	-	\$0.50		\$37,500	\$1.00		\$75,000	\$2.00		\$150,000	\$3.00		\$225,000
Totals	54				\$1,154,175			\$3,425,025			\$5,733,375			\$8,041,725
Attrition Rate (-5% for every 1% tax)				5.00%	\$1,096,466		15.00%	\$2,911,271		25.00%	\$4,300,031		35.00%	\$5,227,121

The tax scenario in Figure 14 assumes that 25% of those who responded to the CDFA survey seek and obtain permits. This equates to 54 commercial cannabis cultivators in the unincorporated area of the County.

Applying the \$1 per square foot base rate would generate a nominal \$1,154,175, dropping to \$1,096,466 after 5% attrition.

A base rate of \$3 per square foot would potentially generate revenues of \$3,425,025 before attrition of 15% reduces that down to \$2,911,271.

Applying rates of \$5 for outdoor, \$15 for mixed light and \$20 for indoor would generate \$5,733,375. Attrition of 25% would reduce that revenue to \$4,300,031.

A base rate of \$7 per square foot (\$7/sf outdoor, \$21/sf mixed light, \$28/sf indoor) would nominally generate \$8,041,725. A 35% attrition rate would reduce that figure down to just \$5,227,121.

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 we believe the model here provides a good general illustration of the mechanism by which increasing tax rates will result in diminishing returns.

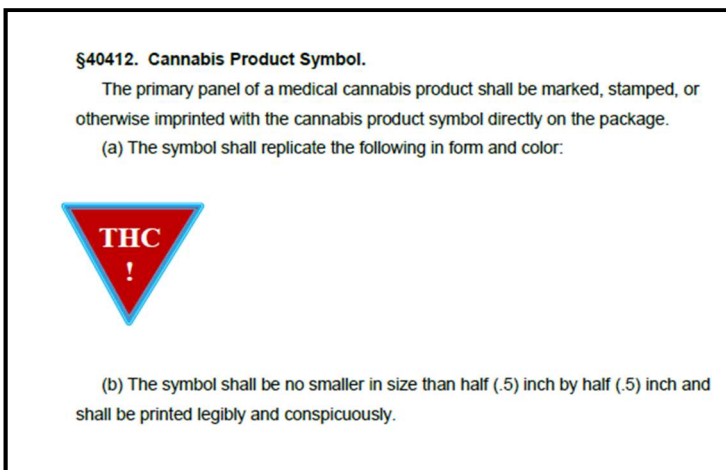
Manufacturers

While MCRSA originally divided manufacturers into two categories for volatile and non-volatile extraction, it's anticipated that implementation of MAUCRSA will expand this to 4 categories to more accurately provide for the breadth and complexity of this sector. Type 6 licenses for extraction using mechanical methods such as pressing, tumbling or dry sifting, or using nonvolatile solvents such as CO₂, will remain, as will Type 7 licenses for extraction using volatile solvents such as butane or propane. Both of these license types also allow the licensee to sell the extract as a product such as Butane Hash Oil or CO₂ oil, or to infuse the extract into tinctures, edibles or topical products. They can also conduct packaging or labeling of their cannabis products.

The new license types that are expected to emerge from the current rule-making process are Type P and Type N. Type P will allow for businesses that only package or repack, or label or relabel, cannabis products. Type N will allow for manufacturers that produce edible or topical products using only infusion processes, and that do not conduct any extractions.

The manufacturing sector is still evolving and expanding, which presents significant opportunities for innovation, business development and job growth. The range of products being produced includes an ever-increasing variety of edibles such as candies, cookies, dressings, and infused drinks such as beer, wine and sodas. Manufacturers may produce their own extract on site, or they may buy extract from other Type 6 or Type 7 licensees. Much like any other industry, cannabis manufacturers often depend upon other businesses to supply them with the various materials or components that go into their final product. These suppliers do not have to be located in or even near the same jurisdiction as the final manufacturer, and may be located anywhere throughout the state.

California's draft regulations for manufactured cannabis currently require that all edible cannabis products be sold in child-proof, tamper-evident packaging. The regulations limit the amount of THC per serving (10mg) and allow no more than 10 servings per package (100mg total). Packaging that includes more than one serving must be resealable so that child-resistance is maintained. The regulations further prohibit any labeling that is designed to be attractive to children, including cartoon characters, imitation candy logos, and any images, characters or phrases that are commonly used to advertise to children and all manufactured cannabis products must be clearly marked with a new universal warning symbol denoting that the product contains THC.



Butane Hash Oil (BHO) and CO₂ Oil are both sold in either raw form or mixed with glycol to enhance viscosity for use in vapor cartridges. Some manufacturers may handle all steps from extraction to packaging the end product in the form of vape pens or other such devices. Others may handle only discreet steps, such as making the raw BHO, which is then sold either directly to retailers or to a Type N manufacturer who will package it into vapor cartridges or other end consumer products. Manufacturers also produce a wide variety of tinctures, as well as topicals such as cannabis infused lotions, salves, sprays, balms, and oils.

Gathering data on the size of the cannabis manufacturing sector is more difficult than for either cultivation or retail dispensaries. Because manufacturers generally do not sell retail, they do not produce sales tax data for us to analyze. The only readily available estimate for the number of manufacturers that may seek to operate in Contra Costa County comes from the CDFA survey dated August 2016. That survey had 35 respondents who registered their interest in seeking either Type 6 or Type 7 manufacturing licenses in the County but, as noted previously, the CDFA survey is not considered to be accurate or methodologically sound.

The Standardized Regulatory Impact Assessment (SRIA) conducted for the Office of Manufactured Cannabis Safety (OMCS) estimates California's total medical cannabis market at \$2.6 billion, of which they estimate manufactured cannabis products to amount to \$650,562,058. Assuming a 65% dispensary markup, the wholesale value of manufactured product sold to dispensaries would be \$227,696,721^{xiv}.

The SRIA noted the difficulty in finding good data for this sector, stating *"There is no direct count of the number of medical cannabis manufacturers in the state, and estimating this number is difficult"*. The assessment noted that the 2016 CDFA survey found 1,971 people who said they were interested in applying for manufacturing licenses at the time, but that this figure is not reliable.

They then looked to compare California's manufacturing sector to Colorado which had a total of 248 licensed cannabis manufacturers in 2015, each with an average of \$1,646,575 in sales. This same metric applied to California would indicate 1,317 cannabis manufacturers. After further discussion with cannabis business owners and industry insiders, the SRIA comes up with an estimate of 1,000 cannabis manufacturing businesses in California, employing 4,140 people. This is an average of 4 new jobs per manufacturer.

Attempting to apportion these 1,000 manufacturers across California on a county by county basis is difficult. Compared with either cultivators or dispensaries, manufacturers are much less tethered to either population centers or abundant land, so there is no rational basis to apportion them either by county, by land base or by population. Both their raw materials and their products are high value and easy to ship, so proximity to either their supply or their market provides little benefit. Given this, manufacturers have greater flexibility than either cultivators or dispensaries to seek out a favorable regulatory and tax climate.

Our assumption is that these businesses will seek out those communities that offer the best mix of amenities, including access to suppliers and the market, related support industries, a welcoming business and social climate and favorable taxes and regulations. Given the wide range of approaches to cannabis by jurisdictions around the State, we assume that 50% (500) of these 1,000 business will be centered in 12 supportive counties, with the other 50% being spread among the remaining 46. This gives an average of around 40 cannabis manufacturers for each of the 12 supportive counties.

The number of these businesses that ultimately locate in Contra Costa County will be directly related to the message the County sends through its policies. The County could seek to develop cannabis manufacturing as an industry cluster by setting attractive regulatory and taxation policies, or it could establish policies that discourage this sector. Because the County has not taken action either way as yet, our analysis will look only at the potential for this industry sector. The likelihood of these or any outcomes is dependent upon policy decisions that have not yet been made.

We believe that Contra Costa, due to its prime location as the eastern gateway to the Bay Area, is well positioned to be a hub for cannabis manufacturing and distribution. As such and as explained above, the county as a whole could accommodate perhaps around 40 cannabis manufacturing businesses. How these are apportioned between the County and the 17 cities is uncertain, but with favorable regulatory

policies and available industrial spaces, the County could potentially attract as many as 20 of these businesses. For this analysis we will use four scenarios, with 5, 10, 15 or 20 manufacturers, and run them at hypothetical tax rates of 3%, 5% and 7% of gross receipts.

HdL has reviewed pro-formas for numerous cannabis manufacturers seeking permits in counties and cities throughout California. From this review we have seen a range of gross receipts from around \$1 million to over \$5 million, with an average in the range of \$2 million to \$3 million. We shall use an average of \$2.5 million for purposes of this analysis.

Figure 15:

Commercial Manufacturers						
Type 6/7/N/P Manufacturer	# of Licenses	Avg Gross Receipts	Total Gross Receipts	Revenue @ 3.0% Tax Rate	Revenue @ 5.0% Tax Rate	Revenue @ 7.0% Tax Rate
Manufacturers	5	\$2,500,000	\$12,500,000	\$375,000	\$625,000	\$875,000
Manufacturers	10	\$2,500,000	\$25,000,000	\$750,000	\$1,250,000	\$1,750,000
Manufacturers	15	\$2,500,000	\$37,500,000	\$1,125,000	\$1,875,000	\$2,625,000
Manufacturers	20	\$2,500,000	\$50,000,000	\$1,500,000	\$2,500,000	\$3,500,000
Attrition rate of -5% for every 1% tax				15.0%	25.0%	35.0%
Revenues after attrition				\$318,750	\$468,750	\$568,750
				\$637,500	\$937,500	\$1,137,500
				\$956,250	\$1,406,250	\$1,706,250
				\$1,275,000	\$1,875,000	\$2,275,000

Depending upon the number of businesses and the tax rate applied, a tax on commercial cannabis manufacturers could potentially generate \$375,000 and \$3,500,000 in annual tax revenue under this scenario. However, the numbers for this model are based on the assumption that these businesses will locate in jurisdictions that offer favorable regulatory and tax rates. Given this, the higher the tax applied, the less likely that the numbers of businesses will materialize. When we apply the same attrition factor as we did for cultivation (-5% for every 1% of tax rate), the potential revenue drops to a range of \$318,750 to \$2,275,000.

When considering taxes for the manufacturing sector, it is important to recognize that manufacturing is not necessarily a singular step involving a single manufacturer. Manufacturing can include volatile extraction of cannabis oil, or using that oil in making edibles or salves, or loading it into cartridges for vape pens, or assembling the loaded cartridges into fully-finished, ready-to-smoke products, or simply handing any of these products for labeling or repackaging. It is very conceivable that the materials for a manufactured cannabis product might pass through the hands of multiple manufacturers on their way to becoming a finished product that is ready to be sold to the consumer, and these various manufacturers or suppliers may be located anywhere in the State.

When manufacturing is taxed, that tax may be applied to multiple separate businesses that may or may not be located in the same jurisdiction. Multiple taxes may be applied, by multiple jurisdictions, at multiple rates and at multiple steps in the product supply chain. This makes it virtually impossible to come up with a generic model of how these cumulative taxes may build on each other.

As a very general example, manufacturing-grade cannabis may be purchased from a cultivator in a county that has a cultivation tax rate of 4.5% of value. Manufacturers may use premium cannabis flower, but

they more commonly use lower-grade leaf or trim, which may sell for around \$200 per pound. The concentrate oil for vaping may sell for \$40 to \$100 per gram retail, or around \$9,000 per pound in wholesale quantities. Another manufacturer may purchase a variety of concentrates from various sources which they then blend together (much like blended wines or coffees) and add terpenes for flavoring before selling the product in vape cartridge form. Lastly, other manufacturers may purchase these pre-filled cartridges and load them into ready-to-use vape pens, or repackage the product as their own private label or house brand.

In this example, each of these manufacturers may be located in a different jurisdiction, with different tax rates being applied to the product at different stages of value. In addition, as the product moves toward the consumer, more of the sale price goes into associated non-cannabis product such as cartridges, vape pens or packaging. A gross-receipts tax on manufacturing or retail typically does not discriminate between the actual cannabis product and other products sold by the same business. Depending on how the tax is structured, a manufacturer or retailer could potentially be paying this additional tax even on non-cannabis marketing paraphernalia such as logo hats and t-shirts.

This potential for manufacturing taxes to be layered one on top of another creates a strong argument for being very conservative when taxing this sector. Even a small tax of 3.0% could potentially grow into a tax of 12% or more by the time the product moves through multiple manufacturers. Given the potential for new businesses and job growth in this sector, we would encourage jurisdictions to be cautious when considering what tax rates, if any, to apply.

Distributors

Distributorships are still emerging in the cannabis industry, and there is not yet sufficient data to indicate the number of unlicensed distributors currently operating, or the number which may seek Type 11 licenses in the future. As with manufacturers, however, where these businesses choose to locate will largely be a function of access to clients and markets, available and affordable locations, and a welcoming regulatory and tax climate. Contra Costa's location lends itself well to distribution centers that can access both the greater San Francisco Bay Area and the Capitol corridor, suggesting that the County could seek to attract more than its proportional share of these businesses, if it chose to.

Unlike either cultivators or manufacturers, distributors do not make, modify or add value to the product. Distributors provide a key role in moving cannabis products to market while ensuring that all State testing and reporting standards have been met. Cannabis or cannabis products can only be transported by a person holding a distributors license.

Under State law, distributor are responsible for storing cannabis batches on their premises while a proper sample is taken for testing by a licensed testing facility. If the product passes all testing standards, the distributor is responsible for product quality assurance by ensuring that proper weight, packaging and labeling standards are met. If the product fails testing, the distributor must ensure that it is properly destroyed in accordance with law. In addition, distributors are responsible for the collection and remittance of State taxes to the Board of Equalization.

The Standardized Regulatory Impact Assessment (SRIA) completed for the Bureau of Cannabis Control^{xv} estimates the ratio of cannabis distributors to retailers and testing labs by assuming that the average dispensary handles 640 pounds per year, and that there is an average of 1 distributor for every 10 dispensaries, and 1 testing lab for every 2 distributors. By this model, the average distributor would handle 6,400 pounds of cannabis per year.

Our analysis of potential cultivation in Contra Costa County estimated a number of growers consistent with up to 25% of the number identified in the CDFA survey. Assuming 1 pound of cannabis for every 10 square feet of cultivation area per cycle, we would anticipate a total production of approximately 110,000 pounds per year. Using the SRIA model, it would take 17 distributors to move this volume of product to market. At just 5% of the CDFA figures, we would anticipate total production of 22,000 pounds, with 3 or 4 distributors being needed.

However, the SRIA model was based upon MCRSA, which was replaced by MAUCRSA to incorporate both medical and adult use cannabis into one regulatory framework. One of the changes allowed under MAUCRSA was to allow cultivators and manufacturers to serve as their own distributors, thus bypassing the need for an independent distributor. We don't yet know the proportion of cultivators who might choose to self-distribute, but if we assume that half will do so, then the number of distributors would also come down by half, giving a high of 8 and a low of 2.

As discussed elsewhere in this report, the cannabis industry does not operate as a closed loop within any county. Cannabis cultivated in one county may be purchased by a manufacturer in another county (or city), before being moved to retailers all around the State. While distributors and testing labs will certainly benefit from proximity to the suppliers and retailers they work with, they can easily be located in a neighboring or nearby county, or in a city within the county. However, this goes both ways. Some cultivators in unincorporated Contra Costa County may choose to utilize distributors from neighboring

Alameda or San Joaquin counties, or from one of the cities within Contra Costa. Similarly, some of the cultivators in these neighboring jurisdictions may choose to use distributors located in Contra Costa.

There are not yet established norms for taxing distributorships. This analysis will consider just two scenarios with 3 and 5 distributors, and will run them with the same tax rates for retailers and manufacturers (3%, 5% and 7%). While there is not an abundance of data to determine the average gross receipts for distributors, HdL has reviewed a number of pro-formas for distributors seeking licenses in other jurisdictions. These indicate anticipated gross receipts in the range of \$2 million to \$3 million per year, with an average of \$2.5 million. We shall use these figures for our revenue projections.

As with cultivation and manufacturing, we have included an attrition factor of -5% for every 1% of tax. Distributors are believed to have high mobility in that they can shop for favorable locations within their general area to locate their business. Distributors do not have the same intensive site infrastructure needs as cultivators or some manufacturers, nor do they require high-visibility locations, like retailers. They need only a general light-industrial warehouse space from which to operate, and reasonable access to highways or major thoroughfares. For distributors, the bottom line when choosing a location is likely to be overall cost, which includes price per square foot and any local taxes.

The business model for distributors is based on a percentage markup on the price paid to their suppliers. This markup is commonly 20% to 30%. Any local tax must be added on to this markup. A 3% local tax on gross receipts would effectively increase a 20% markup to 23%. A 7% tax would increase it to 27%. Even if a distributor chose to locate in a jurisdiction with such tax rates, we would assume that this increased markup would make it less competitive, thus reducing their market share, their gross receipts, and any resulting revenues to the county or city.

For these reasons, we believe that higher taxes may have more of a discouraging impact on distributors than on any other commercial cannabis business type. The County may wish to consider whether or not to tax distributors at all, especially given their key role in ensuring that testing and quality assurance standards have been met, and in collecting and remitting taxes to the State.

Figure 16:

Commercial Distributors						
Type 11 Distributors	# of Licenses	Avg Gross Receipts	Total Gross Receipts	Revenue @ 3.0% Tax Rate	Revenue @ 5.0% Tax Rate	Revenue @ 7.0% Tax Rate
Distributors	3	\$2,500,000	\$7,500,000	\$225,000	\$375,000	\$525,000
Distributors	5	\$2,500,000	\$12,500,000	\$375,000	\$625,000	\$875,000
Attrition rate of -5% for every 1% tax				15.0%	25.0%	35.0%
Revenue after attrition				\$191,250	\$281,250	\$341,250
				\$318,750	\$468,750	\$568,750

Using the figures and rates above, we estimate that a tax rate of 3% of gross receipts applied to 3 distributors could generate around \$225,000 in revenue to the County. A 5% tax rate could generate \$375,000, and a 7% rate could

generate an estimated \$525,000. However, when we include the attrition factor, those figures come down to \$191,250, \$282,250 and \$341,250, respectively.

When we apply these same taxes to 5 distributors, a rate of 3% could potentially generate \$375,000, a rate of 5% could generate \$625,000, and a 7% rate could generate \$875,000. After attrition of -5% for every 1% of tax, those revenue figures come down to \$318,750, \$468,750 and \$568,750, respectively.

Cannabis Retailers

While cannabis cultivation is typically taxed on a per-square-foot basis, the most common approach for taxing other commercial cannabis activities is a tax on the gross receipts of the business. HdL has reviewed confidential data for over 1,400 sales tax accounts for cannabis-related businesses. This data suggests that gross receipts for dispensaries commonly range from \$1,000,000 to \$4,000,000, with a midpoint around \$2,500,000.

The CDFA survey shows 34 people registering their interest in seeking licenses for cannabis retailers in Contra Costa County. The number of cannabis retailers that a city or county can support can be based upon population and neighboring communities. Contra Costa has an estimated population of 1.135 million people, of which around 200,000 live in the unincorporated area. A 2015 survey by the Humboldt Institute for Interdisciplinary Marijuana Studies^{xvi} found an average of 4-6 retailers (or dispensaries) for every 100,000 people statewide, and likely more in communities with higher social acceptance and use. This would allow for between 45 and 68 retailers countywide, with a proportional share of 8 to 12 in the unincorporated area. That same study showed that Contra Costa County had only 1 or 2 dispensaries per 100,000 people, which would indicate between 11 and 22 dispensaries countywide, with 2 to 4 in the unincorporated area.

Confidential sales tax data obtained by HdL shows 40 marijuana-related businesses in the county as a whole registered with the Board of Equalization (payment of sales tax indicates a retail cannabis business). Of these, only 26 report any actual income, with just 9 reporting significant income over the past 4 quarters. Though Contra Costa County does not currently permit any commercial cannabis businesses, there are 7 registered marijuana-related businesses in the unincorporated County, with only 1 legal, non-conforming medical cannabis retailer reporting significant income over the past 4 quarters.

The 9 existing cannabis retailers county-wide brought in a combined \$14,809,700 in gross receipts last year. This averages approximately \$1.65 million in gross receipts each, which is well under the statewide average of \$2.5 million. This figure is presumably low due to existing bans on such businesses in the County and many of the cities, and so does not represent the number of retailers that might come into existence should they be allowed.

The City of Richmond gives us a better indication of sales in a legal, regulated market. The three largest retailers in Contra Costa County are all located in the City of Richmond, which permits medical cannabis dispensaries but caps them at the current three. These three alone grossed over \$13 million, with the largest grossing over \$7 million by itself. The average gross receipts for these three would be \$4.3 million. Applying typical averages of 4-6 retailers per 100,000 residents to the City's population of 110,000 suggests that the City should be able to accommodate 5 or 6 retailers. Dividing those \$13 million in gross receipts over 5 retailers gives an average of \$2.6 million. Dividing it over 6 retailers gives an average of \$2.2 million. This is consistent with our statewide average of \$2.5 million for retailers.

The population-based norms from the study above suggest that the county as a whole could potentially accommodate as many as 68 cannabis retailers, with perhaps as many as 22 serving the unincorporated area. To attract such a large share of such businesses, the County would have to offer favorable regulations and attractive tax rates, and allow retailers in locations that very aggressively pull customers from neighboring cities. We believe this is unlikely in the near term, and may be undesirable to the community at large. For purposes of this fiscal analysis, we shall use four scenarios for the number of retailers in the unincorporated area: a low of 3, a high of 12, and two midrange models at 6 and 9. We have run each of these scenarios using hypothetical gross receipts tax rates of 3%, 5% and 7%.

Figure 17:

Cannabis Dispensaries/Retailers						
License Type	# of Licenses	Avg Gross Receipts	Total Gross Receipts	Revenue @ 3.0% Tax Rate	Revenue @ 5.0% Tax Rate	Revenue @ 7.0% Tax Rate
Retailers	3	\$2,500,000	\$7,500,000	\$225,000	\$375,000	\$525,000
Retailers	6	\$2,500,000	\$15,000,000	\$450,000	\$750,000	\$1,050,000
Retailers	9	\$2,500,000	\$22,500,000	\$675,000	\$1,125,000	\$1,575,000
Retailers	12	\$2,500,000	\$30,000,000	\$900,000	\$1,500,000	\$2,100,000

Figure 17 shows the estimated tax revenue that could be generated under these four scenarios, with 3 possible tax rates for each. The revenues range from a low of \$225,000 (assuming just 3 retailers taxed at 3.0% of gross receipts) up

to a high of \$2,100,000 (assuming 12 retailers taxed at 7.0%).

The gross receipts for dispensaries is variable depending upon the number of dispensaries serving a given size population. Dispensaries are the only cannabis business that specifically serves the local community, rather than feeding into the statewide market, and so the number of dispensaries can be assumed to be somewhat proportional to the local population. Consumer demand for cannabis is assumed to generally be a constant, regardless of its legal status or the availability of dispensaries, and so it's reasonable to expect that more dispensaries will mean fewer customers for each and, thus, lower gross receipts.

However, there will always be an upper limit. We anticipate that providing greater access to dispensaries or retailers would initially facilitate a shift in cannabis purchases happening through legal, regulated means rather than through the black market, especially for non-medical cannabis. Eventually, though, the local cannabis market will reach saturation, at which point new cannabis retailers will simply cannibalize sales from existing retailers. The taxable amount of gross sales will likely plateau at some point, regardless of the number of retailers.

MAUCRSA provides a single license type for cannabis retailers (Type 10), though it is available in both M (Medical) or A (Adult Use) versions. Local jurisdictions have the authority to allow either or both types of retailers. Under California's regulatory program, it is anticipated that consumers will have little reason to purchase cannabis in the medical segment rather than buying in the adult use segment. Both medical and adult use cannabis will pay the State cultivation tax and excise tax, with the only advantage being an exemption from regular sales tax for qualifying patients with a state-issued identification card. Currently there are only about 7,000 such cardholders in California. Eligibility for this limited sales tax exemption will cost consumers approximately \$100 per year, plus time and inconvenience, for a savings of 8.5% in Contra Costa County. It's anticipated that this will provide no price advantage for the vast majority of cannabis consumers^{xvii}.

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^{xviii}. 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, Contra Costa 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^{xix}.

Retailers may have a storefront location, or they may operate via a delivery service. Data collected for a Standardized Regulatory Impact Assessment conducted for the Bureau of Medical Cannabis Regulation (now Bureau of Cannabis Control)^{xx} found that 57% of cannabis retailers statewide use a storefront location, while 47% conduct business using a delivery service. The 4% overlap in the results represents retailers that sell through both a storefront and a delivery service. This 4% figure is believed to be an underestimate due to certain reporting requirements.

The County may also wish to consider structuring its regulations or taxes for cannabis retailers in a way that supports or encourages delivery services, rather than brick-and-mortar stores. It is conceivable that delivery services could potentially be located in ways that increase their penetration into neighboring jurisdictions, thus increasing the amount of sales tax revenue generated for the County. However, this scenario is speculative and would depend upon specific locations and service models. This analysis does not distinguish between the two for purposes of projecting tax revenue, as they would generally serve the same local market.

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