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Analysis of Cannabis Market in California and Case Study Cities

Prepared by:

Applied Development Economics, Inc.

3527 Mt. Diablo Boulevard, CA 94549 ■ 925.934.8712

www.adeusa.com



TABLE OF CONTENTS

- Executive Summary 1
 - Findings 1
- Analysis of California Cannabis Market 4
 - Introduction 4
 - California Cannabis Market Findings 4
 - Case Studies 8
 - Conclusion 11
- Appendix A: Out-of-State Cannabis Data Comparisons 12
 - Colorado Cannabis Market 12
 - Massachusetts Cannabis Market..... 12
 - Oregon Cannabis Market..... 13
 - Washington Cannabis Market 13
- Appendix B: Methodology 15
 - Assumptions and Methodology..... 15

EXECUTIVE SUMMARY

The passage of Proposition 64, the Adult Use of Marijuana Act of 2016 ("AUMA"), legalized recreational cannabis in the state and provided a broad framework from which cannabis businesses would be licensed, taxed, and regulated. While the legal cannabis market in California has shown strong growth trends, the size of the legal market significantly lags behind the market capture that other states have experienced since they legalized adult use cannabis sales. In addition, the implementation of Proposition 64 has resulted in inconsistencies between different jurisdictions, particularly with tax rates, licensing procedures, and land use regulations. With these inconsistencies, the illegal market continues to make up a large majority of the cannabis sales in California.

This study will provide some context to the current status of California's legal cannabis market. The report compiles together the updated revenue and market information about the legal adult use cannabis market in California, and benchmarks it against other states that also have legal cannabis markets. In addition, the study includes case studies for three different California jurisdictions that identify the market potential for legal cannabis and local tax revenues for those jurisdictions.

FINDINGS

CURRENT LEGAL CANNABIS MARKET STATUS IN CALIFORNIA

- California's cannabis tax receipts totaled over \$635 million in 2019, which represents a significant year-over-year jump over the \$397 million collected in 2018.
- According to a 2019 study from Arcview Market Research and BDS Analytics, the illegal cannabis market makes up about three-fourths of the existing cannabis sales in California.
- Taxable retail cannabis sales totaled about \$2.1 billion in 2019 (based on the excise tax receipts), which represents a 62 percent increase from 2018. The current addressable cannabis market (legal and illegal cannabis sales) in California totals about \$7.9 billion.
- California had 980 total cannabis retailers in 2019 (adding microbusinesses and delivery services increased the total to 1,405 businesses).
- In comparison to Colorado, Massachusetts, Oregon, and Washington, California's taxable cannabis sales are lower on a per capita basis. Colorado's per capita taxable cannabis sales are nearly five times greater than in California.
- The legal cannabis demand in California ranges from the existing sales of \$2.1 billion to a potential high of \$9.8 billion if the state market can eventually expand to match Colorado's existing cannabis market performance.
- Legal cannabis demand in California will potentially grow to \$4.8 billion by 2024 (based on growth rates estimated by the Arcview/BDS study).

CASE STUDIES – STOCKTON, SAN BRUNO, AND SACRAMENTO COUNTY (UNINCORPORATED)

The case studies are intended to illustrate the degree of market support for cannabis businesses in three communities that are not currently well established cannabis markets. These case studies illustrate the potential local tax revenue if legal cannabis establishments can meet existing market demand.

STOCKTON CASE STUDY

- The City of Stockton enacted a lottery system beginning in 2019 that allows for two cannabis licenses to be issued annually in each of four different business categories: microbusiness, retail, manufacturing, and cultivation.
- The total legal taxable cannabis demand in Stockton ranges from \$16.5 million (based on the existing per capita taxable cannabis sales in California) to a high of \$77.8 million (based on existing per capita taxable cannabis sales in Colorado), with a current addressable cannabis market (combined legal and illegal cannabis sales) totaling about \$62.8 million. This demand would potentially support 7.8 to 36.9 cannabis establishments.
- Stockton has enacted a local cannabis tax rate of 5%. This local tax rate would potentially support between \$824,500 and \$3.9 million annually.

SAN BRUNO CASE STUDY

- The City of San Bruno has no existing cannabis retailers operating within the city limits, with no existing provisions for licensing or permitting retail cannabis establishments. The City Council has approved a ballot measure that would establish a 10% local tax rate for cannabis businesses. However, the measure would not include any provisions for approving or licensing cannabis businesses in San Bruno.
- The market demand for legal taxable cannabis in San Bruno ranges from \$2.4 million (based on existing California per capita taxable cannabis sales) to \$11.1 million (based on existing Colorado per capita taxable cannabis sales), with an existing addressable cannabis market of \$9.0 million when combining existing legal and illegal cannabis demand. This demand would potentially support 1.1 to 5.3 cannabis establishments.
- The local tax potential for the City of San Bruno ranges from about \$235,300 to \$1.1 million, assuming that the fall ballot measure passes and establishes a local cannabis tax rate of 10%.

UNINCORPORATED SACRAMENTO COUNTY CANNABIS MARKET

- The unincorporated area of Sacramento County does not currently allow cannabis-related businesses of any kind in the unincorporated areas, and has not set a local tax rate or established a framework from which cannabis businesses can eventually operate within the unincorporated areas.
- The market demand for legal taxable cannabis in unincorporated Sacramento County ranges from a low of \$30.7 million (based on the existing per capita taxable cannabis sales in

California) to a high of \$145.1 million (based on existing per capita taxable cannabis sales in Colorado), with an existing addressable cannabis market (combined legal and illegal cannabis sales) of about \$117.0 million. This would potentially support between 14.6 and 68.7 legal cannabis establishments.

- Using the City of Sacramento's local cannabis tax rate of 4%, the local tax potential for unincorporated Sacramento County ranges from \$1.2 million to \$5.8 million annually.

ANALYSIS OF CALIFORNIA CANNABIS MARKET

INTRODUCTION

On November 6, 2016, voters in California passed Proposition 64, the Adult Use of Marijuana Act ("AUMA"). The initiative legalized recreational cannabis in the state and provided a broad framework from which cannabis businesses would be licensed, taxed, and regulated.

Since its adoption, the legal cannabis market in California has grown steadily and currently supports over \$2 billion in legal sales. Between 2018 and 2019, taxable cannabis sales increased by 62 percent. In addition to direct cannabis sales, the retail cannabis industry in California also generates taxable revenues from accessories and point-of-sale items that increase the overall retail sales associated with cannabis sales to about \$2.7 billion.

While these represent positive signs that the uptake for legal cannabis has created an emerging industry in California with the potential to generate significant employment opportunities and revenue to the State, comparisons with other states indicate that California's legal cannabis market continues to underperform by a wide margin.

The implementation of Proposition 64 has seen inconsistencies between different jurisdictions. These inconsistencies range from land use regulations to tax rate and licensing procedures. While some jurisdictions have proactively sought to attract and develop local cannabis businesses, others have taken steps to block cannabis businesses from opening. Because retail cannabis licensing and sales still fall short of potential consumer demand, the illicit cannabis market continues to meet a large majority of this demand.

This study will provide some context to the current status of California's legal cannabis market. The report compiles together the updated revenue and market information about the legal adult use cannabis market in California, and benchmarks it against other states that also have legal cannabis markets. In addition, the study includes case studies for three different California jurisdictions that identify the market potential for legal cannabis and local tax revenues for those jurisdictions.

CALIFORNIA CANNABIS MARKET FINDINGS

The state of the California cannabis market has shown decidedly mixed results. As the state moves forward with implementation of Proposition 64, the Adult Use of Marijuana Act of 2016 ("AUMA"), California sees growing legal cannabis sales, but also difficulties with sales and tax revenues that fall well short of projections.

EXISTING CONDITIONS

According to a 2019 study by Arcview Market Research and BDS Analytics, California's projected annual recreational cannabis sales totaled \$3.1 billion (CDTFA estimates taxable sales of \$2.1 billion

for calendar year 2019). The study also found that the illicit market comprised \$8.7 billion in annual sales, or roughly three-fourths of the total cannabis market.¹

Moving forward, the Arcview/BDS study also projected that through 2024, the legal cannabis market will grow at a compounded annual growth rate (CAGR) of 18.4 percent, and displace a significant portion of the current illicit cannabis sales. By 2024, the study projects that legal cannabis sales will increase to \$7.2 billion annually, while illicit sales will decline to \$6.4 billion.

According to data from CDTFA, California’s taxable retail cannabis sales totaled \$2.1 billion in 2019. This represents a 62 percent increase from the \$1.2 billion in retail cannabis sales in 2018.² As shown in Table 1, the total number of active cannabis retailers also increased from 824 to 980 retail licensees.³ When also including microbusinesses and delivery services, the number of licensees increased from 1,192 to 1,405 businesses.

TABLE 1: SUMMARY OF CALIFORNIA RETAIL CANNABIS PER CAPITA SALES AND AVERAGE SALES PER RETAILER

YEAR	TAXABLE RETAIL CANNABIS SALES	TAXABLE CANNABIS SALES PER CAPITA	CANNABIS RETAILERS (LOW)	CANNABIS RETAILERS (HIGH)	TAXABLE SALES PER RETAILER (LOW)	TAXABLE SALES PER RETAILER (HIGH)
2018	\$1,274,666,667	\$32.01	834	1,192	\$1,069,351	\$1,528,377
2019	\$2,068,666,667	\$51.77	980	1,405	\$1,472,361	\$2,110,884

Source: ADE, Inc.; data from CDTFA, California Department of Finance, and California Bureau of Cannabis Control.

Notes: The low cannabis retailer count only includes retail licensees, while the high count adds microbusinesses and delivery services. The number of licensees reflects those cannabis businesses operating as of July 2020 that began operations prior to the end of 2019.

CANNABIS TAX RECEIPTS

The primary cannabis revenues to the state come from specific taxes, which are levied at different rates.

CANNABIS TAX RATES

Excise Tax

The excise tax for cannabis uses a standard 15 percent rate specified in the approved Proposition 64. This applies to all taxable retail cannabis transactions based on the average market price.

1 Arcview Market Research and BDS Analytics; *California: Lessons From The World’s Largest Cannabis Market*; June 2019.

2 This figure is based on the statewide 15% excise tax rate for taxable cannabis sales. The 2019 figure for taxable sales by cannabis retailers was \$2.7 billion, which also includes non-cannabis taxable sales.

3 In order to keep the retailer count consistent with the taxable sales total, the active cannabis retailer total does not include any licenses approved after December 31, 2019.

Sales Tax

Sales taxes will vary by jurisdiction. The standard allocations for sales taxes begin with a statewide base rate of 7.25 percent.⁴ This follows the formula established under the Bradley-Burns Uniform Sales and Use Tax Law, which allocates sales taxes as follows:

- 6.0 percent to the State
- 1.0 percent to the local jurisdiction for the point of sale (City or County)
- 0.25 percent to the local County transportation fund for the point of sale

Additional local taxes for special districts can be levied as well. These district taxes can range from 0.1 to 1.0 percent, and a specific location can have multiple districts. The highest sales tax rates in California are 10.25 and 10.5 percent, which occur in portions of Los Angeles County.

Cultivation Tax

The cultivation tax is levied on harvested cannabis that enters the commercial market. The current rates are based on weight, and will range from \$1.35 to \$9.65 per ounce and depend on whether the cannabis is a fresh flower or dry flower or dry leaf.⁵

EXISTING CANNABIS TAX RECEIPTS

As shown in Table 2, California saw a marked increase in legal cannabis sales in 2019. The cannabis taxes in California are highly variable by jurisdiction, as is the availability of legal cannabis, as many jurisdictions have yet to enable cannabis retailers to operate within their boundaries. In calendar year 2019, California collected a total of \$635.3 million in cannabis-related taxes, as shown in Table 3. This does not include local taxes enacted at the city and county level.

TABLE 2: CALIFORNIA CANNABIS TAX RECEIPTS, 2018 AND 2019

YEAR	EXCISE TAX	CULTIVATION TAX	SALES TAX	TOTAL TAX
2018	\$191,200,000	\$36,700,000	\$168,600,000	\$396,800,000
2019	\$310,300,000	\$87,000,000	\$238,000,000	\$635,300,000

Source: CDTFA

COMPARISON OF STATE CANNABIS BENCHMARKS

In benchmarking California's legal cannabis sales performance against other states that have legalized recreational cannabis sales, the state generally does not fare well. As shown in Table 3, California's per capita taxable cannabis sales of \$51.77 in 2019 is less than half the per capita sales in Washington, Oregon, and Colorado. California's per capita legal cannabis sales is comparable to Massachusetts. However, 2019 was also Massachusetts' first full year of legal recreational cannabis sales.

⁴ <https://www.cdtfa.ca.gov/taxes-and-fees/local-and-district-taxes.htm>

⁵ <https://www.cdtfa.ca.gov/taxes-and-fees/tax-rates-stfd.htm>

By comparison, California’s average taxable sales per retailer of \$2.1 million is comparable to the average sales in Colorado and Washington.

TABLE 3: COMPARISON OF CALIFORNIA PER CAPITA AND PER RETAILER CANNABIS SALES WITH OTHER STATES

STATE	CANNABIS SALES PER CAPITA	AVERAGE CANNABIS SALES PER RETAILER
California	\$51.77	\$2,110,884
Colorado	\$244.28	\$2,349,171
Massachusetts	\$57.13	\$4,023,808
Oregon	\$160.95	\$1,031,550
Washington	\$140.18	\$2,030,399

Source: ADE, Inc.; data from CDTFA, California Department of Finance, California Bureau of Cannabis Control, Colorado Department of Revenue, Colorado State Demography Office, Massachusetts Cannabis Control Commission, Massachusetts State Data Center, Oregon Department of Revenue, Oregon Liquor Control Commission, PSU Population Research Center, Washington State Liquor and Cannabis Board, and Washington Office of Financial Management, Forecasting and Research Division.

CANNABIS DEMAND IN CALIFORNIA

Table 4 shows the benchmarks for cannabis demand in California. Applying the ratio of legal to illegal cannabis sales from the Arcview/BDS study, California’s existing \$2.1 billion in legal taxable cannabis sales would yield a total addressable cannabis market (legal and illegal sales) of about \$7.8 billion. Legal sales make up about 23% of the total adult use cannabis market in California (not including medicinal cannabis).

In order to estimate the legal cannabis demand in California, the analysis used a range of potential outcomes. Because of California’s existing per capita taxable cannabis sales ranks far behind other states with legalized adult use cannabis sales, the low cannabis demand scenario uses the existing sales in California as the benchmark.

The high cannabis demand scenario uses the per capita taxable cannabis sales in Colorado to illustrate the size of the California market if it can achieve the same magnitude of legal sales. Colorado was the first state in the U.S. to legalize recreational cannabis sales, so it represents a mature market scenario. Using these two scenarios, the size of the legal cannabis market in California ranges from \$2.1 billion to \$9.8 billion.

The Arcview/BDS study projects that total adult use cannabis sales will grow at an annual rate of about 2.9 percent, while legal cannabis will grow at a rate of 18.4 percent. The difference between the growth rates is offset by a projected 6.0 percent annual loss of illegal cannabis sales. Using these growth rates, the potential legal cannabis demand in California by 2024 would grow to \$4.8 billion, with an overall market of \$9.1 billion when accounting for both legal and illegal cannabis sales.

TABLE 4: LEGAL CANNABIS DEMAND BENCHMARKS FOR CALIFORNIA

Existing California Benchmarks	
Population (2019)	39,959,095
Legal Cannabis Demand (Low)	\$2,068,666,667
Legal Cannabis Demand (High)	\$9,761,281,019
Existing Retailers	980
Exiting Retailers (including microbusinesses)	1,405
Total Addressable Cannabis Market (Legal and Illegal Sales)	\$7,874,279,570
2024 California Projection	
Legal Cannabis Demand (Arcview/BDS Growth Projection)	\$4,804,645,161
Total Addressable Cannabis Market (Legal and Illegal Sales)	\$9,075,440,860

Source: ADE, Inc.; data from Arcview Market Research/BDS Analytics, CDTFA, California Department of Finance, California Bureau of Cannabis Control, Colorado Department of Revenue, Colorado State Demography Office.

Notes: The low cannabis demand scenario is based on the per capita taxable cannabis sales in California through the 15% statewide excise tax. The high cannabis demand scenario is based on the per capital taxable cannabis sales in Colorado, which their Department of Revenue reports directly.

CASE STUDIES

INTRODUCTION

In order to provide some local context, the analysis also included case studies of three different jurisdictions in California – Stockton, San Bruno, and unincorporated Sacramento County. These communities are each in different stages of approval/disapproval for cannabis businesses. But, none of them currently have a significant base of cannabis retailers. So, the revenue and business formation potential within these communities should be considered a potential net gain in economic activity for those jurisdictions.

The case studies are intended to illustrate the degree of market support for cannabis businesses in these communities, and the local tax revenue potential if local legal cannabis establishments can meet this market demand. It should be noted that at least some portion of the existing cannabis demand is likely met by legal cannabis establishments operating in other communities. The remainder of the market demand is likely met through illegal cannabis sales.

LOCAL CANNABIS TAXES

Under Proposition 64, cities and counties are allowed to collect their own taxes on cannabis. These tax revenues stay with the local jurisdiction. The local cannabis taxes have also seen very wide ranging outcomes of cannabis legalization. Communities throughout California have enacted tax measures that establish local cannabis tax rates, most of which go through initiatives voted on by local residents. Even for communities that have made no provisions to allow retail cannabis businesses, the tax measures were presented to the voters in order to have the mechanisms in place in the eventuality that cannabis retailers are allowed.

Typically, a local cannabis tax measure will specify a maximum cannabis tax rate, and set an initial tax rate lower than the maximum. In other cases, the initial rate is set by the City Council or Board of Supervisors. Other communities might charge development fees instead of or in addition to the local cannabis taxes.

In addition to cannabis sales, retail cannabis businesses also generate sales from other non-cannabis items, such as smoking accessories and related products. While they do not generate cannabis taxes, these additional retail transactions further increase the sales tax revenues that local and state governments can potentially collect.

STOCKTON CASE STUDY

The City of Stockton has a recently enacted system for issuing cannabis licenses. Their setup entails issuing cannabis licenses with a lottery system. Two licenses are issued in each of four different business categories: microbusiness, retail, manufacturing, and cultivation. This program began in 2019, and the 2020 license lottery was set to take place in June. Stockton has enacted a local cannabis tax rate of 5%.

As shown in Table 5, the market demand for legal taxable cannabis in Stockton ranges from a low of \$16.5 million (based on the existing per capita taxable cannabis sales in California) to a high of \$77.8 million (based on existing per capita taxable cannabis sales in Colorado).

The total addressable cannabis market in Stockton (combined legal and illegal cannabis sales) is currently about \$62.8 million.

TABLE 5: LEGAL CANNABIS DEMAND AND POTENTIAL RETAIL SUPPORT IN CITY OF STOCKTON

STOCKTON CASE STUDY	
1. Population (2020)	318,522
2a. Legal Cannabis Demand (Low)	\$16,489,759
2b. Legal Cannabis Demand (High)	\$77,809,138
3a. Supportable Retailers (Low)	7.8
3b. Supportable Retailers (High)	36.9
4. Currently Allowed Retailers (2019 and 2020 License Lottery)	4
5a. Local Tax Potential (Low Based on 5% rate)	\$824,488
5b. Local Tax Potential (High Based on 5% rate)	\$3,890,457
6. Current Addressable Cannabis Market (Legal and Illegal Sales)	\$62,767,470

Source: ADE, Inc.; data from Arcview Market Research/BDS Analytics, CDTFA, California Department of Finance, California Bureau of Cannabis Control, Colorado Department of Revenue, Colorado State Demography Office.

Notes: The low cannabis demand scenario is based on the per capita taxable cannabis sales in California through the 15% statewide excise tax. The high cannabis demand scenario is based on the per capita taxable cannabis sales in Colorado, which their Department of Revenue reports directly.

The number of supportable legal cannabis retailers will range from about 7.8 to 36.9 establishments. This is a conservative estimate because it uses the taxable sales per retailer average for California. It should be further noted that this benchmark average does not include microbusinesses. Using the benchmark average that includes microbusinesses in the total, the number of supportable establishments increases to 52.8.

Local tax potential for the City of Stockton, based on its existing local cannabis tax rate of 5%, ranges from about \$824,500 to \$3.9 million annually.

SAN BRUNO CASE STUDY

The City of San Bruno is an untapped cannabis market with no existing cannabis retailers operating within the city limits. Even though San Bruno has no framework in place for licensing or permitting retail cannabis establishments, the community has taken initial steps towards the eventuality that legal cannabis retailers do open for business in San Bruno at a future date. On June 29, 2020, the San Bruno City Council passed a resolution to include a ballot measure for the fall election that sets a local cannabis tax of 10%. The measure does not include any provisions for approving or licensing cannabis businesses in San Bruno.

As shown in Table 6, market demand for legal taxable cannabis in San Bruno ranges from \$2.4 million (based on existing California per capita taxable cannabis sales) to \$11.1 million (based on existing Colorado per capita taxable cannabis sales). The total addressable cannabis market for San Bruno is \$9.0 million when combining existing legal and illegal cannabis demand.

The supportable number of legal cannabis retailers will range from 1.1 to 5.3 establishments, based on existing average cannabis retail establishment sales in California. Using the lower benchmark average sales per establishment that accounts for microbusinesses would increase the high range of supportable establishments to 7.5.

The local tax potential for the City of San Bruno ranges from about \$235,300 to \$1.1 million. This assumes that the fall ballot measure passes and establishes a local cannabis tax rate of 10%.

TABLE 6: LEGAL CANNABIS DEMAND AND POTENTIAL RETAIL SUPPORT IN CITY OF SAN BRUNO
SAN BRUNO CASE STUDY

1. Population (2020)	45,454
2a. Legal Cannabis Demand (Low)	\$2,353,136
2b. Legal Cannabis Demand (High)	\$11,103,586
3a. Supportable Retailers (Low)	1.1
3b. Supportable Retailers (High)	5.3
4. Currently Allowed Retailers	0
5a. Local Tax Potential (Low Based on 10% rate)	\$235,314
5b. Local Tax Potential (High Based on 10% rate)	\$1,110,359
6. Current Addressable Cannabis Market (Legal and Illegal Sales)	\$8,957,097

Source: ADE, Inc.; data from Arcview Market Research/BDS Analytics, CDTFA, California Department of Finance, California Bureau of Cannabis Control, Colorado Department of Revenue, Colorado State Demography Office.

UNINCORPORATED SACRAMENTO COUNTY CANNABIS MARKET

The unincorporated area of Sacramento County represents the most restrictive of the three case study communities. Even though some local jurisdictions in Sacramento County, including the City of Sacramento, have provisions for licensing and collecting taxes from cannabis retailers, the County itself does not currently allow cannabis-related businesses of any kind in the unincorporated areas. The County also has not taken the step of setting a local tax rate or establishing a framework from which cannabis businesses can eventually operate within the unincorporated areas.

As shown in Table 7, the market demand for legal taxable cannabis in unincorporated Sacramento County ranges from a low of \$30.7 million (based on the existing per capita taxable cannabis sales in

California) to a high of \$145.1 million (based on existing per capita taxable cannabis sales in Colorado).The total addressable cannabis market in unincorporated Sacramento County (combined legal and illegal cannabis sales) is about \$117.0 million (based data from the Arcview/BDS study).

TABLE 7: LEGAL CANNABIS DEMAND AND POTENTIAL RETAIL SUPPORT IN SACRAMENTO COUNTY (UNINCORPORATED AREAS ONLY)

SACRAMENTO COUNTY (UNINCORPORATED) CASE STUDY	
Population (2020)	593,801
Legal Cannabis Demand (Low)	\$30,740,845
Legal Cannabis Demand (High)	\$145,054,797
Supportable Retailers (Low)	14.6
Supportable Retailers (High)	68.7
Existing Cannabis Businesses and Dispensaries	0
Local Tax Potential (Low Based on 4% rate)	\$1,229,634
Local Tax Potential (High Based on 4% rate)	\$5,802,192
Total Addressable Cannabis Market (Legal and Illegal Sales)	\$117,013,538

Source: ADE, Inc.; data from Arcview Market Research/BDS Analytics, CDTFA, California Department of Finance, California Bureau of Cannabis Control, Colorado Department of Revenue, Colorado State Demography Office.

The number of supportable legal cannabis retailers will range from about 14.6 to 68.7 establishments. Using the more lenient benchmark average that includes microbusinesses, the number of supportable establishments increases to a high of 98.5.

Using the City of Sacramento’s local tax rate of 4% as an assumption, the local tax potential for unincorporated Sacramento County ranges from \$1.2 million to \$5.8 million annually.

CONCLUSION

Based on our independent and objective analysis, cannabis businesses show significant market potential for additional legal sales throughout California. This would result in substantial increases in tax receipts for state and local governments if the number of retail cannabis establishments expands to meet local demand in those communities that do not currently have legal retail cannabis sales. Because of the state’s underperforming retail cannabis market, the range of potential market support has significant upside. The market demand already exists, with most of the demand currently met through illicit sales channels that generate no tax revenues. As local governments struggle with meeting their budget needs and providing essential services to their residents, legal cannabis sales represent a source of revenue that has remained untapped by most California jurisdictions.

APPENDIX A: OUT-OF-STATE CANNABIS DATA COMPARISONS

COLORADO CANNABIS MARKET

Colorado was the first state to legalize recreational cannabis, and has the most mature market among U.S. states. Even so, the cannabis market in Colorado has maintained a high level of growth since 2014. Between 2014 and 2019, Colorado’s recreational cannabis sales have increased from \$303.2 million to \$1.4 billion. During this time, the per capita recreational cannabis sales increased from \$56.65 to \$244.28. As the recreational cannabis market in Colorado has taken off, the medicinal cannabis market fell from a peak of \$445.6 million in 2016 to \$332.2 million in 2018.

TABLE A-1: SUMMARY OF COLORADO RETAIL CANNABIS PER CAPITA SALES AND AVERAGE SALES PER RETAILER

YEAR	MEDICINAL CANNABIS SALES	RETAIL RECREATIONAL CANNABIS SALES	RETAIL SALES PER CAPITA	RETAILERS	SALES PER ESTABLISHMENT
2014	\$380,284,040	\$303,239,699	\$56.65	n/a	n/a
2015	\$418,054,912	\$577,536,343	\$105.88	n/a	n/a
2016	\$445,616,062	\$861,587,411	\$155.44	n/a	n/a
2017	\$416,516,782	\$1,091,185,437	\$194.28	n/a	n/a
2018	\$332,173,491	\$1,213,517,589	\$213.11	n/a	n/a
2019	\$338,488,190	\$1,409,502,438	\$244.28	600	\$2,349,171

Source: ADE, Inc.; data from Colorado Department of Revenue, Colorado State Demography Office.

MASSACHUSETTS CANNABIS MARKET

Massachusetts began legal cannabis sales in 2018. From December 2018 through November 2019, Massachusetts saw gross cannabis sales of over \$394.3 million. The state currently has 98 fully licensed cannabis businesses, with 36 of them operating as retailers. About 129 licensees are either operating or approved on a provisional basis. Nearly 4,400 license applications are in-process. This indicates that the retail cannabis market in Massachusetts has not yet stabilized. Those businesses that are fully licensed currently generate very high average sales. As more cannabis retailers receive their final licenses, legal cannabis sales will likely continue to increase. However, with the large number of licenses in process, new retailers will likely also bring down the average sales per establishment.

TABLE A-2: MASSACHUSETTS RETAIL CANNABIS INDICATORS

ADULT USE CANNABIS LICENSE	
CATEGORY	LICENSEES
Final License	98
Provisional License	99
Provisional Approval	30
Denied	4
In Process	4,366
FINAL LICENSE CATEGORY	LICENSEES
Retail	36
Cultivator	31
Manufacturer	26
Transporter	2
Microbusiness	1
Testing Laboratory	2
Gross Cannabis Sales (12/18 to 11/19)	\$394,333,154
Gross Sales Per Retailer	\$4,023,808
Massachusetts Population	6,902,149
Gross Sales Per Capita	\$57.13

Source: ADE, Inc.; data from Massachusetts Cannabis Control Commission, Massachusetts State Data Center.

OREGON CANNABIS MARKET

Between 2017 and 2019, Oregon saw a steady rise in recreational cannabis sales, with estimated sales increasing from \$403.8 million to \$681.9 million. During this time, the per capita cannabis sales increased from \$97.51 to \$160.95. Oregon has a total of 661 cannabis retailers, with a calculated average sales per retailer of about \$1.0 million.

TABLE A-3: SUMMARY OF OREGON RETAIL CANNABIS PER CAPITA SALES AND AVERAGE SALES PER RETAILER

YEAR	STATE CANNABIS TAX	TAXABLE RECREATIONAL CANNABIS SALES	PER CAPITA RECREATIONAL CANNABIS SALES	RETAILERS	TAXABLE SALES PER RETAILER
2017	\$68,646,246	\$403,801,445	\$97.51	n/a	n/a
2018	\$94,226,985	\$554,276,381	\$132.12	n/a	n/a
2019	\$115,915,277	\$681,854,569	\$160.95	661	\$1,031,550
Excise Tax Rate	17%				

Source: ADE, Inc.; data from Oregon Department of Revenue, Oregon Liquor Control Commission, PSU Population Research Center.

Note: The taxable recreational cannabis sales are based on the state excise tax rate of 17%.

WASHINGTON CANNABIS MARKET

Retail recreational cannabis sales in Washington showed a comparatively slow growth between 2018 and 2019. However, the state's 521 cannabis retailers averaged over \$2.0 million. With an excise tax rate of 37 percent, Washington has a very high tax on cannabis. However, this rate does not vary to the same extent that it does in California. In addition, the per capita cannabis sales are very close to the average for Oregon.

TABLE A-4: SUMMARY OF WASHINGTON RETAIL CANNABIS PER CAPITA SALES AND AVERAGE SALES PER RETAILER

YEAR	CANNABIS TAX REVENUE	TAXABLE CANNABIS SALES	TAXABLE CANNABIS SALES PER CAPITA	RETAILERS	TAXABLE SALES PER RETAILER
FY 2018	\$362,000,000	\$978,378,378	\$131.72	n/a	n/a
FY 2019	\$391,400,000	\$1,057,837,838	\$140.18	521	\$2,030,399
Excise Tax Rate	37%				

Source: ADE, Inc.; data from Washington State Liquor and Cannabis Board, and Washington Office of Financial Management, Forecasting and Research Division.

APPENDIX B: METHODOLOGY

ASSUMPTIONS AND METHODOLOGY

- The existing cannabis retail establishments and taxable sales came from the Bureau of Cannabis Control (“BCC”). The number of retail establishments includes a combination of storefront businesses, no storefront retailers, and temporary retailers. The higher number of existing cannabis businesses includes microbusinesses and delivery services that could potentially generate retail sales, even though their revenues also came from other sources.
- The breakdown of tax collections came from the BCC quarterly press releases.
- The California projection of future cannabis demand through 2024 is based on the growth rates projected in the 2019 study by Arcview Market Research and BDS Analytics. These growth rates were applied to the estimated legal cannabis sales that were calculated using the excise tax data from the California Department of Tax and Fee Administration (CDTFA).

CASE STUDY METHODOLOGY

The case study benchmarks correspond to the numbered lines on the tables for the three case studies.

- 1. Population: The population figure comes from the California Department of Finance. The per capita benchmark for California was calculated based on the 2019 population and the 2019 taxable sales figures. For the individual jurisdictions in the case studies, the analysis is based on the population estimate for January 1, 2020.
- 2a. Cannabis Demand (Low): The legal cannabis demand assumes a range with the existing cannabis demand representing the low estimate. The existing cannabis demand is based on CDTFA excise tax collections in 2019. Applying the 15% excise tax rate, the resulting estimate of \$2.1 billion in taxable sales was divided by the state population in January 2019. The resulting benchmark comes out to \$51.77 in taxable legal cannabis demand per capita.
- 2b. Cannabis Demand (High): The high cannabis demand uses Colorado as the benchmark. The Colorado Department of Revenue separately tracks medicinal and adult use (taxable) cannabis sales. This data is very useful because it does not just report the tax revenues, but the actual cannabis sales. The taxable sales total was divided by the 2019 Colorado state population as reported by the Colorado State Demography Office to produce the benchmark of \$244.28 in taxable cannabis sales per capita. Because it is the most mature adult use cannabis market in the country, Colorado was considered more representative of what a market area in California can potentially support once it reaches a more stable and mature state. However, it should be noted that the Colorado has continued to grow at a high rate since recreational cannabis sales started in 2014. The use of the Colorado benchmark as a high cannabis demand benchmark does not account for illegal cannabis demand that might remain in the Colorado market.

- 3a and b. Supportable Retailers: The number of supportable retailers comes from the average sales per retail cannabis license in California. The benchmark average divides the total taxable cannabis sales reported by CDTFA into the total number of retail cannabis licenses in California. The retail license total comes from the California Bureau of Cannabis Control database. Licenses added after December 31, 2019 were not included in the total, and the license inventory also does not account for any retailers that might have closed in 2020. The low estimate of supportable retailers is based on the existing estimated legal cannabis demand, while the high estimate is based on the demand using the higher Colorado per capita cannabis sales benchmark. The number of supportable cannabis retailers can further increase by adding microbusinesses to the retail cannabis licensee count.
- 4. Currently Allowed Retailers: The number of allowed cannabis businesses is based on local laws and licensing procedures. For Stockton, their cannabis license lottery allows two retail licenses annually, and the first lottery occurred in 2019 with a second lottery concluding in June 2020. San Bruno and Sacramento County currently do not allow cannabis establishments.
- 5. Local Tax Potential: This figure is based on the local tax revenues that the case study jurisdictions would collect if the legal cannabis demand translates into actual local sales. The tax rates are based on what the local jurisdictions currently allow (or in the case of San Bruno, have proposed in a ballot measure).
- 6. Current Addressable Cannabis Market: Multiple publications assume that the majority of adult use cannabis currently comes through illegal sales. The figure used for this estimate comes from the 2019 study by Arcview/BDS. The study estimated that legal cannabis sales in California would total \$3.1 billion in California, and make up about 23 percent of the total recreational cannabis sales. This percentage share is applied to the existing legal cannabis demand to come up with the total addressable cannabis market demand. This represents a combination of legal and illegal sales.