

**Economic Impacts of the Cannabis Industry  
Northern California Counties**

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**January 2024**

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## Executive Summary

This study examined six California counties, each with a history in cannabis cultivation and innovation: Del Norte, Humboldt, Lake, Mendocino, Sonoma, and Trinity. This study was funded through a California Department of Cannabis Control (DCC) grant administered by CalPoly Humboldt. Our team gathered and generated data from various sources to measure the economic impacts of cannabis businesses on these study-area counties. Economic impacts start with a specific industry metric (for example, employment or business revenue) as a rock entering a still pond; the rock's size determines the subsequent "ripple" or multiplier effects based on the area's current industry and worker mix of potential vendors to and employees of the cannabis industry. We used the IMPLAN® model to estimate the cannabis industry's broader economic impacts once initial effects (direct impacts) were determined. We refer to broader impacts as indirect (vendor incomes and employee spending) or induced (broader spending); our results provide policymakers and advocates with a way to track the incomes, jobs supported, wages paid, and tax revenues generated from the cannabis industry.

The regulated cannabis industry in California is a mix of new and previously unregulated cannabis businesses. The study-area counties are dominant in cultivation, with historic brand recognition, a mix of markets for both medical and adult-use cannabis, and communities that are closely tied to the cannabis industry. These six counties are generally rural, with Sonoma County a mix of rural and larger suburban communities. Cultivation is the most significant portion of regulated cannabis businesses in these six counties. Cannabis businesses are in four major supply-chain "nodes" or links, with other license types described in this report:

- Cultivation or farming (with processors and nurseries related), with four growing methods;
  - Outdoor, mixed light tier 1 (light deprivation); mixed light tier 2 (similar to greenhouse with more light control); indoor (high-intensity lighting and complete light control);
- Manufacturing (with related packaging or repackaging tasks);
- Distribution (with related testing services as a vendor relationship); and
- Retail (with emerging, on-premise retail such as lounges).

The literature on cannabis industry economics is nascent and primarily focused on tax environments and changes that may affect cannabis businesses, as well as how cannabis industry "clusters" (including allied industries as focused vendors on cannabis businesses, including tourism) may develop in states and regions where a history of cannabis farming and businesses exists as of 2023. The literature recognized that a lack of consistent data is a challenge to track this industry, even years after decriminalization or legalization in multiple states. We also found data availability a significant challenge in this study. We used 2022 as a baseline year of operations in these six counties. We used a mix of survey data our team generated, data from interviews with cannabis businesses and advocates and service providers, economic data about the study-area counties, track and trace (METRC) data from the California Department of Cannabis Control (DCC) and other third-party data sources on the cannabis industry in California, to generate estimates of economic activity for each of the supply-chain nodes. We also provide examples of proforma profit and loss statements to understand line-item costs and the importance of taxes and compliance to owner returns on their time and investment.

Our interviews with regional cannabis businesses revealed issues with maintaining prices as regulated markets have experienced increased competition and production across California. Concerns over taxation, land-use inflexibility, regulatory burden, and conflicts and confusion between local-level and state-level policies were

critical to these six counties. Tourism connected to cannabis consumption or culture in these counties can help marketing and local communities. Still, travel infrastructure (few airports and rural settings for most of these counties) makes such expansions difficult.

Key assumptions from our data collection and ultimately used in our estimates included:

- Cultivation:
  - Weighted-average prices for raw and packaged cannabis commodities depended on the growing method, stated as per pound/gram:
    - Outdoor: \$205.70/\$0.45
    - Mixed Light Tier 1: \$292.06/\$0.64
    - Mixed Light Tier 2: \$588.21/\$1.30
    - Indoor: \$978.57/\$2.16
  - METRC data provided harvested and salable flower volume in grams/pounds by county, and in some cases prices by weight (grams) for transactions among supply-chain nodes;
  - On average, we assumed five (5) employees per acre of farm, regardless of farming methods;
    - Outdoor farms have 1.25 harvests/yields per year; mixed light Tier 1 farms have two (2) yields per year; mixed-light Tier 2 or indoor farms have five (5) yields per year;
    - 28 grams of dry salable flower is harvested per square foot of defined cultivation space;
    - Harvested cannabis was considered salable in three packaged forms: flower, leaf, and fresh cannabis plant, as defined in the METRC database;
  - Unregulated cultivation is assumed to be a 30-percent addition to regulated harvest volumes;
    - The literature, our survey and interview data, and practitioner assessments on the cannabis industry supported this assumption;
    - We do not count any unregulated impacts after cultivation to remain conservative, and we do not apply cannabis-specific taxes to estimated unregulated activity;
- Manufacturing businesses may source raw cannabis from anywhere in California and act like medicinal or botanical product manufacturers in terms of tracking broader economic impacts;
  - We used survey data, information on similar firms, and 2022 track-and-trace transactions data to estimate manufacturing employment per active license as the basis of the economic impact estimates;
- Distribution businesses, due to security needs, act like courier or messenger services in terms of broader impacts;
  - We do not include any economic impacts from distributor licenses that are “transport-only”;
  - We used survey data, information on similar firms, and 2022 track-and-trace transactions data to estimate distribution employment per active license as the basis of the economic impact estimates;
- Taxable retail sales as reported for the calendar year 2022 by the California Department of Tax and Fee Administration (CDTFA) as the basis of the economic impact estimates of retail cannabis sales by county;
- Each county has its own approach to local cannabis taxes across the supply chain in terms of estimating state and local taxes;
  - IRS Section 280E applies to all parts of the supply chain, increasing federal taxable income (and thus federal tax estimates from regional cannabis activity) compared to those without that rule.

This study also provides algorithms that can be used to quickly estimate the broader economic impacts of a new or expanding cannabis business. We also provide algorithms to assess the impacts of \$10 million in capital expenditures for mixed-light tier 2 farms and retail cannabis stores. Users of these data can show the

effects of new and closing businesses in the cannabis industry for the study area. Table EX-1 summarizes the economic impact results in each study-area county.

### Key Findings

Revenues earned by cannabis businesses create an ability to pay for costs, including worker wages and salaries. Using our available data and assumptions:

- Value-added income estimates below suggest what revenues are retained in the study-area counties versus flowing out to other counties based on vendor and worker locations;
- An estimate of 472 acres of cannabis were harvested under 3,697 cultivation licenses in 2022, and another 140 unregulated acres in the study-area counties;
  - Mixed-light tier 1 and outdoor grow method licenses were 74 percent of study-area cultivation licenses in 2022, approximately 56.2 percent of active licenses statewide;
- An estimate of over \$1.26 billion in raw cannabis commodity value came from over 1.8 billion grams of harvested, packaged cannabis in 2022, including 676.4 million grams of harvested flower and for study-area cannabis farmers;
  - 9,255 full-time equivalent contract or payroll workers were supported by cannabis farmers in 2022; 6,245 full-time equivalent contract or direct-employment workers were hired by cannabis farmers in 2022 in the study-area counties;
    - Workers supported directly or indirectly by cannabis farmers were paid an estimated \$554 million in wages and fees in 2022 ;
  - \$1.447 billion in value-added income (retained by regional businesses after paying for costs from vendors outside the region) was earned due to cultivator activity in 2022;
  - Over \$285.6 million in state and local taxes were paid in 2022, under the local and state taxes in effect for 2022;
- Manufacturers created an estimated \$241 million in value-added income in these six counties;
  - After the broader economic impacts of regional cannabis product manufacturing, \$313.5 million in value-added income in 2022 across the six counties;
  - An estimate of 760 full-time equivalent contract or payroll workers were directly supported by manufacturers, regionally supporting a total of 1,377 workers and over \$101.9 million in wages and fees;
  - Over \$38.8 million in state and local taxes were generated from manufacturing's economic impacts;
- Distributors created \$15.2 million in value-added to packaged cannabis;
  - After the broader economic impacts of regional cannabis product distribution, \$18.7 million in value-added income in 2022 across the six counties;
  - An estimate of over 348 full-time equivalent contract or payroll workers were directly supported due to cannabis distribution activities, paying over \$8.2 million in wages or fees;
  - Over \$1.5 million in state and local tax revenue is estimated to have been generated due to cannabis distribution at the state and local levels;
- Approximately \$179.1 million of regulated retail sales took place in the study-area counties in 2022;
  - Retail sales were \$5.38 billion in the calendar year 2022 across California; these six counties provide raw cannabis for products sold across the state;
  - The value added by retailers was \$36.9 million as goods from all over California were sold locally, and costs of goods sold thus were spent across California;
  - An estimated 647 full-time equivalent contract or payroll workers across the six counties, paid \$28 million in wages and fees and
  - Over \$57.4 million in state and local taxes were generated by cannabis retailers across the six counties.

Recommendations include the following considerations.

- Public policy needs to focus on incentives for the conversion of currently unregulated businesses through funded actions such as:
  - Provide tax holidays and exemptions, especially for smaller, generational farmers (equity focus);
  - Provide entrepreneurship training and support for business conversions;
  - Re-examine local zoning and land-use rules for each sector of cannabis activity;
  - Reduced compliance costs and processes;
- Track cannabis harvests as any other agricultural commodity, also tracking cannabis labor-market activity, harvest prices and volumes, and estimate “farm-gate” outcomes through a statewide crop report with county-level metrics rolled up to state totals (like the crush report for wine grapes);
- Work with federally-elected officials to reduce barriers to merchant services and credit market availability, with or without re-schedule or de-schedule changes for cannabis to provide a more competitive balance within the cannabis industry and among its competitors in other industries;
  - For example, availability of enforceable escrow accounts for harvested and manufactured product invoicing would support better cash flow timing from operations.

**Table EX-1: Summary of Estimated Economic Impacts, 2022 Cannabis Industry Operations, Study-Area Counties**

	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area
<b>Cultivation</b>							
Direct Impacts (Revenues)	\$2,167,400	\$351,482,900	\$97,415,300	\$313,974,600	\$258,293,600	\$35,211,200	\$1,058,545,000
Value Added Income (\$)	\$2,625,300	\$545,224,200	\$121,771,400	\$397,233,800	\$337,392,300	\$43,212,300	\$1,447,459,300
Jobs Supported in County (Full-Time Equivalent Workers)	11	4,812	1,325	1,594	845	668	9,255
State and Local Taxes (\$)	\$373,950	\$101,467,650	\$28,567,130	\$80,293,830	\$67,093,240	\$7,821,300	\$285,617,100
<b>Manufacturing</b>							
Direct Impacts (Value Added)	\$2,587,700	\$83,193,100	\$15,094,900	\$51,592,000	\$86,434,300	\$2,156,400	\$241,058,400
Value Added Income (\$)	\$3,262,600	\$109,660,700	\$19,032,000	\$60,251,600	\$118,641,800	\$2,718,900	\$313,567,600
Jobs Supported in County (Full-Time Equivalent Workers)	10	553	57	170	580	8	1,378
State and Local Taxes (\$)	\$53,400	\$9,804,500	\$1,330,000	\$4,058,100	\$24,058,400	\$179,300	\$39,483,700
<b>Distribution</b>							
Direct Impacts (Value Added)	\$351,800	\$5,460,900	\$716,100	\$3,832,300	\$4,630,300	\$204,300	\$15,195,700
Value Added Income (\$)	\$413,100	\$6,819,000	\$828,400	\$4,560,000	\$5,907,100	\$222,900	\$18,750,500
Jobs Supported in County (Full-Time Equivalent Workers)	5	153	16	58	113	4	349
State and Local Taxes (\$)	\$41,300	\$551,700	\$70,000	\$521,200	\$317,700	\$40,800	\$1,542,700
<b>Retail</b>							
Retail Sales (Revenues)	\$3,706,388	\$35,889,228	\$7,661,646	\$22,567,490	\$108,327,623	\$1,000,000	\$179,152,375
Direct Impacts (Value Added)	\$777,900	\$7,263,100	\$1,528,300	\$4,626,000	\$22,527,200	\$189,700	\$36,912,200
Value Added Income (\$)	\$946,700	\$10,202,900	\$1,954,200	\$6,368,800	\$33,784,000	\$229,600	\$53,486,200
Jobs Supported in County (Full-Time Equivalent Workers)	11.6	133.0	27.4	80.8	390.6	3.7	647
State and Local Taxes (\$)	\$1,266,800	\$10,720,300	\$2,556,700	\$7,827,400	\$34,801,600	\$305,300	\$57,478,100

Notes: These estimates include unregulated; detailed tables in the report show the estimated impacts of unregulated cannabis activity. Trinity's retail outcomes are based on a hypothetical \$1 million in retail revenue.

# Economic Impacts of the Cannabis Industry

Del Norte, Humboldt, Lake, Mendocino, Sonoma, and Trinity counties in California

## 1. Introduction

The cannabis industry in California creates business revenues, wages, jobs, and tax revenues for hundreds of industries, thousands of workers, and local governments throughout California. This study focuses on six California counties: Del Norte, Humboldt, Lake, Mendocino, Sonoma, and Trinity counties (this group is called the “study area” counties from here). This report considers cannabis as an agricultural commodity. This study provides methods to determine the value of transactions and subsequent impacts on industries far removed from how cannabis is harvested, manufactured, distributed, and sold. Manufactured products are restricted in the maximum amount of tetrahydrocannabinol (THC) that can be in a packaged product for sale. Such restrictions lead to more packaging needs, labeling requirements, and “allied” industry activity (non-cannabis businesses that act as direct vendors to parts of the cannabis supply chain based on industry needs and demand).

The passage of California Proposition 64 in 2016 allowed legal, recreational use of cannabis products for adults beginning on January 1, 2018. The change to a regulated, recreational, adult-use marketplace from legal medical (regulated) and illegal traditional (unregulated) markets created both opportunities and challenges for existing and new cannabis businesses. Public policy has struggled with a regulatory framework combining temperance and incentives for unregulated operations to become regulated. Historical industry examples that faced similar problems are rare. Alcohol prohibition ending in December 1933 with the US Constitution’s 21st Amendment has some similarities. There is no nationwide, legal market for California cannabis production as of December 2023 (the time of this writing).<sup>1</sup> The tax structure for legal cannabis is still evolving; every California municipality (county and city) can make local policy that adds either a tax or compliance layer to existing state policy. Some risk exists of adjacent “dry” and “wet” regions in terms of legal cannabis availability outside a medical reason.<sup>2</sup> Not having a national policy restricts what economic impacts can come from these counties’ cannabis industries due to a lack of legal export opportunities.<sup>3</sup>

We used official survey and interview data to capture as much of the regulated supply chain’s economic outcomes as possible. Data include license mix, harvest, sales volumes, wholesale and retail revenue estimates, and survey data on business cost structure. Official “track and trace” data was provided by the California Department of Cannabis Control (DCC) using a database system called METRC as described throughout this study; taxable sales data from the California Department of Tax and Fee Administration

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<sup>1</sup> The nationalization of recreational-use cannabis in Canada starting in October 2018 provides an example of national policies.

<sup>2</sup> See <https://cannabis.ca.gov/cannabis-laws/where-cannabis-businesses-are-allowed/> for a map to track counties that do and do not allow cannabis businesses as of 2023 in California based on local regulations.

<sup>3</sup> For California statewide, the cannabis regulator is the Department of Cannabis Control (DCC): <https://cannabis.ca.gov/>

(CDTFA) and other government-revenue data also helped shape the economic estimates on regulated activity.

For modern industry research, it is rare to have robust regulated and unregulated markets working parallel. Data remain challenging to find in defining the cannabis market's actual size because of continued unregulated activity. We assume below that cultivation is where unregulated and regulated cannabis markets and economic activities are most similar in terms of economic impacts versus other parts of the supply chain. Based on recent reports and information from industry experts and interviews of cannabis businesses for this study, we used 30 percent as an estimate for additional cannabis harvested beyond regulated production for these counties. We do not assume any other economic impacts from unregulated activity to remain conservative in our estimates. When appropriate, in later sections of this study, we discuss where economic impacts may occur from unregulated activity.

A key output from our economic impact estimates is algorithms. The estimates for these six counties help understand the economic effects of new cannabis businesses (or their loss when used in reverse). This study estimates the industries most affected and connected as vendors to the cannabis industry and its employees in terms of vendor income and employee compensation.

This study has the following organization. Section 2 provides an overview of the cannabis market in California and a brief literature review. Section 3 gives a simple overview of each study-area county and additional information on each county's cannabis market. Section 4 provides our approach to estimating the economic impacts, starting with the direct economic impacts (revenues and employment) from various data sources and assumptions. The IMPLAN® model is used to identify the business revenues, wages, jobs, and estimated tax revenues supported by this industry.<sup>4</sup> Section 5 provides the overall economic impact estimates regionally by primary supply-chain node, with detailed tables for each study-area county in Appendix 2. Section 6 provides conclusions and policy recommendations. References and appendices follow.

## 2. Cannabis Market in California: History and Literature Review

This section provides a brief history, a description of the cannabis supply chain, and a brief literature overview, which helps set the stage for the cannabis industry's economic impacts in the study area counties.

### Brief History

As of December 2023, the current federal legislation concerning cannabis began in October 1970 when the Comprehensive Drug Abuse Prevention and Control Act was signed into law. This 1970 law included the provisional "scheduling" of cannabis as a Schedule I drug based on the perception of cannabis having a high potential for abuse, no medical use, and lack of safety outside of medical supervision. In 1972, the Shafer Commission provided a report that concluded cannabis should be decriminalized, but President Nixon did not accept that conclusion. The current scheduling remains provisional in 2023.

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<sup>4</sup> See <http://www.implan.com> for more on this model and economic impact examples.



## Rescheduling/Descheduling: Shifts in Federal Law, Interstate Commerce, and Funding Sources

Since 1972, two periods and strands toward regulated markets have occurred in California and other states. In 1973, Oregon began a move toward general decriminalization at the state level, followed by other states throughout the 1970s. After 1980, a pause in decriminalization took place due to political and attitudinal changes nationally until the 2000s. California, in 1996, recognized potential medical benefits and began the decriminalization of cannabis for medical use (in essence, rescheduling at the state level).

The following are brief descriptions of the five schedules (as of 2023) that the federal Drug Enforcement Agency (DEA) uses to designate products like cannabis.<sup>5</sup> Schedule removal (“de-scheduling”) is a goal of many cannabis advocacy groups at the federal level. Changes in scheduling and potential nationalization of legal, recreational use of cannabis may shift the industry away from a cash-dominated system of payments and also allow commercial banks to lend to these businesses like any other. Another goal for federal-level change is the recognition of cannabis as an agricultural commodity **nationally**.

**Schedule I: High Potential for Abuse.** Under Schedule I, marijuana companies are barred from taking traditional business deductions based on Section 280E of the federal Internal Revenue Code. Cannabis, in this way, is treated similarly to drugs such as heroin.

**Schedule II: Pharmaceuticals.** Schedule II drugs are like Schedule I drugs, with one exception: clinical applications with legal availability through a prescription or medical supervision. Section 280E of the federal Internal Revenue Code would still apply.

**Schedule III: Low Potential for Abuse.** Schedule III drugs are based on a doctor’s authority, and compliance with FDA approval processes (Codeine is an example) is needed. Section 280E no longer applies.

**Schedule IV** is one level lower in the potential for abuse and includes Ambien, Ativan, and Xanax. Section 280E no longer applies.

**Schedule V:** still FDA-approved and regulated, but sold over the counter. Section 280E no longer applies.

A federal-level change would be necessary to achieve actual interstate commerce like other agricultural commodities and packaged goods. Administrative rescheduling could also provide tax relief, larger markets, and more credit-market access, assuming cannabis was treated similarly to agriculture.

Proposition 215 in 1996, followed by Senate Bill 420, began a foundational process for recreational, adult-use legalization in California. Under Proposition 215 and SB 420, consumers needed to have a medically-provided card to gain access to cannabis for medical purposes. The shift toward medical decriminalization led to many states adopting similar policies throughout the 1990s and 2000s. Following other states and attitudinal shifts, California moved toward decriminalizing recreational adult use in the 2010s. Colorado and Washington in 2012 adopted recreational adult-use policies that acted as models for California’s current regulatory environment. In 2015, California Governor Jerry Brown signed three bills, the Medical

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<sup>5</sup> See <https://www.dea.gov/drug-information/drug-scheduling> for more information.

Marijuana Regulation and Safety Act (MMRSA). The MMRSA required licenses for the cultivation, manufacture, distribution, transportation, laboratory testing, and sale of medical cannabis, California's primary, regulated supply-chain nodes. The MMRSA (later amended to MCRSA) created a commercial licensing and regulatory framework for medical cannabis.

In 2016, California voters passed Proposition 64, the Adult Use of Marijuana Act. In 2017, the California Legislature passed the Medical and Adult Use Cannabis Regulation and Safety Act (MAUCRSA), which combined all commercial medical and adult-use cannabis laws into a single Statewide licensing, regulation, and taxation framework for

commercial cannabis activities. MAUCRSA merged MCRSA and Proposition 64.<sup>6</sup> The current combined regulation of cannabis businesses is in the statewide Business and Professions Code. MAUCRSA aims to reduce public safety and law-enforcement costs for offenses related to cannabis possession or distribution and redistribute tax revenues generated to reduce other perceived social costs of legalization and cannabis use more generally. In 2023, a growing majority of American states have legalized the cultivation, distribution, sale, and possession of cannabis for medical (in green for Figure 1) or recreational use (states in orange in Figure 1 include medical use with adult-recreational use). The Federal Farm Bill 2018 included a national reclassification of legal, “industrial” hemp. Thus, all 50 states have legalized commodities that are predominantly cultivated for low THC, cannabinoid-rich cannabis, and cannabinoid-related products.<sup>7</sup> This “low THC” hemp flower is commonly used to produce products that are high in THC and other intoxicating constituents through manufacturing processes. This has resulted in the broad use of California’s regulatory frameworks for commercial cannabis for profit, with unregulated intoxicating “hemp” derived products widely available to consumers.

California cannabis is sold outside the state economy, and California’s cannabis market size remains under debate.<sup>8</sup> From an interstate commerce standpoint, federal-level change would be necessary to achieve a national policy, even with more states moving toward recreational use and trade between individual states. In 2022, Governor Newsom signed SB 1326 into law, authorizing the California Governor to negotiate and



**Figure 1: States that Allow only Medical (Green) or also Adult-Use (Orange) Regulations in 2023** Source: MJBiz (<https://mjbizdaily.com/map-of-us-marijuana-legalization-by-state/>)

<sup>6</sup> See <https://cannabis.ca.gov/cannabis-laws/laws-and-regulations/> for more.

<sup>7</sup> See <https://www.farmers.gov/your-business/row-crops/hemp> for more.

<sup>8</sup> See <https://bdsanalytics.com/press/new-report-legal-marijuana-industry-to-generate-40-billion/> for more considerations on market size.

enter into interstate commerce agreements with other states with commercial medical or adult use frameworks in place. Oregon and Washington have passed similar legislation, and at the time of writing (December 2023), New Jersey introduced similar legislation. Additionally, the Biden Administration has initiated a review of cannabis' scheduling status in the Controlled Substance Act, with the Health and Human Services Agency recommending rescheduling to Schedule III. Administrative rescheduling could provide tax relief, larger markets, and more access for credit-market use, assuming cannabis was treated as similar to agriculture otherwise.

The Department of Cannabis Control (DCC) is California's cannabis regulator. DCC merged three departments that regulated the state's cannabis industry between Prop 64 implementation in 2018 and 2021. The following are areas and supply-chain links that DCC covers as of December 2023:

- Cultivation of cannabis plants (commercial only, both medicinal and adult-use);
- Manufacturing and production of all cannabis products;
- Transportation and tracking of cannabis goods throughout the state;
- Sale of cannabis goods at the wholesale and retail levels;
- Public events where cannabis is sold, sampled, or consumed;
- Testing laboratory as products move from distribution to retail;
- Packaging and labeling of cannabis, consumer-packaged goods (CPG) products; and
- Public promotion and marketing guidelines for cannabis products.<sup>9</sup>

## The Cannabis Supply Chain

As shown in Figure 2, each supply-chain link adds value to the previous link's commodities or products. Commodity or product movement is then tracked and traced in each step. We use track-and-trace data to measure the volume of cannabis harvested and packaged; price data remains somewhat elusive in 2023. When cannabis is available from regional farmers, manufacturing, distribution/testing, and retail all within the same region or county can create – based on economic development, marketing, and partnership efforts among local industries – “allied” sectors that act as regional partners for the cannabis industry, such as tourism. For regional economic development and workforce development professionals, creating a regional “value chain” (where there is local capture of “value-add” income or incomes that remain in the local economy rather than leaked away to other areas) is an essential part of defining a regional industry cluster. For example, cannabis-related tourism to these counties would provide more local services to cannabis businesses and perhaps more retail customers.

Such clusters support jobs and create tax revenues for residents and governments versus supporting employment and revenues in other places where necessary supply-chain links exist instead. Such “imports” of goods and services may be due to regulated differences among regional counties and cities per local cannabis business or land-use policies. In some counties, no retail outlets exist alongside cannabis cultivation or manufacturing. For our study area counties, a cannabis cluster can regionally integrate economic activities vertically and capture more regional value-added incomes. Our interviews with

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<sup>9</sup> See <http://cannabis.ca.gov> for more details as of December 2023.

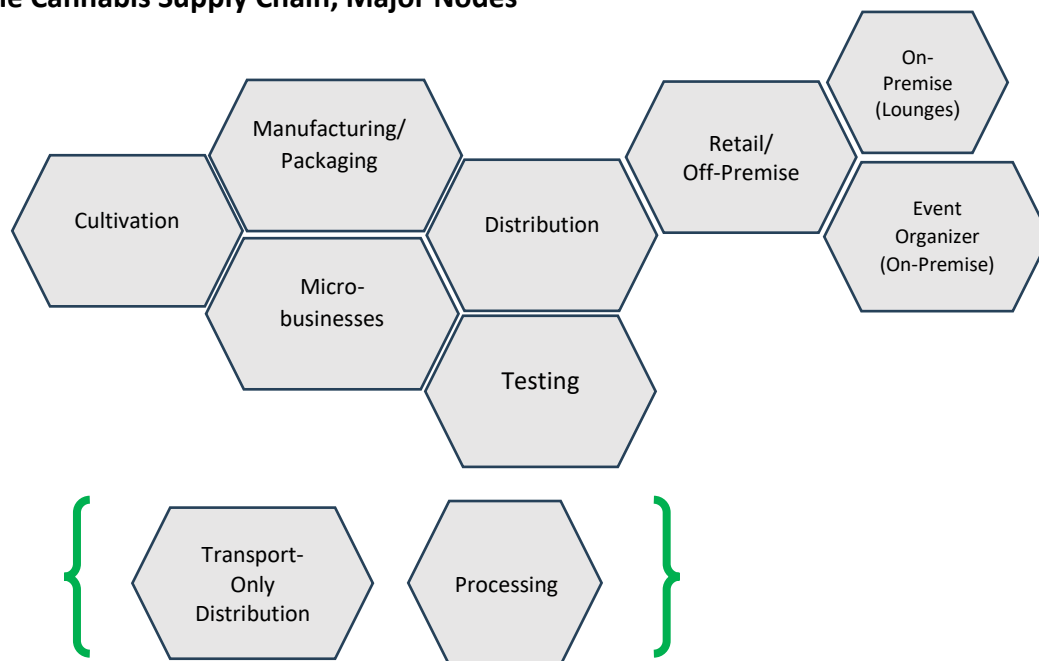
industry advocates, service providers, farmers, and other cannabis business leaders suggested that local land-use rules significantly shape the breadth and depth of cannabis supply-chain employers and partners in each county. Considering changes to these rules could augment the economic impacts estimated below.

The cannabis industry has high-level characteristics driving economic impacts on the study-area counties:

- Raw cannabis is an agricultural commodity (using land, water, and nutrients to grow a crop);
- There are harvest cycles that create local labor and vendor demand annually (cannabis plants can support multiple harvests per year, similar to crop “cuts”);
- Harvested products then go to processors, manufacturing or are packaged for retail sale, a conversion into at least one “value-added” service and then a product from raw cannabis (various forms exist in terms of post-harvest products, but even raw cannabis flower or raw by-products need to be processed, packaged and tested for final sale);
- Manufactured products are then packaged and distributed to a wholesale entity or directly to a retail point of sale;
  - After wholesale, a retailer acts as a point of sale to final consumers and
- Each step of this process involves governmental regulation and, in some cases, taxation.

Industries “allied” with cannabis businesses include entities selling dirt, greenhouse equipment, fencing, security cameras and services, commercial space, testing and laboratory equipment, packaging, printing, secure trucking, transportation, and tourism (events, restaurants, hotels, etc.). Such businesses located in these six counties capture more income than cannabis businesses alone, supporting a cannabis “cluster”.

**Figure 2: The Cannabis Supply Chain, Major Nodes**



Processing overlaps other nodes; processing licenses are considered cultivation license types in California. Cultivators may not process at multiple sites without a processing license for each site; otherwise, the cultivator must send commodities harvested to licensed processors. Some distributors also obtain

processing licenses and may not process/trim without such a license. Manufacturers generally take bulk raw cannabis, and the process of turning it into a manufactured good is not considered processing that requires a separate license, even if that process involves separating stems and stalks or "trim" from flowers.

Let's now turn to the academic and practitioner literature on the economics of cannabis as a broader context for recent studies and current thinking about how cannabis harvests, manufacturing, distribution, and retail create economic value for local and state economies.

### Previous Studies on the Cannabis Supply Chain and Economic Impacts

Before Proposition 64 passed in 2016 for California, the states of Washington and Colorado were examples of legalization and potential regulatory environments. Studies such as [ICF International](#) considered legalization's effects on California using Colorado and Washington as template states. Doussard (2017) examines the labor market for cannabis supply-chain jobs, focusing on the Colorado market. Studies such as Auriol et al. (2020) provide a general look at the economics of a legal cannabis market. Massachusetts Cannabis Control Commission (2020) considered that state's industry and generated baseline data for the market's potential. Gains come from import-substitution effects. Because of a lack of potential imports, the legalization of recreational cannabis in Colorado created jobs across the supply chain to fulfill legal cannabis demand. The gains may not last, mainly if nationalization exists; Colorado generated gains from being a first mover. These two studies elucidate how economic development efforts need to support initial gains when conversion takes place.

Other studies are more academic and have extensive bibliographies. Butsic et al. (2017) look at the ecological economics of where cannabis production is located. Their focus is on Humboldt County, California. Humboldt, Trinity, and Mendocino counties make up the "Emerald Triangle" of cannabis production in California. Locations of cultivators and retailers tend to be close to each other in urban areas, and the authors see positive "cluster" effects regarding where cannabis is grown.

The state of Washington published a study in 2021 that was a comprehensive look at the cannabis industry (see [Washington State University, 2020](#)) using data from 2020 to provide a benchmark. The Oregon Liquor Control Commission (OLCC), the overseer of cannabis regulations and taxes in Oregon, contrasts Colorado, California, and Washington state (the latest version as of 2023 is at [OLCC](#)). Ambrose et al. (2020) and Parey and Rasul (2020) focus more on geographical proximity and market size concerning the recreational use of cannabis.

For California, there have been two main literature threads before and after recreational adult use began in 2018. The first thread is on the economic effects of a regulated market setting on prices, quantities, and broader economic impacts. ERA Economics completed an extensive study in 2017 for the [California Department of Finance](#) as a standardized regulatory impact assessment (SRIA). ERA Economics' analysis centers on decision functions for cultivators: business risk premia, direct costs of regulations, and regulatory risk premia. The core risk premium is illustrated by a cultivator continuing to operate in an illegal market and the cost of losing their business and personal freedom. The direct cost is initial compliance with the conversion, including permitting, fees, taxes, form submissions/compliance, and other requirements. The regulatory risk premium is keeping compliance infrastructure in place, including ongoing tax payments (which may rise in cost over time), track-and-trace compliance, and other regulatory costs. Sumner et al. (2020)

provided an overview of the California market two years into regulated adult use. The six counties of our study are in their “North Coast” region except for Trinity County (in their “Intermountain” region).<sup>10</sup> Sumner et al. (2020) provide an overview of the supply chain. A significant advance from this study for the literature is simulating changes, including tax-rate increases and retail-hours modifications, as well as the economic effects. Goldstein et al. (2020) provide more details on prices across regulated and unregulated markets.

The second literature thread is focused on data generation and use for practitioners and policymakers. This literature strand also considers how to measure a market with unregulated activity parallel to a regulated marketplace. The medical cannabis market provides one way to look at demand and supply, thus pricing and volume with parallel markets. Studies such as Amlung et al. (2018) consider price elasticity between the regulated and unregulated markets and how the two markets act as substitutes. Their analysis suggests that consumers view the regulated market as a superior quality market, and thus, consumers are willing to pay more for regulated cannabis. In our interviews with medical cultivators that existed before 2018, the change to recreational adult-use markets led to more challenges than opportunities.

Firms like [BDS Analytics](#) and [MJBiz](#) provide data to measure the cannabis market nationally and state by state. Studies such as those by Caulkins et al. (2018) look at price and volume data available in Washington State after two years of legal use. Data in this study show where market opportunities may lie and how competition in some areas is lowering the 3:1 retail-to-wholesale price ratio for value-added products (such as edibles). Yates and Speer (2018) look at the Colorado market and how data of all kinds can help inform regulatory decisions to maximize social welfare. Their results suggest that increasing the available industry data is better for all participants (producers and consumers) and may inform other state-level or national decisions. Research about the economics of cannabis, adult-use or medical, remains nascent.

The following section looks at each of the six counties in this study as individual economies. Each county has a role in the study-area region. The focus of these profiles is their industry mix, as that mix helps dictate possible economic connections and impacts as cannabis businesses are born and grow in each county.

### 3. Overview of the Study Area’s Six Counties

Because economic impact analyses are based on economic connections among industries in a local area, each of the six study-area counties has unique economic conditions and characteristics. What we see in this section is that these six counties provide a mix of large suburban markets to very rural areas. These overviews provide background on each study-area county's current size and composition and some nuances. The latest data available as of October 2023 are shown for each county for industry mix by sector employment, gross regional product, jobs growth from 2021 to 2022, gross regional product per worker in 2022, and total number of people employed by all employers in each county in 2022.

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<sup>10</sup> This study considers regions of California and where more production (both regulated and unregulated) may be taking place and a benchmark estimation from ERA Economics (2017) for those defined regions.

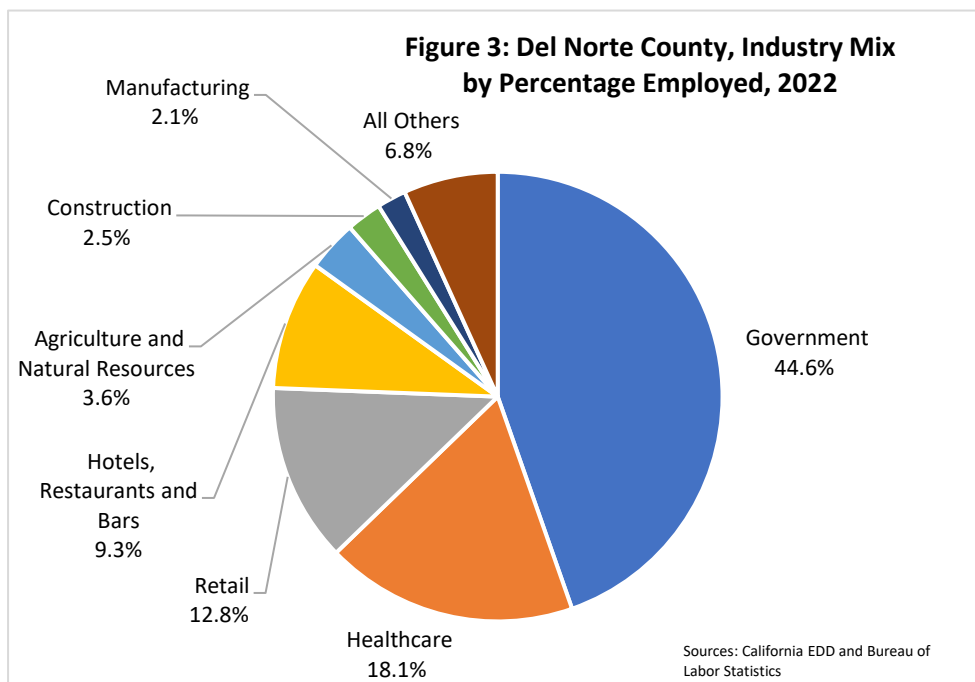
## Del Norte County

Del Norte is a remote county with a population of approximately 27,000 people. The two most significant employers in Del Norte County are Sutter Coast Hospital and Pelican Bay State Prison, as of 2022. Two large casinos provide tourism activity, as do visitors to the coastline; Crescent City is the principal municipality in Del Norte County. Education levels in Del Norte County have trailed the state average at 14 percent with a bachelor's degree or more; Del Norte's economy is focused on services versus goods production (agriculture, construction, and manufacturing).

### Overview:

- Gross Regional Product in 2022 (latest data in 2017 Dollars) = \$793,917,000 (0.03% of state total)
- Jobs Growth in 2022 from 2021 = 3.05% (CA average 5.5% jobs growth in 2022)
- GRP per worker in 2022 (in 2017 dollars) = \$94,066 (CA avg in 2022 = \$174,884)
- Number of Workers in 2022 at Local Employers = 8,440 (0.05% of state total in 2022)

Del Norte County's employment opportunities are primarily governmental (city, county, state, federal). The most prominent visitor attractions are casinos in Crescent City and Smith River. Between 2023 and 2030, the county's population is expected to decline by an annual average rate of 0.3 percent, from 26,600 to approximately 25,100 residents, reducing local demand for products and services.



## Humboldt County

The cannabis industry's historic cultivation center in California, Humboldt County, has a diverse economy, including construction, manufacturing, healthcare, and higher education. Official measures of cannabis-specific employment do not exist, and we provide an estimate below based on assumptions of harvest activity and presumed full-time equivalent (FTE) workers. Humboldt County has approximately 131,000 residents and is home to CalPoly Humboldt, a polytechnical university in the California State University system. Roughly \$450 million is coming to CalPoly Humboldt to complete the conversion and

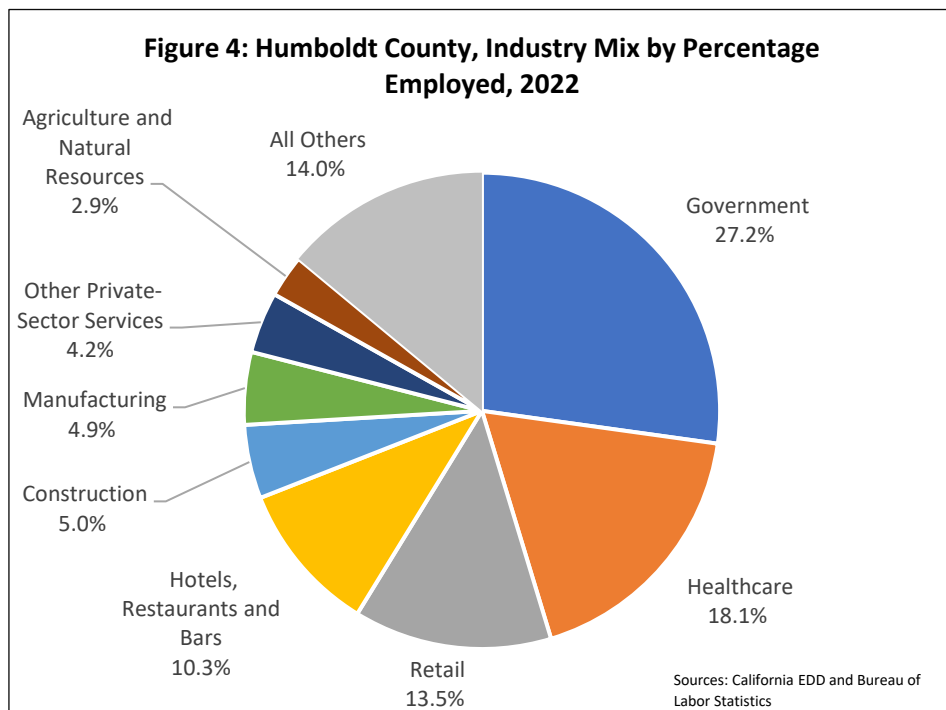


infrastructure expansion necessary to support the university's long-term goals. New employment demand will likely be directly or indirectly related to CalPoly Humboldt to 2030.

#### Overview:

- Gross Regional Product in 2022 (in 2017 Dollars) = \$5,629,986,000 (0.2% of state total)
- Jobs Growth in 2022 from 2021 = 3.92% (CA average 5.5% jobs growth in 2022)
- GRP per worker in 2022 (in 2017 Dollars) = \$111,928 (CA avg in 2022 = \$174,883)
- Number of Workers in 2022 at Local Employers = 50,300 (0.28% of state total)

Services and agriculture are the primary industry sectors in Humboldt County. Local tourism to the coastline and CalPoly Humboldt dominate in generating local visitor demand. Students create a seasonal stimulus to Arcata and Humboldt County during CalPoly Humboldt's academic year; the cannabis industry also creates a seasonal effect during trimming and harvest times. Population decline is expected to persist through at least 2030. By 2030, the population is forecasted by CalTrans and the California Department of Finance to be approximately 131,700 from 134,400 in 2022. Data shown in Figure 4 do not include cannabis employment.



#### Lake County

Lake County's economy was affected by the Valley Fire of 2015. Lake County's housing stock has yet to recover from that shock. Lake County is more similar to northern California counties like Tehama and Colusa than Mendocino County due to Lake County being landlocked; Clear Lake, a large body of water at Lake County's geographical center, attracts a mix of part-time residents and visitors. Lake County's population is approximately 63,000 residents in 2023, another rural county in our study area.

#### Overview:

- Gross Regional Product in 2022 (in 2017 Dollars) = \$1,867,779,000 (0.06% of state total)
- Jobs Growth in 2022 from 2021 = 3.23% (CA average 5.5% jobs growth in 2022)
- GRP per worker in 2022 (in 2017 Dollars) = \$110,065 (CA avg in 2022 = \$174,883)
- Number of Workers in 2022 at Local Employers = 16,970 (0.094% of state total)



The closure of Konocti Harbor and other visitor assets in the mid-2000s reduced visitors to Lake County; as

of 2023, Konocti Harbor has re-opened. There has also

been an expansion of casinos and wineries in terms of other visitor attractions. Lakeport and

Clearlake are the two main cities in the county, located on the west and southern

sides of Clear Lake, respectively. Healthcare

services, leisure and hospitality, retail, and construction are the primary industries beyond

agriculture and healthcare (of which much is public health). Government,

tourism jobs, and healthcare

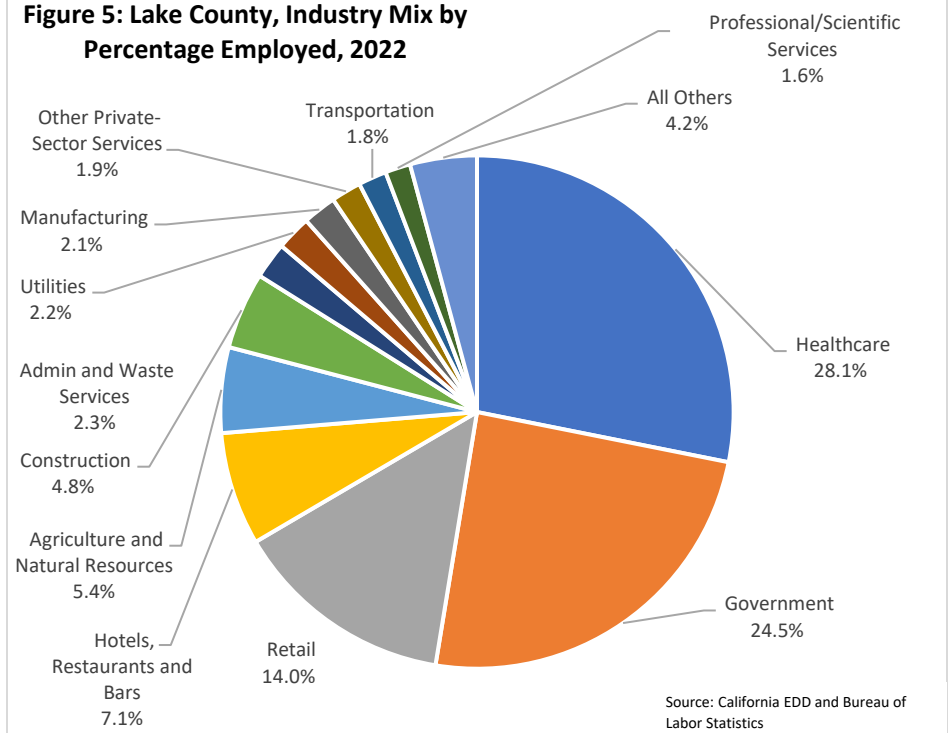
services will be primary industries of job growth by 2030. Lake County's population is expected to decline

through at least 2030 as a reduced level of housing units remains in Lake County from the 2015 fires. Lake

County has a growing business-services (accounting, legal, finance, insurance, software) industry sector; some of its growth is due to work-from-home and new residents of Lake County. The healthcare industry

employs more workers than any other Lake County's economy sector.

**Figure 5: Lake County, Industry Mix by Percentage Employed, 2022**



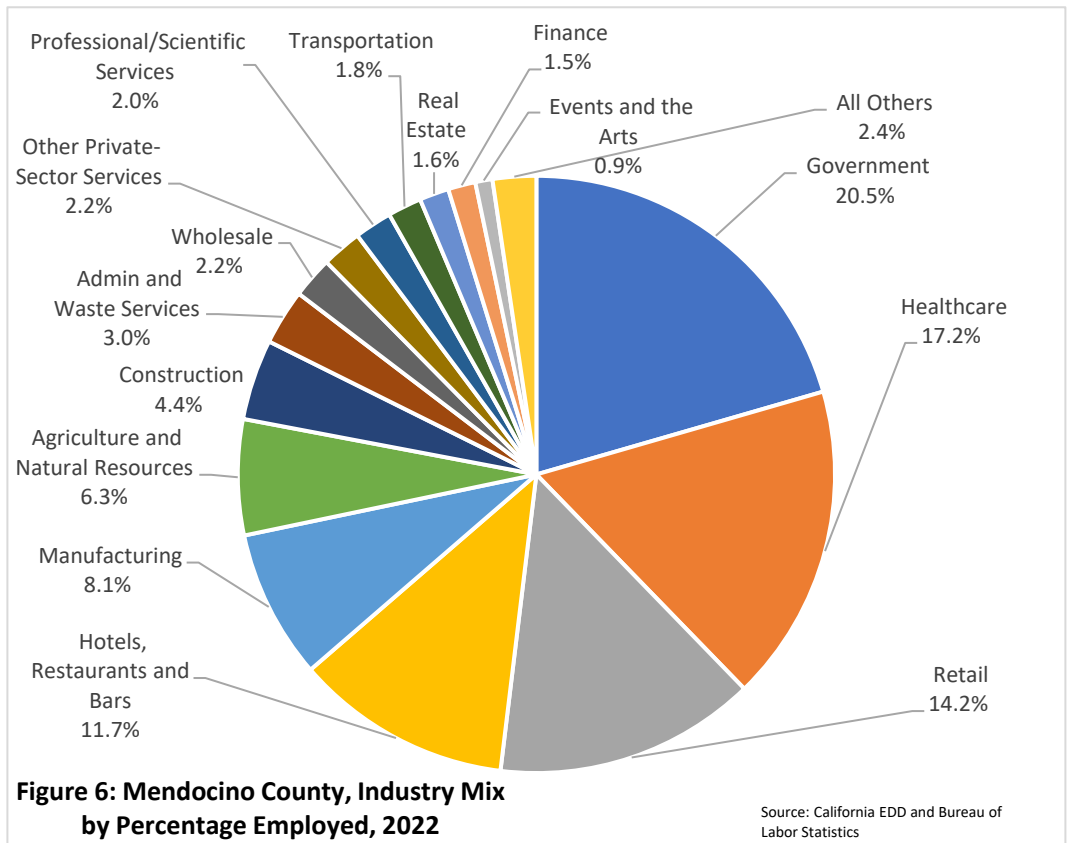
## Mendocino County

Both coastal and rural, Mendocino's proximity to Sonoma County and San Francisco has helped its economy draw in visitors and industry over time. Once a logging and fishing economy, Mendocino County, 2000, focused on construction. After 2004, Mendocino County had not recovered to the employment levels reached before 2004 when the pandemic shock came to labor markets in 2020. Mendocino County has approximately 86,000 residents in 2023.

### Overview:

- Gross Regional Product in 2022 (in 2017 Dollars) = \$3,519,898,000 (0.11% of state total)
- Jobs Growth in 2022 from 2021 = 4.07% (CA average 5.5% jobs growth in 2022)
- GRP per worker in 2021 (in 2017 Dollars) = \$108,504 (CA avg in 2022 = \$174,883)
- Number of Workers in 2022 at Local Employers = 32,440 (0.18% of state total)

Similar to Humboldt County, Mendocino County has a long history of cannabis cultivation and distribution before the regulated environment began in 2018. How much the overall county economy relies on cannabis and its returns to local farmers and workers is unknown and difficult to assess historically. This study provides estimated full-time equivalent (FTE) and contract workers in the cannabis industry. Healthcare, public sector, leisure and



hospitality, and retail are primary employment sectors; construction has a volatile history in Mendocino County, especially after 2005. Mendocino County's housing stock has also been affected by fire, but not to the same extent as Sonoma and Lake counties. By 2030, the population may fall closer to 85,000.

### Sonoma County

A diverse mix of agriculture, technology, tourism, coastal areas, and proximity to the greater Bay Area, Sonoma County is a large suburban county in northern California. Due to wildfires in 2017 and the pandemic, Sonoma County's population has fallen and is predicted to decrease and age by 2030. Sonoma County is the most populous county between San Francisco and Oregon's Multnomah/Washington counties (where the Portland metro area is located), with approximately 486,000 residents in 2023. Sonoma County's economic diversity leads to hundreds of industries and thousands of workers being affected by the local cannabis industry. Sonoma County has a regional airport, multiple state and US highways going through and toward it, and a train service (connected to Bay Area ferry service in San Francisco and Oakland) that allows access to San Francisco without car travel. Sonoma County has a long history of visitors coming for the regional wine industry and long coastline.

### Overview:

- Gross Regional Product in 2022 (latest data) = \$31,368,529,000 (0.99% of state total)
- Jobs Growth in 2022 from 2021 = 4.93% (CA average 5.5% jobs growth in 2022)
- GRP per worker in 2022 (in 2017 Dollars) = \$149,090 (CA avg in 2022 = \$174,883)
- Number of Workers in 2022 at Local Employers = 210,400 (1.16% of state total)

Wineries account for 32 percent of all manufacturing jobs in Sonoma County in 2022. Sonoma County's retail sector remains under pre-pandemic levels as of 2022. Retail employment has rebounded alongside hotel and restaurant employment from lows after the pandemic period (2020-21). The professional and business services industry has a diverse array of subsectors. Toward 2030, professional services and healthcare growth based on an aging population is expected. Some

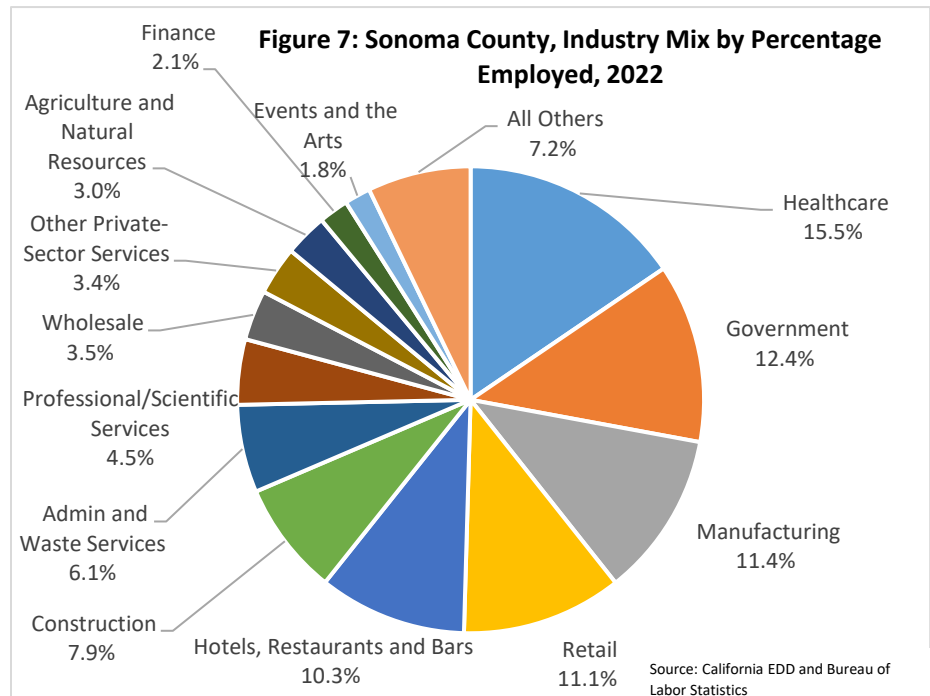
of the largest employers in Sonoma County in 2022 are in healthcare (hospitals and health systems such as Sutter and Kaiser).

### Trinity County

In contrast to Sonoma County, Trinity County is isolated and very small from an economic standpoint. With approximately 13,000 residents, it is the smallest of the six counties considered here, both by the number of residents and employees working within Trinity County. Trinity County's industry mix is similar to the interior of Mendocino County; historically, logging and wood-based manufacturing were mainstay employers, along with healthcare and public-sector jobs. Visitors come to Trinity County to access the Trinity River and mountain areas. Leisure and hospitality jobs in Trinity are seasonal, as is cannabis-specific employment. As we will see below, Trinity County's cannabis sector is largely cultivation compared to the other study-area counties with few other supply-chain businesses in cannabis.

### Overview:

- Gross Regional Product in 2022 (in 2017 Dollars) = \$370,586,000 (0.01% of state total)
- Jobs Growth in 2022 from 2021 = 2.41% (CA average 5.5% jobs growth in 2022)
- GRP per worker in 2022 (in 2017 Dollars) = \$124,776 (CA avg in 2022 = \$174,883)
- Number of Workers in 2022 at Local Employers = 2,970 (0.016% of state total)

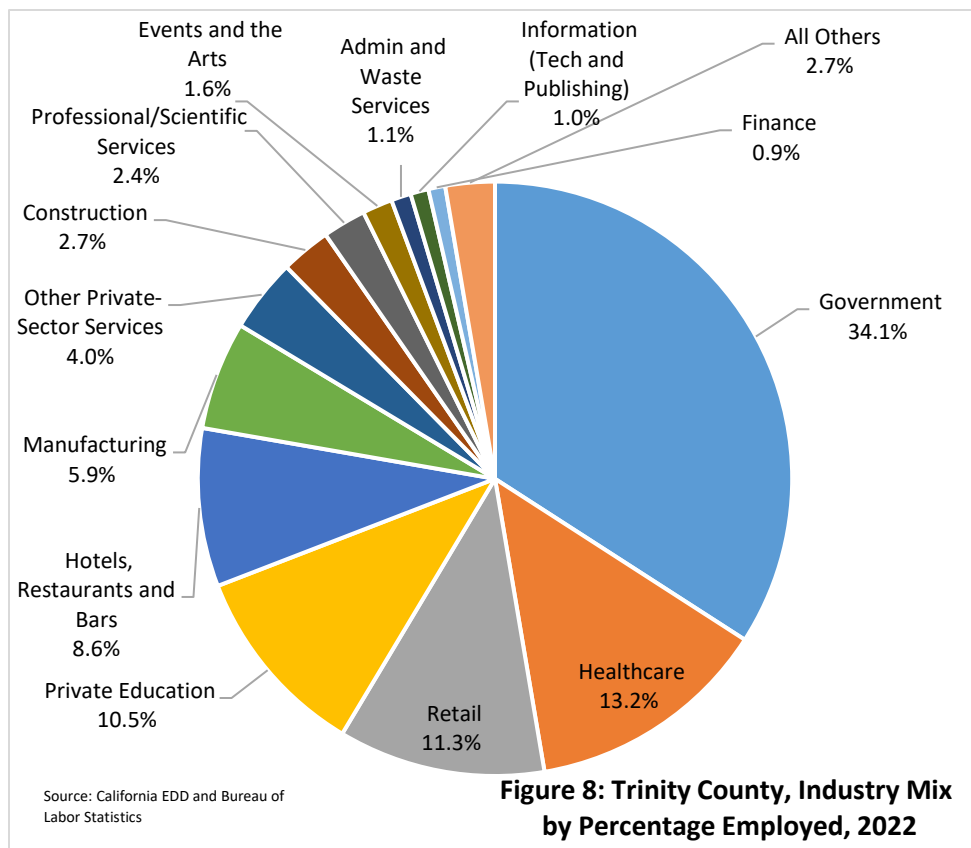


Trinity County's manufacturing sector concentrates on lumber products; the most prominent healthcare employer is Mountain Communities Healthcare District. In 2022, the county had approximately 25 hotels, 40 restaurants, some theaters, and museums. The County's population increased from 2007 to 2023 from 13,800 residents to 16,000 residents, though little change is forecasted for 2030.

### Summary

When considering the economic impacts of an industry, reducing supply-chain leakages is critical to maximizing value-added incomes from an industry's regional growth. For

example, suppose Trinity County cannabis cultivators are expanding, and more cannabis is being harvested and sold. Trinity County's farmers must find manufacturers, distributors, or wholesale markets that can pay on time and consistently for cannabis commodities and products. Suppose those businesses are located outside Trinity County. In that case, the income for farmers comes in and adds value, but other supply-chain gains go to other counties in California (including taxable retail sales). Marketing, travel, and vendor costs rise as supply-chain partners are farther from where cannabis commodities and products originate. All six counties face labor-market constraints, zoning restrictions, land-use policy and housing concerns, and forecasted demographic changes that may affect how the central supply-chain nodes can all grow together over time. We now look at license data to describe the cannabis supply chain for each of our study-area counties.



**Figure 8: Trinity County, Industry Mix by Percentage Employed, 2022**

### License Data and the Capacity to Produce Cannabis in the Six Counties

The key to an economic impact estimate is measuring the local value added to a product moving toward retail from cultivators. Commodities and products may be raw (newly-harvested cannabis), some packaged products due to manufacturing, or retail products that combine raw and packaged items. In the regulated cannabis industry, measuring the capacity to produce incomes and provide jobs, wages, and tax revenues starts with active license holders across supply-chain nodes.

The Department of Cannabis Control (DCC) is the lead state agency regulating commercial cannabis activities in California. It is charged with licensing, regulating, and enforcing commercial cannabis activities. Operators must obtain a state license from the DCC and local licensure to operate. Businesses with licenses that collect excise (including cultivation) or sales taxes must register with the California Department of Tax and Fee Administration (CDTFA) to obtain a seller's permit from DCC. As of December 2023, there were approximately 9,778 active licenses in California and 2,964 in the study area counties, as shown in Table 1. Notice that the volume of permits was lower in December 2023 than in December 2022.

**Table 1: Active Licenses as of December 2022 and December 2023, California and Study-Area Counties, Estimates of Regulated Businesses**

Category	Subcategory	California			Study-Area Counties		
		Dec 2022	Dec 2023	% Change	Dec 2022	Dec 2023	% Change
Cultivation							
	Indoor	528	545	3.2%	14	15	7.1%
	Mixed Light	1,602	1,154	-28.0%	820	600	-26.8%
	Outdoor	3,651	2,444	-33.1%	2,036	1,205	-40.8%
	Processor	1,639	1,380	-15.8%	882	660	-25.2%
Manufacturer		881	762	-13.5%	94	83	-11.7%
Testing		42	38	-9.5%	2	2	0.0%
Distributor		1,338	1,301	-2.8%	261	243	-6.9%
Microbusiness		373	403	8.0%	46	55	19.6%
Event Organizer		43	45	4.7%	-	-	
Retail		1,490	1,706	14.5%	95	101	6.3%
<b>Total</b>		<b>11,587</b>	<b>9,778</b>	<b>-15.6%</b>	<b>4,250</b>	<b>2,964</b>	<b>-30.3%</b>

Source: DCC (our final assessment of active license data in 2022 and 2023 was in December 2023)

Licenses for each supply-chain node (with related DCC licenses detailed from DCC's current descriptions) help estimate the maximum space available for growing cannabis<sup>11</sup> as of December 2023:

- Cannabis cultivation: planting, growing, harvesting, drying, curing, grading, or trimming cannabis.
  - DCC issues licenses for three categorical growing environments:
    - (1) Outdoor licenses for growing cannabis outside using natural lighting or in structures using no artificial lights on mature plants;
    - (2) Indoor licenses for growing cannabis using at least 25 watts of artificial light per square foot in a permanent structure; and
    - (3) Mixed-light licenses for growing cannabis in a greenhouse, glasshouse, hoop-house, conservatory, and other indoor environments with artificial light assistance on mature plants categorized under "Tier 1" systems (up to 6 watts per square foot of artificial light) or "Tier 2" systems (using 6 to 25 watts per square foot of artificial light).
  - Cultivation environments with various canopy/growing area types and sizes include:
    - Specialty Cottage Outdoor – Outdoor cultivation sites with up to 25 mature plants or up to 2,500 square feet of canopy;

<sup>11</sup> See <https://cannabis.ca.gov/applicants/license-types/> for more. Licenses available and requirements may change over time.

- Specialty Cottage Indoor – Indoor cultivation sites with up to 500 square feet of canopy;
- Specialty Cottage Mixed-Light Tier 1 and 2 – Up to 2,500 square feet of total canopy;
- Specialty Outdoor – Up to 50 mature plants or up to 5,000 square feet of canopy;
- Specialty Indoor – 501 square feet to up to 5,000 square feet of canopy;
- Specialty Mixed-Light Tier 1 and 2 – 2,501 square feet up to 5,000 square feet of canopy;
- Small Outdoor – 5,001 square feet up to 10,000 square feet of canopy;
- Small Indoor – 5,001 square feet up to 10,000 square feet of canopy;
- Small Mixed-Light Tier 1 and Tier 2 – 5,001 square feet up to 10,000 square feet of canopy;
- Medium Outdoor – 10,001 square feet up to 1 acre of canopy;
- Medium Indoor – 10,001 square feet up to 22,000 square feet of canopy;
- Medium Mixed-Light Tier 1 and Tier 2 – 10,001 square feet up to 22,000 square feet of canopy;
- Nursery – Cultivation sites that operate solely as a nursery, conducting activities like cloning and seed propagation;
- Processor – Businesses that only trim, cure, dry, grade, package, or label cannabis;
- Large – (started January 1, 2023), from 22,000 square feet of canopy and above;
- Cannabis Microbusiness – a business that provides at least three different supply-chain functions and holds licenses for the same functions, except distribution and transportation only licenses and Type N manufacturing (infused products) licenses.
- Cannabis nurseries and processors are license types that live within cultivation or manufacturing from an economic standpoint;
- Cannabis Manufacturer – A cannabis manufacturer uses any of the following processes in cannabis product manufacturing:
  - Compounding, blending, extracting, infusing, packaging or repackaging, labeling or relabeling, and holding or storing;
  - Type 7 (volatile solvent manufacturing) manufacturers can:
    - Use volatile solvents for the extraction or post-processing (refinement) of cannabis extract (including butane, heptane, hexane, and propane);
    - Use non-volatile solvents for extraction or post-processing;
    - Use mechanical methods for extraction;
    - Make cannabis products through infusion;
    - Package and label cannabis products.
  - Type 6 (non-volatile solvent manufacturing or mechanical extraction) manufacturers can:
    - Type 6 is similar to Type 7 but uses non-volatile solvents for the extraction or post-processing (including ethanol, carbon dioxide, cooking oils, and butter).
  - Type N (infused products) manufacturers can:
    - Mix or infuse cannabis extract or plant material with other ingredients to make a cannabis product.
  - Type P manufacturers: only package and label cannabis products.

- Type S manufacturers operate in shared-use facilities and can use cooking oils and butter for infusion, like Type N.
  - Shared-use facilities are places where multiple Type S manufacturers rotate on a schedule and share space and equipment, and
  - A Type 6, 7, or N license can register all or part of their manufacturing premises as a shared-use facility.

**Table 2: Study Area Active Licenses by County, California Cannabis, December 2023**

Supply Chain Node	License Type	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area	CA Total	Study Area % of CA
<b>Cultivation</b>	<b>Indoor</b>	-	3	-	2	10	-	15	545	2.8%
	Small	-	3	-	1	9	-	13	376	3.5%
	Medium	-	-	-	1	1	-	2	168	1.2%
	Large	-	-	-	-	-	-	-	1	0.0%
	<b>Mixed Light</b>	-	250	17	175	-	158	600	1,154	52.0%
	ML 1 Small	-	161	12	158	-	134	465	735	63.3%
	ML 1 Medium	-	40	3	-	-	1	44	75	58.7%
	ML 1 Large	-	2	-	-	-	-	2	4	50.0%
	ML 2 Small	-	37	1	17	-	23	78	308	25.3%
	ML 2 Medium	-	10	1	-	-	-	11	32	34.4%
	<b>Outdoor</b>	1	634	176	205	45	145	1,205	2,444	49.3%
	Small	-	435	115	204	32	142	928	1,860	49.9%
	Medium	-	193	48	1	13	1	256	549	46.6%
	Large	-	6	13	-	-	2	21	35	60.0%
	<b>Specialty General</b>	2	238	8	114	13	16	391	755	51.8%
	<b>Specialty Cottage</b>	-	63	2	34	4	9	112	153	73.2%
	<b>Nursery</b>	-	33	1	69	11	4	118	323	36.5%
	<b>Processor</b>	-	22	3	7	7	-	39	149	26.2%
<b>Manufacturer</b>		1	38	4	11	29	1	84	762	10.9%
<b>Testing</b>		-	-	-	-	2	-	2	38	5.3%
<b>Distributor</b>		1	118	9	58	43	14	243	1,301	18.7%
<b>Microbusiness</b>		-	27	2	10	13	3	55	403	13.6%
<b>Event Organizer</b>		-	-	-	-	-	-	-	45	0.0%
<b>Retail</b>		6	26	10	21	37	1	101	1,706	5.9%
<b>Totals</b>		<b>10</b>	<b>1,452</b>	<b>232</b>	<b>706</b>	<b>214</b>	<b>351</b>	<b>2,965</b>	<b>9,778</b>	<b>30.3%</b>

Source: DCC (our final assessment of active license data was December 2023)

- Cannabis Distributor – A cannabis distributor is a business that transports cannabis and cannabis products.
  - Distributors (unless licensed as “Transport Only”) also arrange for testing of cannabis products to fulfill requirements for retail;
    - Transport-only distributor licenses allow the movement of cannabis between supply-chain nodes (e.g., cultivator to manufacturer) but not to retail;
    - Cannabis Testing Laboratory – A cannabis testing laboratory is defined as a facility or entity in the state of California that performs or offers tests of cannabis or cannabis products<sup>12</sup>;

<sup>12</sup> See Valdes-Donoso P, et al. (2020) for more on the costs of testing cannabis in the California supply chain.

- Testing facilities are seen as vendors to distributors primarily in our analysis, but other license types may also utilize testing businesses);
- Cannabis Retailer – A cannabis retailer/dispensary is a business that acts as a point of retail sale and delivery of cannabis or cannabis products to customers.
  - Retailers must have a physical location, may also deliver to other locations, and not have a point-of-sale due to a focus on off-site deliveries only;
  - Retailers must check a customer’s identification to verify the customer's age;
  - Retailers may sell the following types of cannabis products if testing and quality assurance requirements are met:
    - Packaged flower, pre-rolls, topicals, and edibles;
    - Branded merchandise and cannabis accessories such as t-shirts, hats, rolling paper, vape cartridges and batteries, pipes, etc.

**Table 3: Study-Area Active Licenses by County, California Cannabis, December 2022**

Supply Chain Node	License Type	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area	CA Total	Area % of California
<b>Cultivation</b>	<b>Indoor</b>	-	4	-	2	8	-	14	528	2.7%
	Small	-	4	-	1	6	-	11	370	3.0%
	Medium	-	-	-	1	2	-	3	157	1.9%
	Large	-	-	-	-	-	-	-	1	0.0%
	<b>Mixed Light</b>	-	383	25	220	1	191	820	1,602	51.2%
	ML 1 Small	-	255	14	197	1	164	631	1,116	56.5%
	ML 1 Medium	-	64	4	-	-	1	69	101	68.3%
	ML 1 Large	-	1	-	-	-	-	1	3	33.3%
	ML 2 Small	-	52	5	22	-	26	105	340	30.9%
	ML 2 Medium	-	11	2	1	-	-	14	42	33.3%
	<b>Outdoor</b>	-	655	893	247	69	172	2,036	3,651	55.8%
	Small	-	462	833	245	50	170	1,760	3,054	57.6%
	Medium	-	189	55	2	19	1	266	574	46.3%
	Large	-	4	5	-	-	1	10	23	43.5%
	<b>Specialty General</b>	1	313	12	149	16	30	521	898	58.0%
	<b>Specialty Cottage</b>	-	82	4	64	5	13	168	217	77.4%
	<b>Nursery</b>	-	39	4	81	11	3	138	347	39.8%
	<b>Processor</b>	-	36	3	9	7	-	55	177	31.1%
<b>Manufacturer</b>		1	43	5	12	33	1	95	881	10.7%
<b>Testing</b>		-	-	-	-	2	-	2	42	4.8%
<b>Distributor</b>		1	123	11	61	47	18	261	1,338	19.5%
<b>Microbusiness</b>		-	21	2	10	11	2	46	373	12.3%
<b>Event Organizer</b>		-	-	-	-	-	-	-	43	0.0%
<b>Retail</b>		5	26	5	22	35	2	95	1,490	6.4%
<b>Totals</b>		<b>8</b>	<b>1,725</b>	<b>964</b>	<b>877</b>	<b>245</b>	<b>432</b>	<b>4,251</b>	<b>11,587</b>	<b>36.7%</b>

Source: DCC (our final assessment of active license data was December 2023). Note that two retail licenses in Trinity County were active, but no retail sales were recorded by the California Department of Tax and Fee Administration (CDTFA); see below.

Tables 2 and 3 provide estimates of active licenses by county to see how the study-area counties have concentration in some supply-chain nodes versus others. As of December 2023, 45 of California’s 58

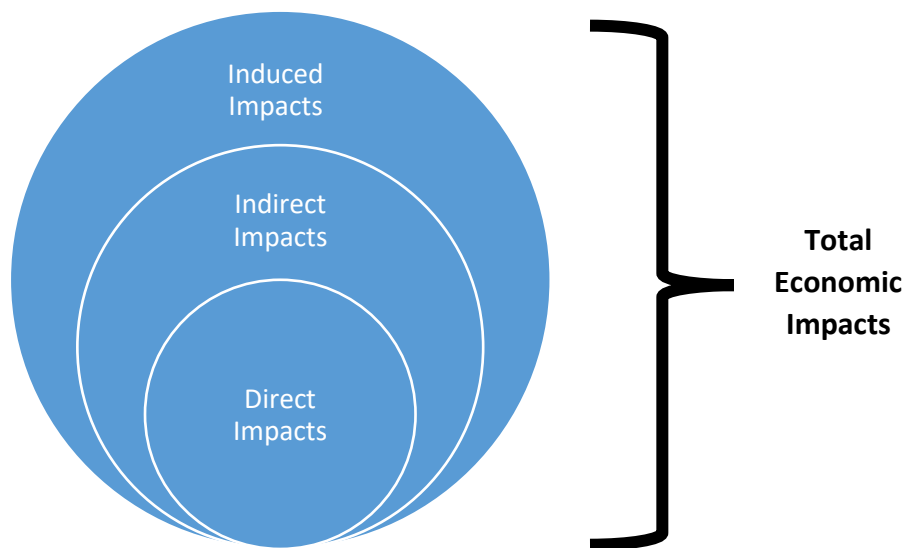


counties have active, licensed cannabis businesses based on premise address data. Because our estimates are for the 2022 calendar year, we also show Table 3 to compare and contrast data from December 2023 (Table 2). License counts provide a way to consider the number of business entities (though the same owner may own multiple licenses) and the regulated industry's capacity to generate economic value and impacts. License data should be considered a way to estimate the potential market size, not the actual market activity. Tables 2 and 3 show the relative dominance in mixed-light and outdoor-grow licenses for our study area counties' farmers. However, we need to be cautious in equating licenses and individual business entities; the same individual businesses can hold multiple licenses and may be held by related companies. For this study, licenses represent a way to help estimate regulated economic activity from that license type's portion of the cannabis supply chain. They are used in our approach to the available data.

### Approach to Cannabis Industry Economic Impacts

This study estimates the cannabis industry's economic effects from the six study-area counties on their counties' economies. Economic impact studies describe the depth and breadth of industry relationships within a specific area based on an event or industry's change. This change could be a new industry coming to a location or industry growth (or decline) from the current level of business revenues or employees. Economic impacts come in three "categories," starting with the same way ripples come from throwing a rock into a still pond; the rock can be considered the current economic size in dollars of capital or operational expenses or revenues from a cannabis supply-chain node. Based on vendor relationships, additional incomes and jobs ripple out from the original, direct impacts. The theory of how economic impact estimates consider the incomes (including state and local tax receipts) and jobs that spread through the regional economy from an industry's operations can be summarized as shown in Figure 9.

**Figure 9: Economic Impacts**



**Direct** effects come from a new cannabis farm. From annual operations come subsequent local business and job gains known as indirect effects, primarily for direct vendors of the cannabis farm within a defined

area, say Humboldt County. For example, a cannabis farmer may purchase more fencing or security equipment for a defined, planted area to enhance productivity from a local security service, hardware or lumber store, or a local contractor.

These new incomes generate economic gains, affecting these businesses and their workers beyond the cannabis farm. The indirect impacts then create **induced** effects on the local economy (a county or regional mix of counties). The lumber store's employees spend wages on groceries, medical visits, restaurant meals, and various other industries that have nothing to do with the cannabis farms affected. In the case of cannabis, two parallel phenomena happened when recreational adult-use cannabis became regulated in California for the six North Coast counties studied here:

- Conversion of existing, unregulated businesses to regulated businesses; and
- New business formation.

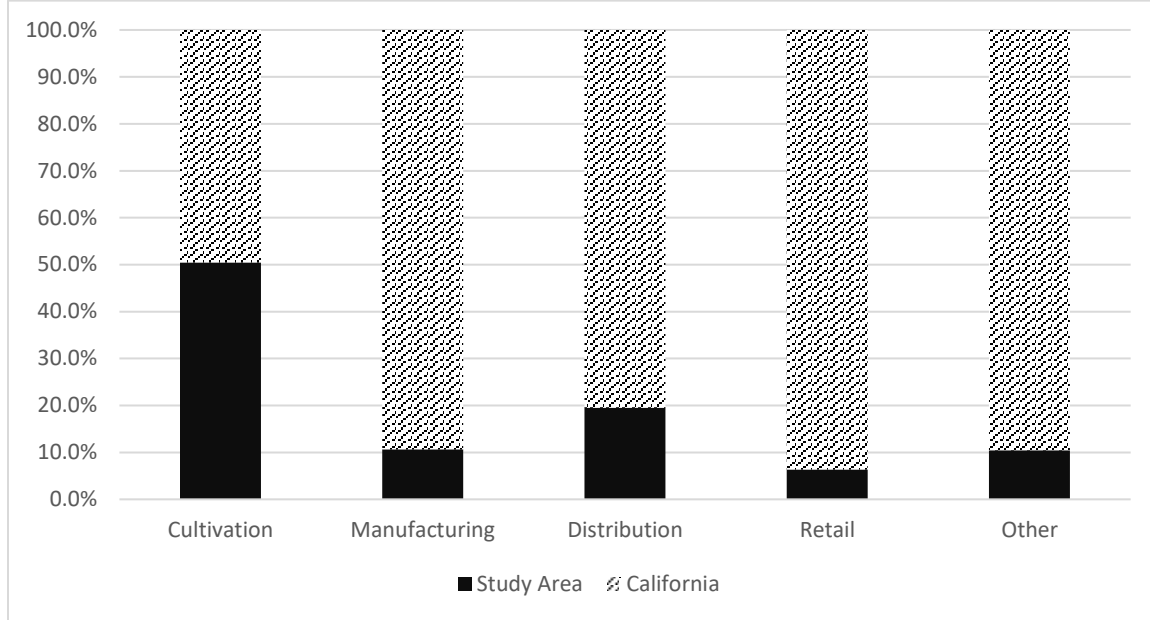
The year 2022 is our focal year for economic impact estimates. We use the following approach to estimate the direct economic impacts for each supply-chain node using 2022 estimates of economic activity: (1) use governmental, third-party private-sector, survey, interview, and other data sources to determine the regulated industry's revenue or expense levels; and (2) use a 30% addition on average to cultivation volumes only capture unregulated market outcomes. We use the IMPLAN® model (see [www.implan.com](http://www.implan.com) for more) to estimate the indirect and induced effects and provide other data as needed. Our survey data and governmental data (including DCC track-and-trace data especially) are available for the calendar year 2022 at the time of this writing (December 2023). The economic impact relationships are generally considered long-term; the reader could use new direct impact examples and apply the ratios within our result tables (Tables 11 to 26 and the algorithm and detailed tables in Appendix 2) with accuracy similar to the 2022 economic relationships.

We will not explicitly measure incomes derived from sales outside California. Export demand for California cannabis exists nationwide, including some multi-state operators (MSOs); questions exist regarding the legality or the labeling ethics of "California" on packages sold in other states. There is no reciprocity with states that have similar legislation as California in place due to cannabis sales remaining illegal federally and thus not allowing any explicit interstate commerce as of December 2023. The incentives to distribute through long-standing, unregulated interstate markets remain strong, even with legal risks. During local or statewide surpluses, export markets can help re-balance markets with too much supply.

The levels and breadth of taxation are consistent worries from industry insiders; with no taxes collected and a long business history, the unregulated market is a mature substitute for legal markets. There are generations of cannabis entrepreneurs in these six counties. Figure 10a shows the license-share concentration of the study-area counties versus California overall in primary supply chain nodes as of December 2023. Cultivation's importance to the study-area counties is evident from Figure 10a's data.

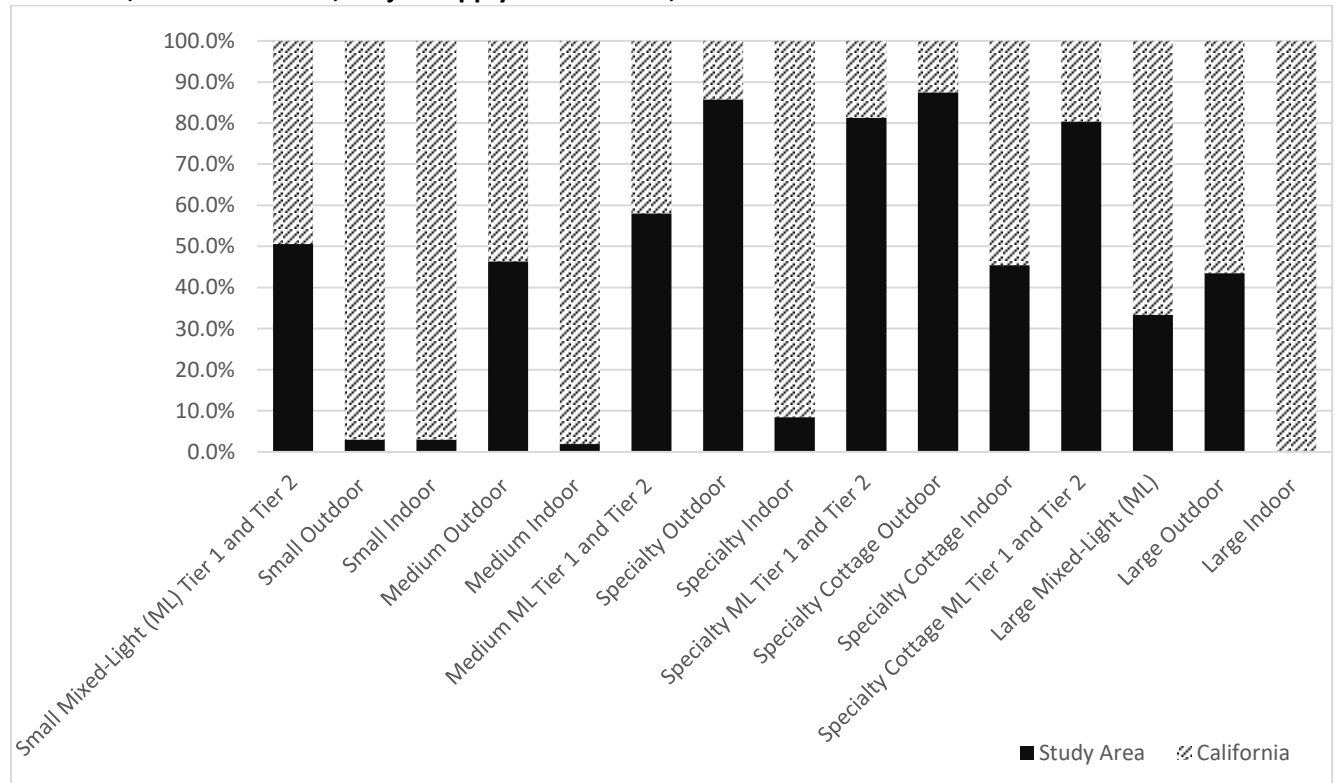
Figure 10b shows the proportion of cultivation licenses in the study area counties by specific license type or canopy type. We summarize license type and canopy size here for convenience. Figure 10b is important for this study because it provides a view of the study area counties and their competitive advantages within the cultivation licenses and considers the capacity to grow cannabis in these counties.

**Figure 10a: License Proportions (% of Statewide Total), Study Area Counties and Rest of California, December 2022, Major Supply Chain Nodes, “Active” Licenses**



Source: DCC (our final assessment of active license data was December 2023)

**Figure 10b: Canopy Proportions (% of Statewide Total), Study Area Counties and Rest of California, December 2023, Major Supply Chain Nodes, “Active” Licenses**



Source: DCC (our final assessment of active license data was December 2023)

## Cannabis Manufacturing

Like other agricultural commodities, raw cannabis flower and salable by-products act as inputs in cannabis manufacturing. According to MJBiz (2023), Californians spent most of their dollars (41%) on flower in 2022. Concentrates, the next largest share of cannabis sales, captured 30%, with over 76% of concentrate sales in cartridge form. Edibles captured 15% of the market share. Top performing edibles in California's retail markets included cannabis-infused chocolate, gummies, and beverages. Pre-rolled products were 12% of the 2022 market, and other categories represented the remainder. Packaging products for distribution and retail adds requirements and potential vendors to finalizing manufactured goods for sale.<sup>13</sup>

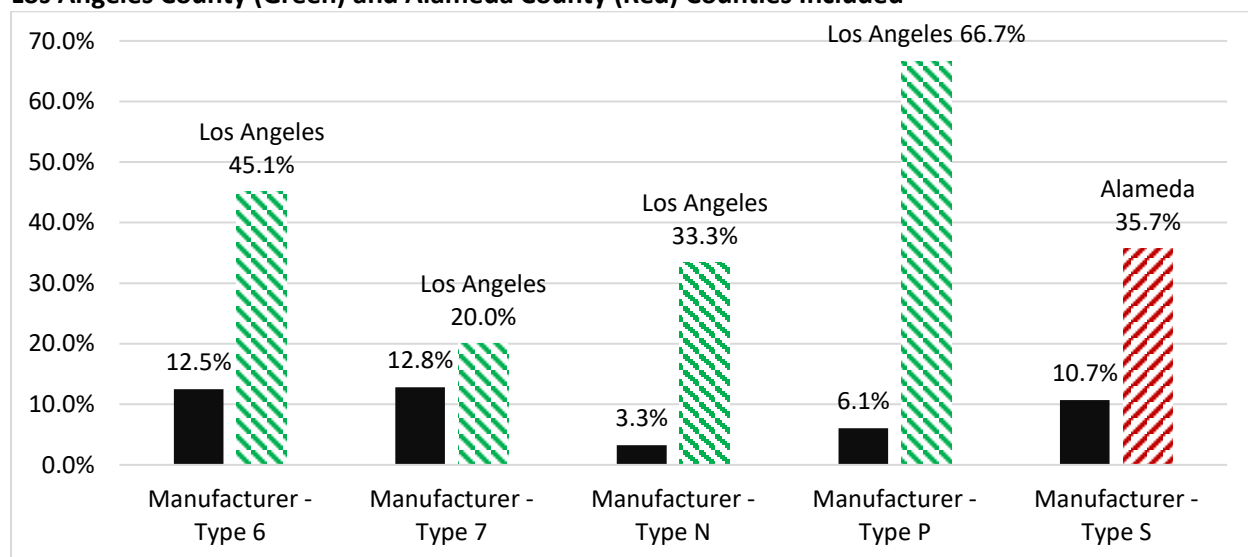
Manufacturers' orders will adjust over time based on new information about consumer preferences.

When a cannabis manufacturing license is provided in California, three criteria determine the license type:

- Typical activities performed;
- The chemicals used for extraction and post-processing, if any; and
- Whether the manufacturer works in a shared-use facility.

Various licenses exist to give manufacturers the authority to perform certain activities and use certain chemicals during extraction and after processing (refinement). A special license exists for manufacturers working in shared-use facilities (for example, facilities where multiple Type-S manufacturers share space and equipment on a rotating schedule). We described the current manufacturing license types (as of October 2023) above. The share in the study-area counties is shown in Figure 10c, where Los Angeles and Alameda counties dominate in specific manufacturing license types. Manufacturing concentrated in Los Angeles likely reflects land-use/zoning flexibility and proximity to workforce and retail markets.

**Figure 10c: Manufacturing Licenses in Study Area Counties and Share (%) of Total Statewide, 2022**  
**Los Angeles County (Green) and Alameda County (Red) Counties Included**



Source: DCC (our final assessment of active license data was December 2023)

<sup>13</sup> See <https://cannabis.ca.gov/licensees/requirements-cannabis-goods/> for more on labeling requirements.

Manufacturing license holders face limits that change economic outcomes and impacts from manufacturing because of limits on THC in each product and packaging requirements. These restrictions put more economic activities inside a manufacturer to remain compliant. Some include (as of December 2023):

- Edible cannabis goods may not exceed 10 milligrams of THC per serving and may not exceed 100 milligrams of THC per package;
- A retailer may not send unpackaged cannabis goods to another licensee for packaging or labeling;
- Cannabis goods in possession of a retailer that does not meet the packaging and labeling requirements must be destroyed;
- All cannabis goods must be in child-resistant packaging before delivery to a retailer;
- Non-edible cannabis products shall not contain more than 1,000 milligrams of THC per package if intended for sale only in the adult-use market and
- Non-edible cannabis products shall not contain more than 2,000 milligrams of THC per package if intended for sale only in the medicinal market.

Manufacturing license holders then transfer packaged and labeled products to distributors.

### Distribution, Retail and Other Cannabis Licenses

While not lacking in importance, the remaining license types are less complex regarding sublicenses. These additional licenses complete the supply chain in California. Distribution moves products among license types and to retailers. Retailers are the final points of sale to customers. More details are provided below. Our estimates of the direct economic impacts use track and trace (METRC) data as a primary data source for the economic activity in this industry for these six counties. We used a combination of the active license and track and trace data to describe the volume of cannabis harvest activity in the study area (and California overall) and taxable transactions.

Microbusiness licenses are businesses that cultivate less than 10,000 square feet of mature plants and engage in two other licensed cannabis activities, such as manufacturing products or distributing or selling cannabis products. A microbusiness is meant to integrate the supply chain vertically. Event licenses are for holding events where cannabis goods are sold or consumed on-site. The event organizer must have two of the following licenses from the State of California:

- Cannabis event organizer license;
- Temporary cannabis event license (at least 60 days before the event begins).

Local ordinances may allow “on-premise” consumption businesses, such as a cannabis lounge or bar. Cannabis lounges or bars must hold a DCC license (Type 10 or 12 licenses allow a storefront to exist). A critical aspect of lounges is their connection to tourism and their partnerships through regional economic development with local farmers, manufacturers, and clone entrepreneurs. Because of the study area counties’ importance in the history and culture of cannabis farming (both medicinal and recreational adult-use), such lounges can act as a portal to local cannabis and the stories about cannabis entrepreneurship in tourism areas for each county. Similar to taxation on alcoholic beverages, the taxation history of cannabis is evolving.

## Taxation

Economic impact analyses generally provide tax revenue estimates. While this study is not a fiscal impact analysis, estimates of city, county, state (called “State and Local” as a group below), and federal tax revenues from cannabis industry activity for each supply-chain node are provided. One caveat is that we consider “value-added” incomes in the economic impact estimates for each county and the study-area counties for each supply-chain node after cultivation. Taxes are generally assessed on a mix of gross receipts (sales revenues at a business) and value-added measures like profits for a local worker or business.

The cannabis tax environments at the state and local levels have been volatile since 2018. For example, statewide cultivation taxes across California are based on gross receipts or sales revenue generated (state level and some counties), square footage of canopy area (some counties), or final harvested commodity weights as reported through METRC. Some jurisdictions tax on license size applied for regardless of the amount of cannabis grown, crop loss or other factors connected to the business’ gross income.

California’s statewide cultivation tax began a hiatus on July 1, 2022, but local cultivation taxes exist across the study-area counties. The City of Santa Rosa has its tax separate from the County of Sonoma; for example, both have changed since 2021 but remain greater than zero in 2023. Humboldt County suspended its cultivation tax in 2022; that tax was reinstated to 10 percent of the original level in 2023 and 2024 (with some debate about moving to 20 percent in 2025). Over \$501 million had been collected through the state cultivation tax before repeal from 2018 to 2022.

Retail taxes have remained somewhat stable, likely with the theory that consumers are willing to pay for a regulated retail experience and are price insensitive (low “elasticity” and thus not worried about the price when making a cannabis purchase). The study area counties had approximately \$178.1 million in retail sales, for which the statewide excise tax would apply in 2022. As of 2023, local cannabis taxes are applied to the taxable amount for the statewide excise tax, which then acts as the basis for the locally-applicable sales tax.

Some cities and counties have supply-chain taxes beyond retail and cultivation. For manufacturers, distributors, and other cannabis businesses where local taxes are applicable, the tax is based on gross receipts in the study area counties as of 2023. Hence, we used topline business revenues to understand some local taxes.

In our estimations below, cannabis businesses have many of the same tax obligations as other businesses. Cannabis businesses, through their regional economic impacts, create additional tax revenues because of the gains made by different industries, workers, and households because of industry activity in those locations; our study-area counties have various other tax revenues generated.

- Income tax (Federal, State, and Local);
  - These are split into corporate and personal level income taxes;
- State sales and use taxes (we categorize these as “sales” taxes in the tables below);
- Property taxes (based on assessed property values);
- Social insurance taxes are paid by employers and employees (for example, social security and unemployment insurance taxes).

We assume regulated cannabis businesses pay state and federal income taxes alongside cannabis-related taxes. We will also assume unregulated cultivators are paying no cannabis-related taxes by being explicitly out of the regulated/taxed environment but are paying state and federal income taxes as applicable but may not be stating “cannabis” in any part of the tax returns.<sup>14</sup> A significant pain point for cannabis businesses across California and especially cultivators in the study-area counties is related to federal tax payments by all cannabis businesses (those considered to “touch” cannabis in a regulated environment) is Section 280E of the Internal Revenue Code as of 2023. Section 280E currently does not allow plant-touching companies to deduct many business expenses because cannabis remains a Schedule I substance and illegal under federal law.

Economic conclusions or analyses of (1) an inability to apply such business expenses to the cannabis industry or (2) the marginal decision-making of a currently unregulated business to become regulated is beyond this study’s scope. However, if rescheduling to Schedule III to V or de-scheduling took place and these expenses were deductible, there would be an increase in after-tax profitability for cannabis businesses that cannot currently make these deductions, assuming no other changes. Such allowances would provide more cash flow to cannabis business owners and likely more stability during lower commodity and product prices. Some of the expenses not deductible due to Section 280E from federal taxable income for cannabis-related businesses as of 2023 include (but are not limited to)<sup>15</sup>:

- |  |   |
|--|---|
| • Advertising and marketing, including costs for trade shows | • Interest  |
| • Banking fees   | • Insurance premiums  |
| • Travel expenses  | • License, permit, or Legal fees which help reduce the cost of starting a regulated business) |
| • Cleaning/janitorial services                               | • Office supplies   |
| • Computer and tech equipment                                | • Payroll services  |
| • Consulting fees  | • Rent on space not associated with production  |
| • Online services and data/software                          | • Subcontractors  |
| • Sales team salaries and wages                              | • Theft and loss  |
| • Health insurance   | • Utilities not associated with production  |

City and county (local) governments can override state laws and restrict or ban cannabis businesses in their jurisdictions. They can also impose local taxes on cannabis businesses, from cultivation to retail sales.<sup>16</sup> We see below that local cannabis taxes in the study area counties are primarily imposed upon cultivation and retail but do reach across the supply chain to generate government revenue.

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<sup>14</sup> In our interviews with study-area county service providers, we were told that unregulated cannabis farmers generally pay state and federal income taxes based on income from cannabis farming. Hence the assumption.

<sup>15</sup> See <https://polstontax.com/business-deductions-for-cannabis-companies/> for more.

<sup>16</sup> We assume that the amount of vendor compensation or rebates is relatively small in terms of the overall taxes collected; for example, a retailer can apply to have a reduced sales tax rate or a refund provided), which overestimates the amount of sales tax revenue generated at the state level.

## Cannabis-Related Taxes: Recent History, Changes and Assumptions

Three cannabis-specific taxes at the state level went into effect on January 1, 2018: (1) a cannabis cultivation tax, which is not collected as of July 1, 2022; (2) a cannabis retail excise tax, an additional sales tax collected at the retail point of sale as of January 1, 2023 (distributors collected this tax previously); (3) local and state licensing fees that act like start-up costs. At the county and city levels, local permitting and other taxes and fee structures have been constructed along the cannabis supply chain.<sup>17</sup>

Estimated taxable sales of cannabis products in California were approximately \$5.392 billion in 2022. The state's taxes come from the California Department of Tax and Fee Administration (CDTFA) for cannabis excise and cultivation taxes (to June 2022).<sup>18</sup> This sales level was down from over \$5.779 billion in 2021. The excise tax of 15 percent is applicable after any local tax is applied to the retail sales price and any delivery or service charges. The combined "price" determines the tax basis for the state excise tax. Then, the local sales tax for taxable sales is applied to determine the final cost of the consumer price. For example, if the price of a cannabis product at a retail storefront is \$100, the current local cannabis tax is three percent of retail gross receipts. There is a \$2 service charge for delivery; the cost basis for the excise tax is \$105. Fifteen percent of \$105 is \$15.75, moving the local sales-tax basis up to \$122.75. If the local sales tax is eight percent, the final cost to the consumer is \$132.57, with \$30.57 of that sale in some form of consumption tax.

During our interviews with cannabis businesses, taxation, and regulatory burden were significant concerns about the cannabis industry's future in these six counties. Assembly Bill 195 in 2022 eliminated the cultivation tax at the state level and maintained the excise tax at 15% until June 2025. Reducing California's cultivation tax in July 2022 helped reduce some regulatory and tax burdens. However, local cultivation taxes are not on hiatus. Start-up fees, excise taxes, and cultivation taxes are regressive taxes like sales taxes: the tax burden is more significant on smaller producers than larger producers and lower-income households than larger-income households as a percentage of income paid for the tax. Where cultivation taxes are based on the license type applied for and not the square footage produced or gross revenues earned, the tax is even more regressive and burdensome.

Taxation reduces the private-sector economic impacts but creates funding for regulation oversight, research, health, and perhaps redistribution for "equity" programs as DCC and the State of California deem necessary. Tax exemptions, including the cultivation tax exemption, have occurred at California's state and local levels since July 2022. From an economic development standpoint, the critical idea is that tax reductions can help new and existing cannabis businesses remove some business costs and regulatory burdens (tax compliance activities) from their operations and thus focus on farming, manufacturing, distributing, and selling cannabis products. Table 4 summarizes the main business types, the supply-chain nodes, the permit requirements as of 2023, the license requirements, and the issuing agency. What Table 4

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<sup>17</sup> A surety bond of \$5,000 (or some other amount if required by the county or city) must be posted by cannabis business licensees before they are issued a license to conduct business in the State of California.

<sup>18</sup> Because of the volatility in both tax rates and having cultivation taxes repealed at various times since 2018 at all levels of government, Table A.3 in the Appendix provides an overview of assumed tax rates (all subject to change) we used to generate the estimated economic impacts.



does is provide a brief overview of the compliance structure as of 2023 for a new or existing cannabis business.

**Table 4: License Types and Taxes Recap, as of December 2023**

Business Type	State Taxes	Study Area Taxes
Cultivator	Repealed to 2023	By square foot (Del Norte, Humboldt, Lake, Sonoma); gross receipts (Mendocino); harvest volumes (Trinity)
Distributor	None	By gross receipts (Mendocino and Santa Rosa in Sonoma County)
Manufacturer	None	Gross receipts in Santa Rosa (Sonoma County) and Mendocino County
Microbusiness	On the retail portion only	By license (Mendocino) and gross receipts in Santa Rosa (Sonoma County) and Mendocino County after minimum gross receipts level
Nursery	Repealed to 2023 (if any flower or leaf originated from a nursery)	Gross receipts in Santa Rosa (Sonoma County)
Processor	Repealed to 2023 (if any flower or leaf originated from a processor)	Gross receipts in Santa Rosa (Sonoma County) and Mendocino County
Testing Facility		By license (Mendocino), gross receipts in Santa Rosa (Sonoma County)
Retailer	15% Excise Tax on Taxable Receipts	Local taxes in all but Humboldt and Trinity counties), gross receipts in Mendocino

Source: DCC, city, and county cannabis, and finance departments, all subject to change; see Appendix Table A.3 for more details.

Let's now look at each supply-chain node and the methodologies and estimates of the direct economic impacts as a basis for the broader estimates.

## 4. Supply-Chain Nodes and Direct Impact Estimates

### Cultivation

Each stage of cannabis cultivation represents an opportunity for supply-chain partnerships and local business growth. These stages generate services that become indirect economic impacts after harvests through cannabis vendors and employees. Farmer activities become wages paid, vendor purchases, payments for utilities and other needs, and then commodity harvests are sold to create revenue for the cannabis farmer, both regulated and unregulated. All these payments create broader economic impacts.<sup>19</sup>

It is challenging to compare cannabis farming to other farming once harvest ends. In our interviews with cannabis businesses, use commercial lines of credit as a cannabis-based business, and a lack of available, regulated escrow accounts and purchase orders that can be easily pursued in civil court reduce invoice collectability throughout the supply chain. Farmers may find themselves at the beginning of this supply

<sup>19</sup> One issue revealed by our interviews and survey work was the timing of payments and lack of payments to cannabis farmers delaying economic impacts and their ability to stay current with business costs. Our estimates here assume payments are being made at some point to finance farmer costs and any profitability. However, the practical aspects of payment delays are discussed later as a major concern for this industry, especially smaller firms.

chain (no harvest, no product) but last in the cash trail in terms of payments because consumers provide the most consistent source of inbound cash flow without external financing sources (such as bank loans and other lines of credit) to create revenue between payments for harvests otherwise.

In our estimates of cultivation outcomes below to describe cannabis farmers' direct economic impacts per Figure 9, we used the following assumptions and methodology:

- Prices charged by cultivators depended on the farming method<sup>20</sup>:
  - Prices specific to cannabis flower as a commodity were assumed to be:
    - \$450 per pound for outdoor grow;
    - \$600 per pound for mixed-light tier 1 grow;
    - \$1,100 per pound for mixed-light tier 2 and indoor grow;
  - Two other products that were packaged from harvests included leaf and fresh cannabis plant assumed to be 29 percent and 13.7 percent, respectively, of the flower price per pound based on our interviews within the study-area counties and the 2018 to 2022 statewide tax on cultivation;
- The track-and-trace (METRC) data provide estimated amounts of regulated harvest weights. The two weights of interest are:
  - The “dry” harvest weight as an indicator of farmer economic activity level;
  - The packaged weight of salable, harvested cannabis for other parts of the supply chain;
  - An additional 30 percent of harvested, packaged commodity cannabis is assumed to be grown by unregulated cultivators in 2022;
- Track and trace data also have license data attached to each “Package ID”, the unique identifier of harvested commodities and final product movements to estimate volume generated; and
- The sum of product volume in grams multiplied by the estimated price per gram to estimate the total expected revenue for each supply chain node:
  - The “expected” aspect is due to payment not necessarily arriving based on commodity and product movements to the following supply chain node;
  - The expected revenue generated estimates for:
    - Expenses paid by the cannabis business;
    - Profit for the cannabis business owner;
    - Taxes paid, when applicable, at each supply-chain node.
- Our interviews and industry insiders provided an estimate of 28 grams of dry, salable cannabis flower per square foot of bearing plants during harvest;
  - This assumption helps determine an estimate of the square feet and “bearing acreage” based on estimated harvest volumes (in grams);
- We assume there are approximately five (5) FTE contractor or payroll employees per acre across all growing methods on average per year across these six counties, based on our interviews and survey data;
- License data provide an estimate of overall potential acreage in each county that could be potentially cultivated.

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<sup>20</sup> These prices are from our team of regional experts and advocates and from our interviews, survey data and from METRC where data was available. MJBiz Factbook had the range as \$633 to \$947 per pound in California overall in 2022.

Our estimates of the direct economic impacts of cannabis cultivation are a mix of fully regulated and unregulated farming. Like any agricultural commodity, cannabis is a plant that produces harvested goods from horticultural or farming techniques. Growing needs – and thus vendor costs – exist across various activities. These include irrigation, trellising, fencing, insect mitigation, lighting, cooling, heating, pruning, soil amendments and nutrients, trimming, and watering. Cannabis farming has additional costs, such as security, which are different from other crops. Being a sizeable value-to-weight crop and having a parallel unregulated market leads to a need to defend properties, regardless of their being in a regulated environment. From an economic development standpoint, this is an added benefit from cannabis farming regionally, including insurance; for farmers, there are extra costs and activities to manage and additional threats to profitability.

This study's critical challenge was gathering data from businesses that do not want to reveal their annual business data due to many factors. Our industry experts, third-party studies, and survey data suggested that unregulated cannabis cultivation is approximately 30% above and beyond currently regulated harvest volumes. Farming costs should be categorically similar for regulated and unregulated farmers engaged in the same style of farming (outdoor, indoor, or mixed light). To remain conservative, we assume there are no economic impacts of unregulated manufacturing, distribution, and retail due to these transactions having less formality regarding support infrastructure. However, unregulated cannabis may be sold into the regulated supply chain, but our economic impact estimates do not explicitly calculate those outcomes. Additional data challenges include:

- The official data on taxable sales likely understate the actual revenues earned by cannabis farmers because of unregulated market activity, including unregulated retail;
- The additional economic impacts of an existing, unregulated farmer to a similar regulated cannabis business may be minor in these six counties because those operations already exist;
  - Some unregulated farmers may have new capital expenditures, as well as new professional services expenses to help with permitting, contracts, and other compliance issues;
- DCC's license data measure capacity or potential supply based on current license holders and not actual operations (estimates that should come from track-and-trace data).

Cannabis farming also includes capital costs for soil, fencing materials, pipes, faucets, fittings, nails, wire, water tanks, greenhouse materials, etc. How such costs are spent on local vendors provides economic opportunity in each study-area county. The choice to cultivate indoors changes costs and should also change revenues; prices are generally higher for indoor-grown products. There are different economic impacts to indoor versus outdoor growing based on the economic activities of managing each type of growing or canopy method.

Table 5 provides an estimate of bearing acreage and estimated total acreage with the following assumptions based on the 2022 harvest and license data:

- We use 28 grams of dry harvested flower per square foot of growing area to estimate harvested area/acreage;
  - Licensed cultivators, based on the license held, have a maximum acreage/square foot area to create harvested cannabis;
  - Some subset of a growing area is likely to be fallow;

- There are 43,560 square feet per acre;
- There is an additional 30% of growing area statewide that is unregulated/personal use planted acreage in terms of tracking the actual economic impacts of cannabis in these six counties.

**Table 5: Estimated (Est.) Bearing Acreage, 2022**

	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area
Est. Regulated Bearing Acres	0.25	157	55	163	80	15	472
Est. Unregulated Bearing Acres	0.08	46	17	49	24	5	140
<b>Total Bearing Acres</b>	<b>0.33</b>	<b>203</b>	<b>72</b>	<b>212</b>	<b>104</b>	<b>20</b>	<b>613</b>

Sources: DCC and SSU Survey and Interviews Data.

Table 6 shows the estimated grams produced by cannabis cultivators in 2022 based on their track-and-trace reports. As we saw above, the cultivators in the study area employ different techniques that produce different results.

**Table 6: Estimated Bearing Acreage by License Type, 2022 Data**

County	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Area Totals
Indoor	-	5	0	2	29	0	36
Mixed Light 1	-	94	1	102	0	7	203
Mixed Light 2	0.25	14	1	5	0	2	22
Outdoor	-	43	54	54	48	6	205
Other	-	1	-	1	4	0	6
Est. Regulated Bearing Acres	0.25	157	55	163	80	15	472
Est. Unregulated Bearing Acres	0.08	46	17	49	24	5	140
<b>Total Bearing Acres</b>	<b>0.33</b>	<b>203</b>	<b>72</b>	<b>212</b>	<b>104</b>	<b>20</b>	<b>613</b>

Source: DCC and SSU Calculations from Track and Trace Data, 2022

Regardless of individual farmer methods, cannabis cultivation has three simple analogs in crop farming that we use as a way to consider the economic impacts of the 2022 harvest levels, as reported by DCC:

- Indoor cultivation is unique in terms of using artificial light only, and few industries provide a solid analog to which we can apply the IMPLAN® model:
  - We use IMPLAN® Sector 6 (Greenhouse and Nursery Farming) as discussed below for indoor and mixed-light farming based on having “indoor” farming infrastructure and methods, including light control<sup>21</sup>;
  - Nursery operations for breeding plants or cloning are also greenhouse farming, though creating different cannabis products than cultivators otherwise;
    - Some cultivators will hold nursery licenses to add available, licensed space for both propagation and reduced crop-rotation time and cost
- Outdoor cultivation is similar in method to small-lot, specialty crop farming;

<sup>21</sup> See IMPLAN®, September 2023, “[Adding Brand New Industries](#)” for more details and best practices for cannabis research on economic impacts.

- Organic fruits such as strawberries grown outdoors are a good example;
- We will use IMPLAN® Sector 10 (Other Crop Farming) to represent outdoor cannabis farming;
- Mixed-light cultivation uses various techniques, from a simple canopy inside a structure to variable artificial light assistance in greenhouse-like conditions (IMPLAN® Sector 6).

METRC is the current “track and trace” system used to monitor the origin and destination of cannabis products from harvest to retail.<sup>22</sup> This system and the data created can be a wealth of information about the regulated cannabis industry. For each of the six counties, the following summary data for cultivation provide a sense of what the track and trace data currently offer. Table 7’s numbers provide grams harvested and packaged for flower (classic harvested “buds” to be sold in dry form or into manufacturing), fresh cannabis plant (used in some products as filler), and leaf (has less THC but is sold as additional inputs in cannabis manufacturing), in tons of harvested product, the six counties produced approximately 1,696 tons; California produced 21,336 tons in 2022.

**Table 7: Cannabis Flower as Commodity, Estimated Harvest Volume (kg or Thousands of Grams), 2022**

Salable Product	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area
<b>Total Flower</b>	1,531	237,532	92,421	209,218	113,186	22,574	676,462
<b>DCC Total Dry Harvested and Packaged Commodity*</b>	1,531	677,744	342,584	367,322	370,361	48,036	1,807,578

Source: DCC (METRC) and SSU Survey and Interviews, Author’s Calculations, \* includes leaf and fresh cannabis plant.

An important note on estimating cultivation levels is that some farmers may choose to follow a portion of their licensed grow area (grow less than their fully licensed area) at different rates. Rules on following licenses (and perhaps adjusting some local tax liabilities based on licensed grow areas not followed) differ from county to county. Cultivators utilize different light-deprivation techniques, changing the potential harvest yields from a licensed area. Other counties may have different proportions of unregulated activity from the 30-percent baseline used here.

An essential concern is profitability. Table 8 provides a typical profit and loss statement (proforma) based on our research and interviews with cannabis cultivators. Individual farming operations may have different proportions of expenses and more or fewer categories. Notice in the proformas that the federal taxes are relatively large as a percentage of sales income versus state and local taxes. This is due to Internal Revenue Service (IRS) Code Section 280E and the lack of deductibility of many business expenses. A simple financial implication is that federal taxable income is a function of gross margin (revenues less cost of goods sold or COGS) versus net earnings (revenue less all operating expenses) less non-cash expenses and other deductions such as amortization, depreciation, and deductible interest. More after-tax income means more marketing, business investment, and resilient local businesses and communities. What these summary data allow is an estimated level of direct economic impacts. Harvested products then become inputs in manufacturing processes.

<sup>22</sup> See <https://www.metrc.com/> for more.

**Table 8: Cannabis Cultivator Proforma Financial Statement, 2022 Dollars,  
\$1 million of dry flower sold (Example from Survey and Interview Data)**

Category	Subcategory	Outdoor	% of Flower Revenue	Indoor	% of Flower Revenue
Revenues	Flower	\$1,000,000		\$1,000,000	
	By-Products	\$150,000	0.15	\$200,000	20.0%
COGS	Trimming	\$80,000	8.0%	\$94,000	9.4%
	Storage Fees	\$50,000	5.0%	\$89,000	8.9%
	Rent	\$10,000	1.0%	\$10,000	1.0%
	Clones	\$20,000	2.0%	\$19,000	1.9%
	Electricity	\$10,000	1.0%	\$127,000	12.7%
	Water and Nutrients	\$50,000	5.0%	\$90,000	9.0%
	Supplies to Grow	\$10,000	1.0%	\$20,000	2.0%
	Total COGS	\$230,000	23.0%	\$449,000	44.9%
Gross Margin		\$770,000	77.0%	\$551,000	55.1%
Operational Expenses	Distributor Fee	\$100,000	10.0%	\$100,000	10.0%
	Wages Sales and Administration	\$138,000	13.8%	\$137,000	13.7%
	Professional Services	\$50,000	5.0%	\$50,000	5.0%
	Security	\$13,000	1.3%	\$13,000	1.3%
	Office Expenses	\$20,000	2.0%	\$20,000	2.0%
	Insurance	\$10,000	1.0%	\$10,000	1.0%
	Tracking Software	\$4,000	0.4%	\$4,000	0.4%
	Marketing	\$10,000	1.0%	\$10,000	1.0%
	Dues/Assoc Fees	\$2,000	0.2%	\$2,000	0.2%
	License Fee (Annual)	\$15,000	0.4%	\$15,000	0.4%
	Travel	\$9,000	0.9%	\$9,000	0.9%
	Total Op Ex	\$371,000	40.8%	\$370,000	40.8%
EBITDA on Flower		\$399,000	22.4%	\$181,000	18.1%
Other Expenses	Amortization	\$50,000	5.0%	\$50,000	5.0%
	Depreciation	\$50,000	5.0%	\$50,000	5.0%
	Interest	\$10,000	1.0%	\$10,000	1.0%
	Federal Tax	\$269,500	27.0%	\$192,850	19.3%
	State and Local Taxes	\$179,800	15.5%	\$205,000	20.5%
Net Income for Owner/Farmer		\$(10,300)	-1.0%	\$(126,850)	-12.7%

Notes: "EBITDA" = earnings before interest, taxes, depreciation, and amortization

"COGS" = cost of goods sold

Sources: <https://www.sfdph.org/dph/files/csl/SFCLG-handout.pdf>, SSU, and CalPoly Humboldt Survey results, , individual businesses may vary

## Cannabis Manufacturing

Manufacturing adds value by transforming and adding value to raw cannabis. Vendor relationships and machinery to complete these processes and packaging needs generate economic impacts across multiple industries. We see in later sections the power of manufacturing to provide jobs and incomes in local communities versus other parts of the supply chain. Because of potential multiplier effects, manufacturing is a focal pursuit of many economic development professionals across California and the United States regarding new and expanding regional businesses.

As an example, a manufacturer may purchase raw cannabis in a packaged form for transport from a farmer (flash-frozen, wet cannabis that is vacuumed-sealed) at \$500 per pound (approximately \$1.5 per gram). This becomes part of COGS for that manufacturer, where other expenses add value to that wet cannabis as it is transformed from an agricultural commodity into a new product. In the proforma financial statement shown here, the sales revenue of \$1,000,000 includes \$400,000 of additional costs and profit that “add value” to the cannabis supply chain. This extra value is what we are measuring in the economic impact estimates below. In this case, 60 percent of sales from COGS are already captured in the cultivator revenues.

We used a combination of data to determine the number of employees engaged in regulated manufacturing for each study area county. We considered the number of workers per payroll medicinal and botanical manufacturer (IMPLAN® Sector 171 that matches the North American Industry Classification System (NAICS) code, number 325411) in California and in the counties in sum and also data within IMPLAN. Using the number of licensed cannabis manufacturing firms per study-area county, the following 2022 full-time equivalent employee counts were used as the basis for the direct impacts in the economic impact estimates in Tables 16 to 19 and in the Appendix.

- Del Norte = 6
- Humboldt = 301
- Lake = 35
- Mendocino = 84
- Sonoma = 330
- Trinity = 5

Manufactured product categories for cannabis in METRC are as follows: Edibles, Tinctures, Pre-Rolls, Lotions/Topicals, and Vape Cartridges. From an economic-impact standpoint, raw cannabis flower, leaf and other materials are inputs for cannabis manufacturers (we use IMPLAN® Sector 171, Medicinal and Botanical Product Manufacturing). Such manufacturers are like medicinal or specialty food or beverage product manufacturers in that there are tasks that mirror these industries:

- Receiving and sorting;
- Preparation and storage;
- Quality assurance;
- Cannabis trimming, stemming, and conditioning;
- Cannabis cutting, blending, drying;
- THC and CBD Extraction;

- Mixing with volatile, non-volatile infusion materials;
- For edibles: production of medium (gelatin, chocolate, etc.), packaging, wrapping;
- For pre-rolls: rolling, wrapping, packaging;
- For oils and cartridges: filling, testing, wrapping, packaging;
- Boxing and labeling for final destinations;
- Preparing for distribution and potential repackaging.

Manufacturers are exposed to changing prices on both sides of their delivery systems: (1) rising costs of inputs can increase both costs of goods sold and operational expenses; (2) shifting prices of manufactured goods, including changing demand at the retail level, can affect revenues and continued new orders from distributors and retailers. Packaging, labeling, and testing are allied industries for the core cannabis supply chain.

**Table 9a: Proforma for Cannabis Manufacturer, Example, 2023 Dollars, \$1,000,000 in Revenue (Example from Survey and Interview Data)**

Category	Subcategory	Value	Percent of Revenue
Total Revenue		\$1,000,000	
Cost of Goods Sold			
	Extraction Tech Use	\$110,000	11.0%
	Cannabis Purchase	\$270,000	27.0%
	Packaging/Shipping	\$80,000	8.0%
	Facility Costs	\$50,000	5.0%
	Facility Labor	\$170,000	17.0%
	Total COGS	\$680,000	68.0%
Gross Profit		\$320,000	32.0%
Operational Expenses			
	Wages Sales and Administration	\$35,000	3.5%
	Professional Services	\$49,200	4.9%
	Security	\$4,800	0.5%
	Office Expenses	\$8,100	0.8%
	Insurance	\$26,800	2.7%
	Tracking Software	\$10,000	1.0%
	Marketing	\$50,000	5.0%
	Dues/Assoc Fees	\$10,000	1.0%
	Licenses (Annual)	\$15,000	0.5%
	Travel	\$10,000	1.0%
	Compensation of Owners	\$100,000	10.0%
Net Operating Income		\$1,100	0.1%
	Amort	\$50,000	5.0%
	Depreciation	\$42,000	4.2%
	Interest	\$10,000	1.0%
	Federal Tax	\$112,000	11.2%
	State and Local Taxes	\$20,000	10.0%
Net Income for Owners		\$(232,900)	-20.3%

Sources: Interviews and Survey Data, IBIS World (December 2023), individual businesses may vary



Untested cannabis goods cannot be sold by a retailer legally and must be destroyed. A retailer may not send cannabis goods to a distributor for testing. Thus, testing services are accessed by cultivators, manufacturers, or distributors. When products arrive at retailers, testing must be complete. This allows for the correct packaging and labeling. THC levels, CBD levels, or other characteristics of tested products are on product labels. Retailers cannot accept cannabis goods that are not adequately packaged and labeled. An industry creates economic impacts in a county, region, or state through local vendor relationships.

## Cannabis Distribution

Distribution businesses in the cannabis market have roles that connect one supply-chain node to others and facilitate product testing and delivery of final products offered at retail. Distribution has the following cost of goods sold or primary costs of services provided:

- Warehousing and logistics (movement between supply chain nodes)
  - This includes facilities costs and storage;
- Security on-site and during delivery; and
- Confirming and utilizing testing services as part of overall services provided;

Other expenses depend on the type of distributor. Some licenses are transport only, where delivery from one supply-chain node to the next is the only service provided. Manufacturers and cultivators that utilize transport-only distribution have gains for those businesses as part of the “indirect” impacts shown below. For IMPLAN®, we use the following industries as proxies for cannabis-specific distribution that is more than just transportation-only (testing requirements, storage, compliance, and distribution to retail require more infrastructure than simple movement between cultivators, manufacturing, and distribution otherwise with a transportation-only license):

- Cannabis distribution = Industry Sector 421, Couriers and messengers (secured transport)<sup>23</sup>

As an example, a distributor may purchase raw cannabis in a packaged form for transport from a farmer (a raw, dried flower that is vacuumed-sealed) at \$900 per pound (approximately \$1.98 per gram). This becomes part of COGS for that distributor, where other expenses add value to that raw cannabis as it is moved from the farmer’s facility to a retail point-of-sale. In Table 9b, the distributor’s sales revenue of \$1,000,000 includes \$300,000 of additional costs and profit that “add value” to the cannabis supply chain. This extra value is what we are measuring in the “direct” economic impacts that then become broader economic outcomes for these counties.

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<sup>23</sup> In our interviews with regional advocates and service providers, the comparison to couriers was discussed. A note was made that courier or messenger services do not have sequestered products and rejected products if a change of address fails, and also do not usually receive money based on the sale of the item being shipped; further distribution modes for cannabis usually (but not always) takes part in the actual sales and benefits directly from those sales. Because the economic impacts are more about the costs and infrastructure to deliver a product or service, and IMPLAN® has a finite number of sector choices, we used sector 421.

**Table 9b: Proforma for Cannabis Distributor, Example, 2023 Dollars, \$1,000,000 in Revenue  
(Example from Survey and Interview Data)**

Category	Subcategory	Value	Percent of Revenue
Total Revenue		\$1,000,000	
Cost of Goods Sold			
	Transportation Labor	\$200,000	20.0%
	Testing Costs	\$50,000	5.0%
	Vehicle and Facility Costs	\$86,800	8.7%
	Total COGS	\$336,800	33.7%
Gross Profit		\$663,200	66.3%
Operating Expenses	Salaries and wages	\$117,000	11.7%
	Professional Services	\$20,000	2.0%
	Secure Storage/Security	\$80,000	8.0%
	Office Expenses	\$10,000	1.0%
	Insurance	\$20,000	2.0%
	Tracking Software	\$20,000	2.0%
	Marketing	\$100,000	10.0%
	Dues/Assoc Fees	\$10,000	1.0%
	Licenses (Annual)	\$6,000	1.0%
	Travel	\$20,000	2.0%
	Compensation of Owners	\$100,000	10.0%
Total Operating Expenses		\$503,000	50.3%
Net Operating Income		\$160,200	16.0%
	Amort	\$50,000	5.0%
	Depreciation	\$50,000	5.0%
	Interest	\$10,000	1.0%
	Federal Tax	\$232,120	23.2%
	State and Local Taxes	\$74,000	7.4%
Net Income for Owners		\$(255,920)	-25.6%

Sources: Interviews and Survey Data, IBIS World (December 2023), individual businesses may vary

We used a combination of data to determine the number of employees engaged in regulated distribution for each of the study area counties. We considered the number of workers per payroll for the analog to IMPLAN® Sector 421, NAICS code number 492110 for courier or secured transport in California and in the six counties in sum and also data within IMPLAN. Using the number of licensed cannabis distribution firms per study-area county, the following 2022 full-time equivalent employee counts were used as the basis for the direct impacts in the economic impact estimates in Tables 20 to 23 and in the Appendix.

- Del Norte = 5
- Humboldt = 140
- Lake = 15
- Mendocino = 51
- Sonoma = 102
- Trinity = 10

As we see below, distribution and retail licenses for cultivation and manufacturing are relatively small in volume in the six counties considered here. Perhaps distribution is lacking due to land-use rules that could

encourage more regional vertical integration with few distributors through a simple change. This would also create more value-added incomes in these six counties. Sonoma County is more balanced due to more links to broader markets in terms of population size throughout California.

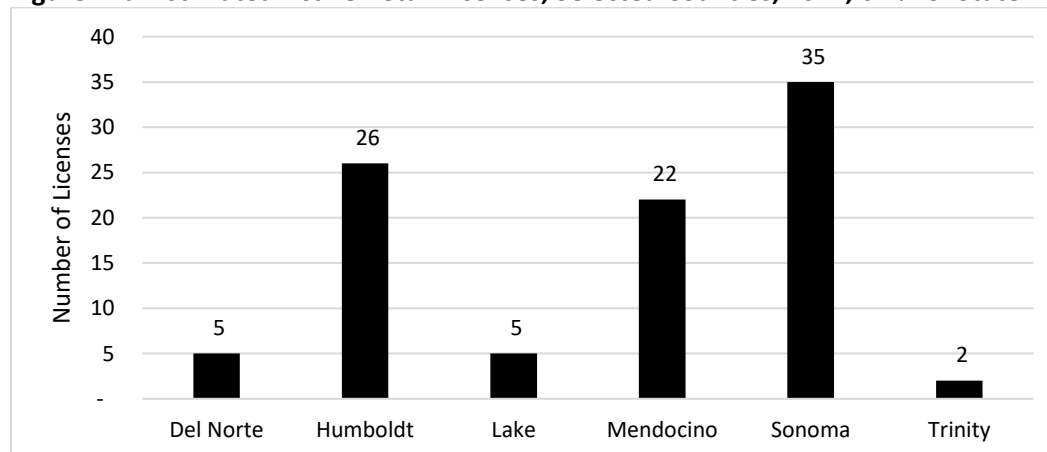
## Cannabis Retail

Some debate exists on what industry is the best cannabis retail analog. While the future after 2023 likely has a mix of specialty shops and grocery-store point-of-sale locations in California, for now, regulated retail is generally at a storefront, delivery, licensed cannabis event, or specific cannabis retailers. Some issues apply to a tightly monitored environment where cannabis retail can be seen as more like a jewelry retailer than a specialty health or food store:

- Until removal from Schedule I status with the federal government, merchant banking services are going to be generally unavailable to retailers as a medium of exchange;
- With no credit card use or lack of credit availability, there can also be a reduced number of customers;
- Cannabis products and commodity harvests by weight are relatively high in value, like diamonds at retail, and thus have different security conditions and transport needs/costs.

For cannabis retailers, medical or recreational, we use IMPLAN® Sector 407 - Health and Personal Care Retail (more security issues and investments in security equipment, services, and workers than other retail sectors available among the IMPLAN® sectors). This sector is as close a fit to secure retail businesses as the sector choices allow in IMPLAN® as of 2023. Trinity County has no taxable retail sales as of the end of 2022 (our year of economic impact estimates), but there were two retail licenses; for the other five counties, Figure 11a has a summary of retail licenses active in each county through 2022. California's retail cannabis sales were estimated at approximately \$5.38 billion in 2022.

**Figure 11a: Estimated Active Retail Licenses, Selected Counties, 2022, 6.4% of Statewide**

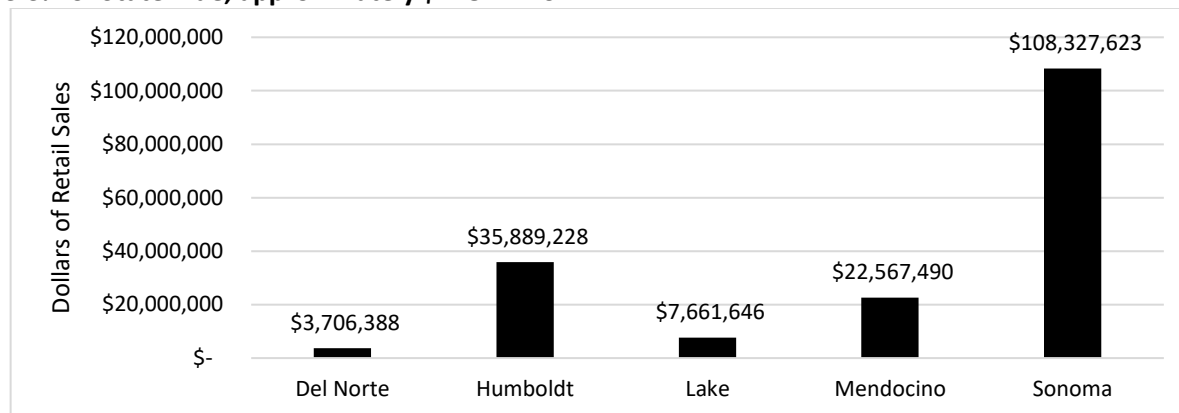


Source: CA Dept of Cannabis Control, as of December 2023

Figure 11b shows the dollar value of regulated cannabis sales in the study area counties. Notice that Trinity County does not have retail sales, as no retailers/dispensaries are regulated as of calendar year-end 2022. We know these retail sales figures are underestimates, given that unregulated retail sales exist. However,

we cannot expect cannabis sold in an unregulated market to have the same economic impact as cannabis sold in a regulated environment, which has more infrastructure, testing, compliance activities, and service costs associated with providing a space for customers to purchase cannabis products.

**Figure 11b: Cannabis Taxable Sales for Calendar Year 2022, Selected Counties, 2022 Dollars, 3.3% of Statewide, approximately \$178 million**



Source: CDTFA, as of September 30, 2023 (Q3 2023 estimates for the 2022 calendar year)

Table 9c provides a regulated retail business proforma example based on our survey results, insider interviews and conversations, and general data about the business of cannabis retail in these six counties.

**Table 9c: Retail Proforma, Revenues and Expenses, \$1,000,000 of retail sales (Example from Survey and Interview Data)**

Category	Subcategory	Amount	% of Revenue
Total Revenue		\$1,000,000	
Cost of Goods Sold	Purchases of packaged cannabis	\$554,800	55.5%
Gross Profit		\$445,200	44.5%
Operating Expenses	Salaries and wages	\$113,000	11.3%
	Professional Services	\$20,000	2.0%
	Security	\$80,000	8.0%
	Office Expenses	\$10,000	1.0%
	Insurance	\$20,000	2.0%
	Tracking Software	\$20,000	2.0%
	Marketing	\$100,000	10.0%
	Dues/Assoc Fees	\$10,000	1.0%
	Licenses (Annual)	\$11,000	1.0%
	Travel	\$20,000	2.0%
	Compensation of Owners	\$100,000	10.0%
Total Operating Expenses		\$504,000	50.4%
Net Operating Income		\$(58,800)	(5.9%)
	Amort	\$34,000	3.4%
	Depreciation	\$12,000	1.2%
	Interest	\$500	0.1%
	Federal Tax	\$155,820	15.6%
	State and Local Taxes*	\$-	0.0%
Net Income		\$(261,120)	(26.1%)

Sources: DCC (METRC) and SSU Survey and Interview Data, IBIS World Dec 2023; individual businesses may vary

\*Sales and excise taxes are not stated here as they are considered pass-through costs.

Since every sale of regulated cannabis is taxable at the point of sale (cannabis retailer), taxable sales data provide an aggregate estimate of regulated cannabis retail revenues for our analysis. The cannabis industry can learn from other industries and consider more supply-chain integration (cultivation to retail) to draw visitors toward major cultivation areas (as in these six counties). We now look at our survey data to complete the raw data for the estimates below.

## Survey Results and Interview Feedback

Our data-gathering process involved asking survey questions of cannabis businesses in the study-area counties. We used regional industry partners, service providers, and regional cannabis advocacy organizations and networks to generate responses throughout these six counties. We received 97 responses, with over 85 from cultivation. Unfortunately, there was feedback from potential respondents about asking questions concerning the price and volume of products, revenues, and costs, as well as some survey fatigue in the industry. This is especially true where historical fears and memories of criminal prosecution remain. Our survey's broad aim was to better understand costs and revenues for typical cannabis businesses (we asked about harvest volume and number of employees to have a metric related to relative business size). Respondents to the survey were primarily from Humboldt, Mendocino, and Trinity counties.

In sum, we received only six (6) responses from Lake, Sonoma, and Del Norte. Twelve of our 97 viable responses were unregulated cultivators. We also asked for data from 2019 to 2022 to generate some history. To identify the place of each respondent's business, we asked what county the business was in and if they also operated in more than one county in California. For cultivators, we asked about the following business data from cannabis businesses between the years of 2019 and 2022:

- Square feet of mature canopy/growing area by license type;
- Pounds harvested;
- Number of harvests;
- Total expenses;
- Total costs paid to government agencies (as a way to measure compliance costs);
- Total revenues; and
- Number of employees during 2022.

These survey data were meant to provide samples of business data that could be used to help build proforma financial statements (see Tables 8, 9a, 9b, and 9c) combined with categories of expenses that exist in farming cannabis. Highlights from cultivator survey responses included:

- Cultivators that responded to the survey primarily operated in the county where their main farm operation is located;
- If engaged in another business, cultivators also distributed their harvest or manufactured a product from raw cannabis;
- Many respondents held multiple licenses, allowing some vertical integration to take place;
- Costs per square feet for cultivators between 2019 and 2022 ranged between \$10.00 and \$11.40 at the median;

- The maximum reported in the survey ranged between \$320 and \$375 per square foot; these costs were for cannabis grown indoors;
- The number of pounds harvested ranged between 300 and 3,500 per year; or
  - Between 170,000 and 1.37 million grams of raw cannabis.
- Number of harvests ranged between one and six harvests per year from 2019 to 2022;
  - One caveat is that multiple harvests may be seen as harvest cycles and could be from the same area but different zones of mature plants within a single canopy;
  - The median size of farms was between 5,000 and 8,500 square feet for mixed-light and indoor farming;
- Responses from outdoor cannabis farms were between 6,250 and 8,500 square feet in area;
  - Indoor farming responses ranged between 500 and 4,250 square feet;
  - Mixed-Light Tier 1 farming responses ranged from 3,000 to 5,000 square feet;
  - Mixed-Light Tier 2 farming responses ranged from and 3,000 to 5,000 square feet;
  - No farmer in our sample had more than one acre planted (no cultivators from Lake County responded).

### **Supply-Chain Node Survey Responses Beyond Cultivation**

We asked similar questions for other parts of the supply chain but more about units produced or sold (regardless of weight or type), revenues, costs, and employees. We asked manufacturers, distributors, and retailers the same questions generally.

- What was your annual production level in units manufactured or annual units distributed or sold from 2019 to 2022?
- How many people worked for your business each year from 2019 to 2022?
- What types of products did you manufacture, distribute, or sell, by % of total units produced, between 2019 and 2022?
  - Concentrates
  - Prerolls
  - Edibles
  - Tinctures
  - Topicals
  - Packaged Flower
  - Other products
- What was your total revenue each year between 2019 and 2022?
- What was your total expenses each year between 2019 and 2022?

We had a more prominent firm (over 250 employees) and two small firms (4 and 6 workers each) for manufacturing. Products made were mixed across product categories. We had only one distributor provide feedback, so we will not summarize that here. For our retailer respondents, they ranged between 5 and 18 employees each, generating between \$3,000,000 and \$8,500,000 in revenue. Expenses were close to revenue levels for those that responded, suggesting profit pressures exist after paying owners as salaried workers and all expenses.

The survey instrument was available for approximately six months. Our team and regional partners did a lot of work to ask, cajole, and plead with cannabis businesses to complete this survey. Two pieces of feedback for future cannabis-industry studies using a survey include:

- There should be a central source of surveys that ask for business-related data about this industry to avoid survey burnout or overload but also establish an annual cycle of gathering data and
- Those organizations administering the surveys were bound not to allow responses to be part of any legal actions, thus protecting the data even if the currently unregulated activity is occurring.

We expected and received more cultivator responses than other types of cannabis businesses, given license counts in the study-area counties. Due to our promise of anonymity to our respondents and the vocal concerns provided in our group and individual interviews about sharing survey information, our summary provides a broad overview. There are many challenges in this industry in terms of trust and primary data sources. The following section summarizes other industries likely affected by the cannabis industry as part of the economic footprint and broader economic effects of harvested to retail cannabis on the study area counties.

### “Allied” Businesses: Direct Vendors and Suppliers

To understand economic impacts, one must understand what industries are directly or indirectly related to the industry being studied. For the cannabis industry, core supply-chain (dirt to retail) businesses define the cannabis supply chain (how value is captured at each supply-chain link locally or regionally). Allied industries define vendor relationships that service core supply-chain needs and expand the capture of cannabis’ retail value locally versus purchasing goods and services from outside vendors. A loss of cannabis businesses can become broader business losses; conversely, if the cannabis industry grows in these six counties, allied industry revenues and jobs should grow in tandem. Let’s now use data and economic modeling to measure the economic impacts of cannabis businesses on the study-area counties.

**Table 10: Shared Vendors Across Supply-Chain Nodes, Cannabis Supply Chain**

Allied Industry	Cultivation	Manu	Distribution	Retail
Last-mile delivery			X	
Armored vehicle services (cash from retail)	X	X	X	
Soil and amendments	X			
Plumbing Supplies and services	X			
Electrical supplies and services	X			
Greenhouse/Growing Container systems	X			
HVAC systems	X	X	X	
Fencing	X			
Security equipment	X	X	X	X
Growing media (soil, hydroponics, racks, benches)	X			
PPE for clean-room manufacturing		X		
Chemistry equipment in manufacturing		X		
Storage equipment (Tanks, racking, etc.)		X		
Glass shelving, secure storage in retail		X		
Wiring/Electrical	X	X		

**Table 10 (cont.): Shared Vendors Across Supply-Chain Nodes, Cannabis Supply Chain**

Greenhouse or Grow Lighting	X			
Metal enclosures and materials, boxes		X		
Labeling, printing, and packaging		X		X
Legal, accountants, environmental scientists, engineers	X	X	X	X
Testing labs, including track and trace			X	
Marketing agencies, especially for retailers		X		X
Non-profit advocacy (Cannabis Alliances, Growers Alliances, etc.)	X			
Trade organizations more broadly (chambers of commerce)		X	X	X
Talent Management: for all positions and placements	X	X	X	X
Insurance: land and vehicle to retail	X	X	X	X
Commercial real estate: industrial to office spaces	X	X	X	X
Contractors and builders	X	X	X	X
Nutrients and fertilizers	X			
Extraction solvents in manufacturing		X		
Cleaning supplies for industrial/manufacturing facilities		X		
Monitoring “seed-to-sale” data and equipment	X	X	X	X
Software for tracking	X	X	X	X
Accounting software for bookkeeping or inventory management	X	X	X	X
Point of sale equipment (POS systems, e-commerce platforms)	X	X	X	X

## 5. Economic Impact Analysis and Estimates

It is essential to see economic impacts as “value-added” incomes supporting jobs, including wages and taxes paid **within** a region for each supply-chain node. For example, retail sales of cannabis include the cost of packaged or raw cannabis products as purchased by the retailer before final sale to a consumer. Gains from local vendors to local retailers may include local cannabis farmers, manufacturing, distribution, and other costs of goods sold and operating expenses. However, those expenses may also be imported from other places. We cannot assume cannabis harvested in a county is necessarily sold to other supply chain nodes in the same county. When it is locally sourced, more of the economic impacts from cannabis remain in the local area.

The IMPLAN® model is somewhat restricted regarding industries for which economic impact estimates exist in agriculture. Cannabis farmers are not explicitly modeled. We use current practices in economic impact analyses to match IMPLAN® sectors (industries) to each cannabis supply chain node. A summary of the methodology we use to generate the economic impact estimates and broader conclusions from the available data are as follows:

- Cannabis Cultivation
  - Indoor/Mixed Light 2/Mixed Light 1 cultivation, nursery used the IMPLAN® model’s Industry Sector 6 (greenhouse or nursery) for any non-outdoor growing conditions;
  - Mixed Light 1 cultivation may be similar to outdoor cultivation depending on how light deprivation is executed by the farmer;
  - Outdoor cultivation is similar to crop farming, as harvests are by hand in many cases (especially when final commodities harvested have relatively high market prices by volume);



- We used the IMPLAN® model, Sector 10 (all other crop farming) for outdoor cannabis farming impacts;
- Cannabis Manufacturing
  - For regulated manufacturing, we used the IMPLAN® sector for medicinal or botanical products (sector 171) in terms of the vendors and subsequent employee impacts;
  - To remain conservative, we assume any unregulated cannabis is sold in a raw or manufactured form, though some medical marijuana farmers may also produce oils or edibles in small-batch formats and add value to raw cannabis that has vendor impacts;
- Cannabis Distribution/Testing
  - Due to distribution using secured storage and transport, we used IMPLAN® sector 421, Courier and Messenger Services, to model distribution impacts;
  - Testing is considered a scientific service purchased by distributors to remain compliant, a vendor to distributors;
- Cannabis Retail
  - We used IMPLAN® Sector 407, Health and Personal Care stores to model the impacts;
  - We used taxable sales data from CDTFA and DCC to determine revenues for those holding cannabis retail licenses.

To calculate the cannabis industry's direct impacts in these six counties, we used a blend of data from the 2022 "track and trace" dataset from DCC, official retail sales data from the California Department of Tax and Fee Administration (CDTFA), survey data as discussed above, and interviews with industry insiders concerning the industry's breadth in the unregulated market from farming to retail.<sup>24</sup>

The Appendix has more details by major supply-chain nodes for each of the six counties. The Appendix tables also provide algorithms for local policymakers and advocates to understand better gains from new cannabis businesses as well as the losses when cannabis businesses are unable to survive. Regional economic development can use these data and implied algorithms to show how cannabis connects to other industries when operating locally. We start with cultivation impacts.

## Cultivation Impacts

Like any other agricultural business, cannabis farmers pay workers, repair infrastructure, and operate in a farm setting. Their workers spend money on various services for each study-area county, paying rent or mortgages, using healthcare services, buying goods at retail stores, and eating at local restaurants. We estimate that in 2022, these six counties created \$1.058 billion in revenues from cannabis harvests. The economic impacts from unregulated cultivators are summarized separately from the regulated outcomes but follow the same logic as regulated harvests. The estimated revenue earned is the only dollar figure in the "direct" column of Tables 11 to 15.

The cultivation revenues come from a combination of data sources. We use estimates of revenues to estimate the economic impacts based on our use of IMPLAN® sectors to describe different license types

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<sup>24</sup> California Cannabis Tax Regulation 3700 provides definitions for many items in the METRC (track and trace system) and taxation terms. See <https://www.cdtfa.ca.gov/lawguides/vol3/ctr/ctr-reg3700.html> for more.

and packaged harvest volume for sale from METRC and DCC's data dashboard available in early 2024 (their reporting from METRC)<sup>25</sup>. County-level data were then aggregated for a total volume of packaged, salable commodity cannabis harvested by how cannabis was grown (indoor, outdoor, mixed light). Prices were not available for all transactions based on how METRC gathers data. We used survey data, METRC, and local experts from advocacy organizations and farmers to estimate prices per pound. The harvest volumes in terms of grams are shown above in Table 7.

These prices act as the basis for our final prices per the cultivator estimates, as the METRC data identifies more packaged products than flower from harvested cannabis. For the total quantity harvested and packaged according to the METRC data, we assumed salable leaf sold for approximately 29.7 percent of the flower price per pound/gram based on the tax structure of state-level cultivation taxes in California before July 2022. For salable, fresh cannabis plant, we assumed prices were 13.9 percent of the flower price based on the same tax structure. The growing method dictated the flower price, and thus, other cannabis materials were harvested and packaged for sale as commodities by the study area's cultivators.

**Table 11: Summary of Estimated Prices (\$) and Volumes (Grams) for 2022 Cannabis Harvest**

Growing Method	Weighted-Average Price per Pound/Gram*	Volume in Pounds	Total Regulated Estimated Revenues 2022	Total Unregulated Estimated Revenues 2022
Outdoor	\$205.70/\$0.45	926,470,732	\$420,145,300	\$126,043,900
Mixed Light Tier 1	\$292.06/\$0.64	362,009,961	\$233,089,900	\$69,927,300
Mixed Light Tier 2	\$588.21/\$1.30	41,147,145	\$53,357,900	\$16,007,800
Indoor	\$978.57/\$2.16	49,908,728	\$107,671,100	\$32,301,800
<b>Overall</b>	<b>\$267.73/\$0.59</b>	<b>1,379,536,565</b>	<b>\$814,264,200</b>	<b>\$244,280,800</b>

Sources: California Department of Cannabis Control (DCC) METRC Data, MJBiz, SSU Interviews and Surveys, Author's Calculations

\* The weighted average price takes into account flower, leaf, and "fresh cannabis plant" as salable commodities from harvests, and the price per pound/gram is a weighted average based on the estimated volume sold at different prices.

The estimates below suggest there are just over 6,245 workers in these six counties directly supported by cannabis farming, with another 3,010 workers in industries indirectly related to cannabis farming. The six counties had an official estimate of 315,811 workers in 2022. Humboldt, Mendocino, and Trinity will have more cannabis workers in aggregate based on traditional and licensed cannabis farming (see Appendix). For every two cannabis farming workers, another worker is supported by revenues generated in cannabis businesses to pay cannabis-industry workers and workers in various other industries. From our estimates and assumptions above, direct economic impacts across the study area counties include:

Direct Impact Categories	Indoor/Mixed Light 1/ Mixed Light 2	Outdoor	Totals
Estimated Revenue			
Regulated	\$394,122,500	\$420,141,700	\$814,264,200
Unregulated	\$118,238,300	\$126,042,500	\$244,280,800
Estimated Employment	3,609	2,636	6,245

Note: Workers likely work in regulated and unregulated settings if available in the study area counties.

<sup>25</sup> The DCC data dashboard is found at <https://www.cannabis.ca.gov/resources/data-dashboard/>.

The data in Tables 12 to 15 suggest that when these six counties create \$1,000,000 of new cultivation revenue, other industries generate another \$416,000 in revenue. One of the more elusive data points in terms of official data sources is the per-gram or per-pound sales price of dry, packaged harvested cannabis in raw form.

**Table 12: Value Added Income Impacts, Effects of 2022 Estimated Cannabis Cultivation Revenues, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Regional Totals
Cannabis Cultivation - Indoor, ML 1, ML 2	\$373,522,700	\$3,962,400	\$24,100	\$377,509,200	\$113,252,760	\$490,761,960
Cannabis Cultivation - Outdoor	\$436,085,600	\$622,400	\$46,900	\$436,754,900	\$131,026,470	\$567,781,370
Support activities for agriculture and forestry	\$0	\$28,562,400	\$1,336,100	\$29,898,500	\$7,916,300	\$37,814,800
Owner-occupied dwellings	\$0	\$6,635,500	\$24,147,600	\$30,783,100	\$7,456,000	\$38,239,100
Wholesale - Misc. nondurable goods merchant wholesalers	\$0	\$17,161,200	\$2,490,700	\$19,651,900	\$5,895,600	\$25,547,500
Other real estate	\$0	\$11,843,300	\$9,922,900	\$21,766,200	\$6,530,000	\$28,296,200
Hospitals	\$0	\$4,112,300	\$12,077,200	\$16,189,500	\$4,857,000	\$21,046,500
Other local government enterprises	\$0	\$2,944,600	\$6,327,800	\$9,272,400	\$2,782,200	\$12,054,600
Retail - Nonstore retailers	\$0	\$99,800	\$6,738,800	\$6,838,600	\$2,051,700	\$8,890,300
Full-service restaurants	\$0	\$671,100	\$6,132,100	\$6,803,200	\$2,041,000	\$8,844,200
Limited-service restaurants	\$0	\$141,900	\$6,508,400	\$6,650,300	\$1,995,300	\$8,645,600
Truck transportation	\$0	\$4,618,000	\$2,718,900	\$7,336,900	\$2,201,100	\$9,538,000
Banks and Credit Unions	\$0	\$1,072,800	\$3,809,500	\$4,882,300	\$1,464,800	\$6,347,100
Tenant-occupied housing	\$0	\$579,500	\$3,861,500	\$4,441,000	\$1,332,400	\$5,773,400
Offices of physicians	\$0	\$0	\$3,391,200	\$3,391,200	\$1,017,300	\$4,408,500
All Others	\$0	\$37,399,100	\$96,037,200	\$133,436,300	\$40,033,870	\$173,470,170
<b>Totals</b>	<b>\$809,608,300</b>	<b>\$120,426,300</b>	<b>\$185,570,900</b>	<b>\$1,115,605,500</b>	<b>\$331,853,800</b>	<b>\$1,447,459,300</b>

Table 13 has estimated contact and payroll employment levels for cannabis cultivation. Jobs in cannabis farming have not yet been tracked in official data from governmental sources. Neither the California Employment Development Department (California EDD) nor the federal Bureau of Labor Statistics (BLS) have NAICS codes or categories for cannabis businesses as of 2023.

**Table 13: Employment Impacts of Cannabis Retail, Cannabis Cultivation, Study Area Counties**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Regional Totals
Cannabis Cultivation – Indoor, ML 1, ML 2	2,730	46	0	2,776	833	3,609
Cannabis Cultivation - Outdoor	1,998	29	2	2,028	608	2,636
Support activities for agriculture and forestry	-	502	0	503	151	654
Other real estate	-	100	36	136	41	177
Full-service restaurants	-	9	86	95	29	124
Limited-service restaurants	-	2	78	79	24	103
Wholesale - Misc. nondurable goods merchant wholesalers	-	68	10	78	23	101
Individual and family services	-	-	77	77	23	100
Hospitals	-	-	76	76	23	99
Retail - Food and beverage stores	-	1	42	43	13	56
All other food and drinking places	-	2	39	41	12	53
Religious organizations	-	-	37	37	11	48
Truck transportation	-	21	12	33	10	43
Other local government enterprises	-	12	19	32	9	41
Automotive repair and maintenance	-	3	25	28	8	36
All Others	-	204	853	1,057	317	1,374
<b>Totals</b>	<b>4,728</b>	<b>1,001</b>	<b>1,391</b>	<b>7,120</b>	<b>2,135</b>	<b>9,255</b>

Table 14 provides estimated wages paid to contract and payroll workers in cannabis throughout the six study-area counties. The total wage estimate is approximately \$544.46 million. The six counties across all industries have wages paid of \$19.7 billion in 2022. Neither the count of supported contract or payroll jobs nor the wages paid to workers in cannabis jobs are directly counted in official labor-market data for these counties as of 2023. However, these wages – especially the cannabis wages – augment the tax base for these study-area counties. These data suggest an average wage in cannabis farming of approximately \$68,100 study-area-wide and almost \$59,900 regionally for those industries.

Table 15 is a mix of state and local taxes paid for cannabis cultivation activities. Regarding value added to the study-area counties, cannabis cultivation is where these counties have competitive advantages. In manufacturing, distribution, and retail, those activities will add value to raw and packaged cannabis commodities. Still, they are likely sourcing cannabis from all over the state versus these counties alone. For 2022, only one-half of the year had state-level cultivation taxes. As discussed, IRS Section 280E augments the federal taxes due from cannabis businesses versus other industries, as cannabis businesses have limits on deductible business expenses. The federal and state income estimates assume cannabis farmers that are regulated or unregulated have an incentive to pay applicable taxes to avoid criminal prosecution. In the study-area counties, not including the cultivation tax, \$1,000,000 of cannabis farming revenue, approximately \$322,000 of state and local tax revenues (32.2% of each \$1 of cannabis farming revenue, both regulated and unregulated farming).

**Table 14: Wages and Salaries Paid, Effects of 2022 Cannabis Cultivation, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Regional Total
Cannabis Cultivation - Indoor, ML 1, ML 2	\$195,051,800	\$1,835,700	\$13,400	\$196,900,900	59,075,900	\$255,976,800
Cannabis Cultivation - Outdoor	\$130,208,400	\$149,800	\$14,300	\$130,372,500	39,080,300	\$169,452,800
Support activities for agriculture and forestry	\$-	\$22,414,100	\$19,300	\$22,433,400	6,741,200	\$29,174,600
Hospitals	\$-	\$-	\$8,687,500	\$8,687,500	2,621,000	\$11,308,500
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$3,876,700	\$542,800	\$4,419,500	1,346,300	\$5,765,800
Other local government enterprises	\$-	\$1,323,500	\$1,911,600	\$3,235,100	977,900	\$4,213,000
Offices of physicians	\$-	\$-	\$2,852,700	\$2,852,700	840,100	\$3,692,800
Full-service restaurants	\$-	\$277,600	\$2,461,000	\$2,738,600	813,800	\$3,552,400
Outpatient care centers	\$-	\$-	\$2,325,200	\$2,325,200	705,500	\$3,030,700
Limited-service restaurants	\$-	\$46,400	\$2,095,300	\$2,141,700	646,000	\$2,787,700
Religious organizations	\$-	\$-	\$1,930,800	\$1,930,800	565,100	\$2,495,900
Individual and family services	\$-	\$-	\$1,904,500	\$1,904,500	564,700	\$2,469,200
Retail - Food and beverage stores	\$-	\$46,700	\$1,794,700	\$1,841,400	556,300	\$2,397,700
Truck transportation	\$-	\$746,800	\$391,000	\$1,137,800	324,100	\$1,461,900
Other real estate	\$-	\$758,800	\$188,100	\$946,900	272,500	\$1,219,400
All Others	\$-	\$9,569,400	\$33,105,100	\$42,674,500	12,793,500	\$55,468,000
<b>Totals</b>	<b>\$325,260,200</b>	<b>\$41,045,500</b>	<b>\$60,237,300</b>	<b>\$426,543,000</b>	<b>127,924,200</b>	<b>\$554,467,200</b>

**Table 15: State and Local Tax Receipts, Effects of 2022 Cannabis Cultivation, 2022 Dollars, Study Area Counties**

Category	Regulated	Unregulated	Totals
Corporate Income Tax	\$11,759,200	\$3,527,800	\$15,287,000
Personal Income Tax	\$16,929,500	\$5,078,900	\$22,008,400
Sales Taxes*	\$16,560,500	\$4,968,200	\$21,528,700
Property Taxes	\$12,104,600	\$3,631,400	\$15,736,000
Social Insurance Tax: Employee	\$956,800	\$287,000	\$1,243,800
Social Insurance Tax: Employer	\$981,400	\$294,400	\$1,275,800
Cannabis Taxes**	\$30,901,800		\$30,901,800
Cannabis taxes CA imputed at 2022 Rates	\$153,385,500		\$153,385,500
Other Taxes and Fees	\$18,654,000	\$5,596,200	\$24,250,200
<b>State and Local Totals</b>	<b>\$262,233,300</b>	<b>\$23,383,900</b>	<b>\$285,617,200</b>
<b>Federal Totals***</b>	<b>\$110,362,000</b>	<b>\$33,108,600</b>	<b>\$143,470,600</b>

\* Sales Taxes here do not include sales taxes on cannabis products

\*\* Cannabis Taxes are estimated as the sum of state and local taxes on cannabis cultivation. For the state-level estimates, only one-half of the year is estimated due to the cultivation tax exemption that started on July 1, 2022.

\*\*\* We assume unregulated cannabis farmers have an incentive to pay federal income taxes to avoid tax evasion prosecution.

## Manufacturer Impacts

Our estimates treat cannabis manufacturing similarly to medicinal or botanical product manufacturing in terms of economic impact estimates. Such businesses acquire raw ingredients and transform them into packaged, branded products. Sales to distributors then move to retailers or are repackaged before retail. Product testing occurs through internal quality control at a manufacturer and is then officially tested for distribution-level compliance. Not all retail cannabis goes through a manufacturing process, and the revenue shown here is independent of where raw cannabis product is acquired or where the product's next stop may be.

Table 16 shows our estimates of revenues from our study area's manufacturers. Track and trace data provided products that licensed manufacturers shipped in the study-area counties; transactions that were direct to retail provided example pricing per gram. We show value-added incomes retained by cannabis manufacturers after paying for the cost of goods they produce and sell. The multiplier effect of value-added income – based on 2022 estimated relationships between manufacturing revenue and indirect and induced impacts in the IMPLAN® model – is that for every \$1 million of value added by a manufacturer in the study area counties, another \$262,000 of value is added by other industries across the six counties on average.

**Table 16: Value-Added Impacts, Effects of 2022 Estimated Cannabis Product Manufacturing Revenues, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Manufacturing	\$240,689,700	\$368,600	\$100	\$241,058,400
Owner-occupied dwellings	\$-	\$-	\$6,347,200	\$6,347,200
Cannabis Processor, Nursery, and Related Activities	\$-	\$5,602,700	\$64,800	\$5,667,500
Management of companies and enterprises	\$-	\$3,750,900	\$290,300	\$4,041,200
Insurance agencies, brokerages, and related activities	\$-	\$2,566,000	\$153,600	\$2,719,600
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$1,968,000	\$457,100	\$2,425,100
Banks and Credit Unions	\$-	\$1,141,900	\$678,000	\$1,819,900
Hospitals	\$-	\$-	\$1,775,700	\$1,775,700
Other real estate	\$-	\$965,200	\$777,300	\$1,742,500
Full-service restaurants	\$-	\$490,900	\$970,700	\$1,461,600
Radio and television broadcasting	\$-	\$1,329,200	\$102,800	\$1,432,000
Retail - Nonstore retailers	\$-	\$368,100	\$1,044,900	\$1,413,000
Tenant-occupied housing	\$-	\$-	\$1,123,000	\$1,123,000
Truck transportation	\$-	\$842,800	\$178,500	\$1,021,300
Electric power transmission and distribution	\$-	\$772,500	\$160,800	\$933,300
All Others	\$-	\$16,519,000	\$22,067,000	\$38,586,000
<b>Totals</b>	<b>\$240,689,700</b>	<b>\$36,685,800</b>	<b>\$36,191,800</b>	<b>\$313,567,300</b>

Because of a lack of local supply-chain integration, local relationships help reduce “leakages” or losses of value-added incomes to other places. Locally-grown cannabis that becomes locally-manufactured products captures more local-area incomes, supports more workers, and generates more local tax benefits

than Humboldt-cultivated flower shipped to Los Angeles. As of December 2022, our team estimated there were 94 licensed manufacturers in four of the six area counties. Trinity County did not have licensed manufacturers as of December 2022 (or in December 2023, the time of this writing). It is important to note that some cultivators produce their own manufactured products due generally to generational entrepreneurship in medical marijuana farming and products.

We are not counting unlicensed manufacturing. Such an exclusion makes these estimates more conservative but should be noted as another reason to support unregulated conversion and locally-grown cannabis becoming locally sourced cannabis product manufacturing inputs. Table 17 shows estimated workers supported by cannabis manufacturing in these six counties based on the value-added incomes shown in Table 16.

**Table 17: Employment Impacts of Cannabis Retail, Cannabis Product Manufacturing, Study Area Counties**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis Manufacturing	760.3	1.2	-	761.5
Full-service restaurants	-	10.3	20.4	30.7
Management of companies and enterprises	-	26.2	2.0	28.2
Insurance agencies, brokerages, and related activities	-	24.2	1.5	25.7
Cannabis Processor, Nursery, and Related Activities	-	21.9	0.2	22.1
Limited-service restaurants	-	2.7	16.2	18.9
Individual and family services	-	-	17.3	17.3
Hospitals	-	-	16.0	16.0
Wholesale - Misc. nondurable goods merchant wholesalers	-	9.4	2.1	11.5
Employment services	-	7.1	3.8	10.9
Retail - Food and beverage stores	-	0.1	10.2	10.3
All other food and drinking places	-	1.5	8.8	10.3
Services to buildings	-	8.2	1.7	9.9
Other local government enterprises	-	4.4	5.5	9.9
Religious organizations	-	-	8.2	8.2
All Others	-	156.1	230.3	386.4
<b>Totals</b>	<b>760.3</b>	<b>273.3</b>	<b>344.2</b>	<b>1,377.8</b>

Average wages in manufacturing were estimated to be \$65,580 for jobs affected by cannabis manufacturing across the study-area counties. For every ten jobs in cannabis manufacturing, another 6.4 jobs are supported otherwise in these six counties. The number 6.4 should be read as an estimated six (6) full-time workers and one part-time worker at 16 hours (0.4) out of 40 hours a week. Table 18 provides those estimates.

Cannabis-specific taxes shown in Table 19 are local taxes on gross receipts. Cultivation taxes have historically been part of the cost of goods sold for manufacturers (until the 2022 change of the cultivation tax) as farmers pass on that tax burden through wholesale (freight-on-board or FOB) pricing.

**Table 18: Wages and Salaries Paid, Effects of 2022 Cannabis Product Manufacturing, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Manufacturing	\$69,893,300	\$107,000	\$-	\$70,000,300
Management of companies and enterprises	\$-	\$2,642,400	\$204,400	\$2,846,800
Insurance agencies and related activities	\$-	\$1,925,200	\$115,200	\$2,040,400
Cannabis Processor, Nursery, and Related Activities	\$-	\$1,906,200	\$22,000	\$1,928,200
Hospitals	\$-	\$-	\$1,480,400	\$1,480,400
Full-service restaurants	\$-	\$277,000	\$547,900	\$824,900
Wholesale - Misc. nondurable goods wholesalers	\$-	\$609,600	\$141,600	\$751,200
Other local government enterprises	\$-	\$328,000	\$414,000	\$742,000
Offices of physicians	\$-	\$-	\$639,000	\$639,000
Banks and Credit Unions	\$-	\$341,600	\$202,900	\$544,500
Outpatient care centers	\$-	\$-	\$544,100	\$544,100
Employment services	\$-	\$330,400	\$177,900	\$508,300
Postal service	\$-	\$400,100	\$83,800	\$483,900
Limited-service restaurants	\$-	\$63,700	\$383,100	\$446,800
Truck transportation	\$-	\$364,200	\$77,100	\$441,300
All Others	\$-	\$7,481,600	\$10,244,700	\$17,726,300
<b>Totals</b>	<b>\$69,893,300</b>	<b>\$16,777,000</b>	<b>\$15,278,100</b>	<b>\$101,948,400</b>

**Table 19: State and Local Tax Receipts, Effects of 2022 Cannabis Product Manufacturing, 2022 Dollars, Study Area Counties**

Category	Amount
Corporate Income Tax	\$9,183,800
Personal Income Tax	\$8,618,800
Sales Taxes	\$5,111,200
Property Taxes	\$2,312,900
Social Insurance Tax: Employee	\$3,123,200
Social Insurance Tax: Employer	\$2,667,800
Cannabis Taxes	\$7,349,700
Other Taxes and Fees	\$516,300
<b>State and Local Totals</b>	<b>\$38,883,700</b>
<b>Federal Totals</b>	<b>\$31,991,600</b>

## Distribution Impacts

There were 261 distribution licenses in the study-area counties in December 2022. Cultivators or manufacturers hold some licenses to link products to retailers. From an economic impact standpoint, distribution usually links wholesale and retail markets regarding supply-chain logistics. Distributors move products by truck, van, train, ship, or plane as needed for the product. In the case of cannabis, this could be armed, secure transport or movement from one facility to another; in some cases, it will simply be a non-descript vehicle driving to a retailer. Table 20 provides value-added incomes for distributors in these six counties, the income retained after costs of goods sold. Distributors that were transport only are not counted here and are part of the indirect impacts of cultivators, manufacturers and distributors otherwise.



**Table 20: Value-Added Impacts, Effects of 2022 Estimated Cannabis Product Distribution Revenues, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	\$15,092,200	\$92,000	\$11,500	\$15,195,700
Owner-occupied dwellings	\$-	\$-	\$551,700	\$551,700
Wholesale - Petroleum and petroleum products	\$-	\$138,900	\$29,000	\$167,900
Support activities for transportation (Security)	\$-	\$157,000	\$4,200	\$161,200
Employment services	\$-	\$130,600	\$26,100	\$156,700
Hospitals	\$-	\$-	\$153,300	\$153,300
Other real estate	\$-	\$70,200	\$67,600	\$137,800
Other local government enterprises	\$-	\$89,800	\$33,600	\$123,400
Retail - Nonstore retailers	\$-	\$22,400	\$91,600	\$114,000
Tenant-occupied housing	\$-	\$-	\$97,400	\$97,400
All other food and drinking places	\$-	\$61,200	\$33,000	\$94,200
Full-service restaurants	\$-	\$5,300	\$84,000	\$89,300
Banks and Credit Unions	\$-	\$20,600	\$63,600	\$84,200
Management of companies and enterprises	\$-	\$52,400	\$25,300	\$77,700
Limited-service restaurants	\$-	\$1,500	\$62,800	\$64,300
All Others	\$-	\$409,600	\$1,072,100	\$1,481,700
<b>Totals</b>	<b>\$15,092,200</b>	<b>\$1,251,500</b>	<b>\$2,406,800</b>	<b>\$18,750,500</b>

Wages and jobs based on cannabis distribution include “transportation services” such as van rental, vendors that provide trucking or contract transport, and storage and security services for cannabis to move from one licensed facility to another. We are not counting intermediaries in unregulated markets; we assume the economic impacts from these workers are limited in scope and hard to measure in terms of other vendors and employees. Tables 21 and 22 provide estimates of jobs and wages. Table 23 shows tax estimates.

**Table 21: Employment Impacts of Cannabis Retail, Cannabis Product Distribution, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	314.1	1.9	0.2	316.2
Employment services	0.0	1.9	0.4	2.3
Support activities for transportation (Security)	0.0	1.9	0.1	2.0
All other food and drinking places	0.0	1.1	0.6	1.7
Full-service restaurants	0.0	0.1	1.4	1.5
Other real estate	0.0	0.7	0.7	1.4
Individual and family services	0.0	0.0	1.3	1.3
Other local government enterprises	0.0	0.9	0.3	1.2
Limited-service restaurants	0.0	0.0	1.1	1.1
Hospitals	0.0	0.0	1.0	1.0
Retail - Food and beverage stores	0.0	0.0	0.7	0.7
Retail - Nonstore retailers	0.0	0.1	0.5	0.6
Religious organizations	0.0	0.0	0.5	0.5
Offices of physicians	0.0	0.0	0.5	0.5
Automotive repair and maintenance	0.0	0.0	0.5	0.5
All Others	0	3.6	12.8	16.4
<b>Totals</b>	<b>314.1</b>	<b>12.2</b>	<b>22.6</b>	<b>348.9</b>

**Table 22: Wages and Salaries Paid, Effects of 2022 Cannabis Product Distribution, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	\$6,634,900	\$40,400	\$5,100	\$6,680,400
Other local government enterprises	\$-	\$96,400	\$36,100	\$132,500
Hospitals	\$-	\$-	\$128,900	\$128,900
Support activities for transportation (Security)	\$-	\$108,500	\$2,900	\$111,400
Employment services	\$-	\$78,000	\$15,600	\$93,600
All other food and drinking places	\$-	\$38,700	\$20,800	\$59,500
Offices of physicians	\$-	\$-	\$55,900	\$55,900
Management of companies and enterprises	\$-	\$37,300	\$18,000	\$55,300
Postal service	\$-	\$44,400	\$7,300	\$51,700
Full-service restaurants	\$-	\$3,000	\$47,800	\$50,800
Outpatient care centers	\$-	\$-	\$47,600	\$47,600
Limited-service restaurants	\$-	\$800	\$33,400	\$34,200
Individual and family services	\$-	\$-	\$32,600	\$32,600
Retail - Food and beverage stores	\$-	\$1,000	\$30,700	\$31,700
Religious organizations	\$-	\$-	\$30,300	\$30,300
All Others	\$-	\$161,300	\$461,600	\$622,900
<b>Totals</b>	<b>\$6,634,900</b>	<b>\$609,800</b>	<b>\$974,600</b>	<b>\$8,219,300</b>

**Table 23: State and Local Tax Receipts, Effects of 2022 Cannabis Product Distribution, 2022 Dollars, Study Area Counties**

Category	Amount
Corporate Income Tax	\$343,900
Personal Income Tax	\$329,700
Sales Taxes	\$343,700
Property Taxes	\$185,700
Social Insurance Tax: Employee	\$29,700
Social Insurance Tax: Employer	\$29,300
Cannabis Taxes	\$225,000
Other Taxes and Fees	\$55,700
<b>State and Local Totals</b>	<b>\$1,542,700</b>
<b>Federal Totals</b>	<b>\$2,424,400</b>

Note: our study adds the retail excise tax on cannabis to retail impacts even though distributors collect that tax as of October 2023.

## Retail Impacts

Tables 24 to 27 provide the economic impact estimates for cannabis retail in the study area. As with manufacturing and distribution, retail impacts start with the value-added or additional economic value retained in each county and region based on retail sales volumes. These estimates do not count the cost of purchased goods – including locally-grown or manufactured cannabis commodities and products – because the value added to each retail product from cultivator to distributor is accounted for in the tables above or outside the study area counties. What remains in Tables 24 to 27 are locally retained incomes for vendors and workers.

**Table 24: Value-Added Impacts, Effects of 2022 Retail Taxable Sales, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Retail	\$36,832,303	\$303	\$79,543	\$36,912,149
Other real estate		\$2,189,517	\$247,871	\$2,437,387
Owner-occupied dwellings			\$2,086,308	\$2,086,308
Hospitals			\$588,108	\$588,108
Employment services		\$384,611	\$89,415	\$474,026
Banks and Credit Unions		\$190,235	\$227,281	\$417,516
Management of companies and enterprises		\$310,097	\$90,048	\$400,145
Full-service restaurants		\$80,419	\$317,926	\$398,345
Tenant-occupied housing			\$378,359	\$378,359
Retail - Nonstore retailers		\$19,883	\$333,193	\$353,076
Offices of physicians			\$228,161	\$228,161
Other local government enterprises		\$115,837	\$99,483	\$215,320
Accounting, tax preparation, and payroll services		\$146,076	\$52,182	\$198,257
Electric power transmission and distribution		\$142,142	\$47,749	\$189,890
All Others	\$-	\$2,829,172	\$4,746,949	\$7,576,121
<b>Totals</b>	<b>\$36,832,303</b>	<b>\$6,653,055</b>	<b>\$10,001,147</b>	<b>\$53,486,505</b>

The direct impacts come from the taxable sales estimates per CDTFA data on regulated cannabis sales. The tax estimates are based on taxable sales and wages paid versus the value-added incomes, shown in Table 25; for example, sales taxes and the cannabis excise tax of 15 percent are based on gross receipts as the tax basis, not the value-added income. We **do not** augment sales or value-added incomes by 30 percent per our previous considerations of the unregulated market. We assume unregulated market sales lack significant infrastructure, compliance, and other costs similar to regulated sales; thus, the indirect and induced impacts are negligible.

**Table 25: Employment Impacts of Cannabis Retail, Number of Full-Time Equivalent Jobs, 2022 Dollars, Study Area Counties**

	Direct	Indirect	Induced	Totals
Cannabis Retail	487.7	0.0	1.1	488.8
Other real estate		22.6	2.5	25.1
Employment services		6.1	1.4	7.6
Full-service restaurants		1.4	5.6	7.0
Individual and family services			4.9	4.9
Limited-service restaurants		0.4	4.4	4.8
Hospitals			3.9	3.9
All other food and drinking places		1.3	2.4	3.7
Services to buildings		2.7	0.6	3.3
Couriers and messengers		2.2	0.9	3.1
Other local government enterprises		1.4	1.2	2.6
Retail - Food and beverage stores		0.0	2.6	2.6
Accounting, tax preparation, and payroll services		1.8	0.6	2.4
Management of companies and enterprises		1.7	0.5	2.2
Offices of physicians			1.4	1.4
All Others	0.0	27.7	53.7	81.3
<b>Totals</b>	<b>487.7</b>	<b>70.2</b>	<b>89.6</b>	<b>647.5</b>

We also do not know the location of unregulated retail sales versus those taxable based on a location with a seller's permit and tax returns to CDTFA. Table 27 includes the cannabis-specific excise duty of 15% of gross receipts from cannabis sales.

Retail sales in a county or city provide tax revenues and can be used to market local products when vertical integration exists. Given the long history of cannabis in these counties, the more exclusive items can be sold in local retail outlets and integrated regional supply chains to capture more value-added services from dirt to consumer, including tourism. While on-premise cannabis consumption businesses, such as lounges, do exist in some California counties (San Francisco as an example), a mature partnership between farmers, retailers, hotels, restaurants, and other tourism attractions has not been fully explored to date in these six counties and is an economic development opportunity.

**Table 26: Wages and Salaries Paid, Effects of 2022 Cannabis Product Retail, 2022 Dollars, Study Area Counties**

Industry	Direct	Indirect	Induced	Totals
Cannabis Retail	\$21,812,300	\$200	\$47,200	\$21,859,700
Other real estate	\$-	\$274,500	\$30,500	\$305,000
Employment services	\$-	\$231,600	\$53,500	\$285,100
Full-service restaurants	\$-	\$46,000	\$182,400	\$228,400
Individual and family services	\$-	\$-	\$124,100	\$124,100
Limited-service restaurants	\$-	\$10,700	\$129,600	\$140,300
Hospitals	\$-	\$-	\$494,600	\$494,600
All other food and drinking places	\$-	\$44,200	\$80,100	\$124,300
Services to buildings	\$-	\$80,400	\$17,400	\$97,800
Couriers and messengers	\$-	\$45,600	\$19,200	\$64,800
Other local government enterprises	\$-	\$150,900	\$122,300	\$273,200
Retail - Food and beverage stores	\$-	\$600	\$117,200	\$117,800
Accounting, tax preparation, and payroll services	\$-	\$77,400	\$26,800	\$104,200
Management of companies and enterprises	\$-	\$197,900	\$58,500	\$256,400
Offices of physicians	\$-	\$-	\$157,300	\$157,300
All Others	\$-	\$1,886,300	\$2,226,200	\$4,112,500
<b>Totals</b>	<b>\$21,812,300</b>	<b>\$3,046,300</b>	<b>\$3,886,900</b>	<b>\$28,745,500</b>

**Table 27: State and Local Tax Receipts, Effects of 2022 Cannabis Retail, 2022 Dollars, Study Area Counties**

Category	Amount
Corporate Income Tax	\$411,100
Personal Income Tax	\$1,352,300
Sales Taxes*	\$3,316,900
Property Taxes	\$2,620,100
Social Insurance Tax: Employee	\$79,300
Social Insurance Tax: Employer	\$81,500
Cannabis Excise Duty on Gross Receipts**	\$48,933,000
Other Taxes and Fees	\$683,900
<b>Total State and Local</b>	<b>\$57,478,100</b>
<b>Totals Federal Taxes</b>	<b>\$8,512,700</b>

\* Sales Taxes include local and state sales tax revenues from cannabis and additional sales tax revenues from the economic impacts of cannabis-based operations

\*\* Cannabis Taxes are estimated as the sum of state and local taxes based on taxable sales in these six counties.

## Algorithms, Lookback and Forecasts

Our results above and Appendix 2's tables allow this study's user to look at hypothetical or actual changes in the cannabis industry and estimate the potential economic impacts as scenarios. For example, new retail sales or new cultivation businesses coming to one of the study area counties can have their economic impacts estimated using this study's data. The results above consider revenues to create the economic effects. Expenditures may be somewhat better as estimates of contemporaneous impacts; this is true in industries where raw commodities are not sold and thus stored over time to be transformed into other products (raw milk to cheese, wine grapes into bottled wine) at a manufacturer. Payments to farmers may not come immediately after commodities are harvested in the same year versus the following calendar year.

When the Bureau of Labor Statistics ([BLS](#)) or California Employment Development Department ([California EDD](#)) include cannabis jobs into North American Industry Classification Systems (NAICS) codes and begin to track – hopefully backcast once official, historical data are available – the number of estimated workers can generate algorithms for a user to make more direct connections among supply-chain node operations and regional economic impacts. Appendix 2's data can be used by assuming a certain number of workers and subsequent economic impacts for each of our study area counties. For example, let's assume there.

### Algorithm Example: 2023 Data and 2022 Economic Impact Results

Table 28 provides a way to use Appendix 2's tables and changes in a specific county to estimate the economic impacts of change. In this example, we assume 100 more people are working in Humboldt County in cultivation. Table A.4 has the following data that helps summarize the gains from these ten new cannabis workers:

Category	Humboldt
Business Revenue for County Employers (\$)	\$1,551,200
Jobs Supported in County (Workers)	13.7
State and Local Taxes (\$)	\$288,700

The ratios based on employment can be used to estimate business revenues for cultivators. For every 100 workers:

- Business revenues =  $100/13.7 \times \$1,551,200 = \text{\$11,322,628}$  supported by the new workers; and
- State and local taxes =  $\text{\$11,322,628}/\$1,551,200 \times \$288,700 = \$2,107,300 - \$991,700$  (the state-level cannabis tax revenues no longer in play as of July 1, 2022) = **\\$1,115,600**.

Suppose raw cannabis prices have increased by ten percent on average for all salable, packaged cannabis sold by cultivators (wholesale prices) since 2022 as a base year. In that case, the user of this algorithm can increase the calculations above by 10 percent as an approximation of how the increase in price affects the revenues. We assume the output per worker and the quantity produced per new worker remain constant, and the main change in the assumptions would be rising prices. If sales taxes, property taxes, transient occupancy taxes, or state income tax rates changed, as examples, similar changes to state and local taxes may be needed.

Using Tables A.8 to A.10, the user can augment the industry-specific effects proportionately across the business revenues, jobs, and tax revenues based on the cannabis cultivation revenue at \$11,322,628. Using the final columns in each table, the total changes by industry can be estimated by using the same percentage effect of cannabis revenue (for Humboldt, the sum of the first two rows in the “Totals” column) based on the estimated cultivation revenue. The same can be done for jobs and then again for state and local taxes using the total state and local taxes row entry in Table A.10 as the basis for the other line-item taxes above. Table 28 provides those estimates as an example.

**Table 28: Economic Impacts Algorithm, 100 New Workers in Humboldt County, Cultivation**

Effect from 100 workers	\$11,322,628		100		\$1,115,600
Industry	Incomes	Industry	Jobs	Tax Type	Amount
Cannabis Cultivation – Indoor, ML 1, ML 2	\$6,627,700	Cannabis Cultivation – Indoor, ML 1, ML 2	72.7	Corporate Income Tax	\$53,400
Cannabis Cultivation - Outdoor	\$4,695,000	Cannabis Cultivation - Outdoor	27.3	Personal Income Tax	\$243,000
Owner-occupied dwellings	\$650,900	Support activities for agriculture and forestry	2.3	Sales Taxes*	\$238,800
Wholesale - Misc. nondurable goods merchant wholesalers	\$451,100	Full-service restaurants	2.1	Property Taxes	\$127,400
Support activities for agriculture and forestry	\$392,600	Limited-service restaurants	1.8	Social Insurance Tax: Employee	\$12,400
Other real estate	\$333,500	Other real estate	1.8	Social Insurance Tax: Employer	\$12,700
Hospitals	\$313,100	Individual and family services	1.7	Local Cannabis Taxes	\$397,700
Other local government enterprises	\$198,900	Hospitals	1.6	Cannabis taxes CA imputed at 2022 Rates	\$0
Truck transportation	\$187,800	Wholesale - Misc. nondurable goods merchant wholesalers	1.3	Other Taxes and Fees	\$30,200
Retail - Nonstore retailers	\$171,800	Truck transportation	1.2	<b>State and Local Totals</b>	<b>\$1,115,600</b>
Limited-service restaurants	\$166,900	All other food and drinking places	1.0		
Full-service restaurants	\$165,600	Religious organizations	1.0		
Banks and Credit Unions	\$145,100	Retail - Food and beverage stores	0.9		
Offices of physicians	\$107,800	Automotive repair and maintenance	0.7		
Tenant-occupied housing	\$100,100	Other local government enterprises	0.7		
All Others	\$2,856,000	All Others	21.2		
<b>Totals</b>	<b>\$17,563,900</b>	<b>Totals</b>	<b>139.3</b>		

In addition to the operational impacts of cannabis operations in these six counties, there are pre-operation impacts of preparing to farm, manufacture, distribute, or dispense/sell cannabis products in regulated markets. Below, we provide ways for users of this report to quickly generate estimates of the economic impacts of new and expanding businesses regarding infrastructure investment, tenant improvements, or equipment upgrades. Our examples below are for mixed-light cultivation and retail.

## Economic Impacts of Capital Expenditures for Cultivators and Retailers

Capital expenditures expand current productive capacity or create space for new businesses. This section considers additional economic impacts based on new and growing businesses in cannabis cultivation or retail. The conversion from unregulated to regulated businesses may not need additional production infrastructure. There may be more demand for professional services versus unregulated businesses (legal, accounting, and payroll services, for example). The reader should consider these as spending from (1) bare dirt to build a mixed-light grow facility, as these six counties have some statewide history and license majority in 2023 in that type of cultivation, or (2) a vacant retail space in a strip mall converted into cannabis retail by tenant improvements of the retail business owner while leasing the space.

### **Cultivation Capital Expenditure: Mixed Light**

We will use an example of spending \$10,000,000 on building a new mixed-light facility. If spending is \$5,000,000, taking one-half of the results below is a reasonable estimate. After speaking with new farmers, the following cost categories are part of planning a new cannabis farm. New farms should construct proforma financial statements for planning:

- Property Costs (assuming the land is not owned previously);
- Local licensing fees, city or county (all based on current fee structure);
- Design and Engineering: designing and preparing the space;
- Construction and Equipment/Infrastructure placement;
- State license fees;
- Additional services and contingencies.

New or expanding outdoor or mixed-light farms should consider similar steps in planning. When new cultivation businesses come to an area, there will be economic impacts from these capital expenditures. Table 29 looks at the economic impacts in the aggregate of \$10,000,000 of new investment in cannabis cultivation to begin new operations. New farm infrastructure coming to these six counties begins the economic impacts for the local economy before annual operations as the growth of regulated cannabis farming takes place.

It is important to understand the complexities of new cannabis farms, specifically outdoor farming, issues that create costs and potentially reduce a new farm's size. Expanding outdoor cultivation has large environmental compliance requirements and costs, including environmental studies, environmental review, potential mitigations, local hearings, and other time extensions and work just to get permitted.

When new or expanding businesses build more infrastructure, jobs are supported, other businesses receive incomes, and more taxes are paid locally. Once construction ends, these gains do also, except for augmented property taxes from capital expenditures that remain as the increased assessed value of improved properties. These gains are not subject to IRS Section 280E at the federal level. Notice that each of the study-area counties is slightly different from the others in terms of local impacts. This is due to different mixes of local vendors and workers supporting new construction efforts.

**Table 29: Economic Impacts, \$10,000,000 of New Cannabis Farms, Mixed Light**

County	Employment	Business Revenues	State/Local Taxes	Federal Taxes
Del Norte	97.6	\$12,728,300	\$522,100	\$999,200
Humboldt	100.3	\$14,686,600	\$742,600	\$1,421,700
Lake	95.9	\$13,322,700	\$642,100	\$1,252,600
Mendocino	100.3	\$14,557,500	\$745,800	\$1,407,000
Sonoma	91.5	\$15,584,300	\$822,100	\$1,525,400
Trinity	94.2	\$12,156,500	\$479,700	\$1,012,100

### Retail Capital Expenditure

Cannabis retail may start with capital investment in new construction or tenant improvements to an existing space. Like farm construction, retail construction is a pre-operations economic change in counties that welcome new retailers before operational impacts begin. We include Trinity County in Table 30 to estimate gains if retailers return to Trinity County. Like Table 29, a ratio of \$10 million can be used to change these tables as needed.

Table 30 summarizes the economic impacts of \$10,000,000 invested in new retail spaces. New retail can offer visitors to the area with local cannabis products to help broader marketing efforts. Such retail availability is essential to broader, regional economic development efforts linking local, generational cannabis farming, similar to wine-focused areas in coastal, northern California (including most of the study-area counties). The economic impacts shown in Tables 29 and 30 are pre-operations, **augmenting** the economic impacts of cannabis businesses in these six counties.

**Table 30: Economic Impacts, \$10,000,000 of New Cannabis Retail, Existing Space Renovated and Prepared for Cannabis Retail**

County	Employment	Business Revenues	State/Local Taxes	Federal Taxes
Del Norte	62.5	\$ 13,252,900	\$ 624,100	\$ 580,300
Humboldt	68.1	\$ 14,950,500	\$ 807,100	\$ 946,100
Lake	79.8	\$ 13,498,900	\$ 650,000	\$ 1,039,400
Mendocino	69.1	\$ 15,052,900	\$ 833,700	\$ 940,900
Sonoma	62.9	\$ 15,714,500	\$ 873,700	\$ 1,016,800
Trinity	62.1	\$ 12,990,700	\$ 587,900	\$ 615,100



## 6. Conclusions and Policy Recommendations

This study's main focus was estimating the economic impacts of the regulated and unregulated cannabis business in six counties in northern California: Del Norte, Humboldt, Lake, Mendocino, Sonoma, and Trinity. Our results utilized both officially published data, survey, and interview data to determine the direct economic impacts of the cannabis industry's main supply-chain nodes. We chose 2022 based on our study's timing of survey results, interviews, and official data sources, which is considered the most robust since 2018. This study provides brief economic profiles of each of the six counties to provide context for the most likely industries to receive gains from new and growing cannabis businesses regarding sales revenues.

When a cannabis business creates revenue and pays its vendors and employees, these businesses trigger a "multiplier effect" on the local economy. Spending that begins with cannabis businesses spreads throughout the local economy. This is also true for any capital expenditure, primarily construction efforts, that prepare for a new business to start or a current business to expand. Jobs are supported across each county by these revenues. Governments at all levels also receive revenue due to cannabis businesses in these six counties, regardless of local tax initiatives specific to cannabis. The continued effects of federal regulations on taxable income may reduce the ability of regional cannabis firms to remain in business due to higher net costs than other businesses that face similar local costs and labor markets.

The estimated economic effects of cannabis farmers are not new or mysterious; such cannabis businesses have been providing economic impacts in these counties for generations. As these businesses purchase services and products from other businesses to manufacture products from raw commodities, distribute cannabis, and offer retail products, this industry's economic effects expand throughout the six-county region and statewide.

Cultivation is the primary type of cannabis business in the study-area counties. We assumed unregulated farming is 30 percent above the regulated volume of cannabis in grams and augments the total harvested in these counties and the economic support cannabis farmers provide. Unregulated businesses were assumed to pay all but cannabis-specific taxes and fees.

Table 31 provides a summary of the economic impacts estimated above. Manufacturing, distribution, and retail add value to raw cannabis throughout these counties.

**Table 31: Summary of Estimated Economic Impacts, 2022 Cannabis Industry Operations, Study-Area Counties**  
**Number of Workers, Thousands of 2022 Dollars (for incomes and wages)**

	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area
<b>Cultivation</b>							
Direct Impacts (Revenues)	\$2,167	\$351,483	\$97,415	\$313,975	\$258,294	\$35,211	\$1,058,545
Value Added Income (\$)	\$2,625	\$545,224	\$121,771	\$397,234	\$337,392	\$51,049	\$1,457,459
Jobs Supported in County (Full-Time Equivalent Workers)	11	4,812	1,325	1,594	845	668	9,255
State and Local Taxes (\$)	\$374	\$101,468	\$28,567	\$80,294	\$67,093	\$7,821	\$285,617
<b>Manufacturing</b>							
Direct Impacts (Value Added)	\$2,588	\$83,193	\$15,095	\$51,592	\$86,434	\$2,156	\$241,058
Value Added Income (\$)	\$3,263	\$109,661	\$19,032	\$60,252	\$118,642	\$2,719	\$313,569
Jobs Supported in County (Full-Time Equivalent Workers)	10	553	57	170	580	8	1,378
State and Local Taxes (\$)	\$53	\$9,805	\$1,330	\$4,058	\$24,058	\$179	\$39,483
<b>Distribution</b>							
Direct Impacts (Value Added)	\$352	\$5,461	\$716	\$3,832	\$4,630	\$204	\$15,195
Value Added Income (\$)	\$413	\$6,819	\$828	\$4,560	\$5,907	\$223	\$18,750
Jobs Supported in County (Full-Time Equivalent Workers)	5	153	16	58	113	4	349
State and Local Taxes (\$)	\$41	\$552	\$70	\$521	\$318	\$41	\$1,543
<b>Retail</b>							
Retail Sales (Revenues)	\$3,706	\$35,889	\$7,662	\$22,567	\$108,328	\$1,000	\$179,152
Direct Impacts (Value Added)	\$778	\$7,263	\$1,528	\$4,626	\$22,527	\$190	\$36,912
Value Added Income (\$)	\$947	\$10,203	\$1,954	\$6,369	\$33,784	\$230	\$53,487
Jobs Supported in County (Full-Time Equivalent Workers)	12	133	27	81	391	4	648
State and Local Taxes (\$), Including Cannabis Specific	\$1,267	\$10,720	\$2,557	\$7,827	\$34,802	\$305	\$57,478

Notes: These estimates include unregulated; detailed tables in the report show the estimated impacts of unregulated cannabis activity. Trinity's retail outcomes are based on a hypothetical \$1 million in retail revenue.

## Industry Challenges and Opportunities

Our interviews and survey work with this industry provided qualitative insights on how policy changes could help current and new cannabis businesses, especially smaller businesses and those still conducting unregulated operations.

**Provide incentives and guidance for conversion:** Tax and regulatory environments must balance temperance conditions and support for businesses to keep local businesses viable. Local policy can help shape and augment such choices.

**Retaining and enhancing local/regional vertical integration:** By vertically integrating, industries connect local and regional raw materials sources with local processors/manufacturing, distribution, and retail. This may extend to tourism opportunities, especially for licensed cannabis events, farm tours, and access to local products at the source. More value-added income is retained regionally by encouraging supply-chain partner businesses to locate in these counties and purchase locally harvested commodities. Business entry could be stagnant due to inflexible land-use regulations, local politics, and changing economic environments.

**Competition with other regulated cannabis businesses:** Products such as hemp, synthetics, traditional-market cannabis (unregulated), and tribal-land cannabis markets that lie outside state regulations are examples. A wave of new products and synthetics should be expected, especially if regulations allow such products and barriers to entry are low. The cannabis industry in these six counties has an opportunity to become distinct based on history and entrepreneurship in medicinal markets.

**Medical to Adult Use:** These six counties, like other counties in California and in other states, have generations of cultivators who got into cannabis farming to help people through medicinal marijuana entrepreneurship (clones, products, and other innovations that became salable medicinal products). The opening of the recreational adult-use market increased cannabis availability generally. Former clients of medical marijuana businesses can now buy similar products where cannabis retail stores exist. This created a medical marijuana substitute and added competition, including for manufactured goods for medical use versus recreational. Our interviews suggested this niche is being lost in the study-area counties.

**Financing Cannabis Businesses: Start-Up to Mature Industry:** A lack of credit market and merchant-services support means suppression of potential growth and financing choices (beyond the use of personal or corporate savings or selling ownership/equity market financing to expand or start a business) and smaller economic impacts from this industry. Depository institutions (banks, credit unions, savings banks) cannot provide banking services as other industries provide by overtly legal means. Some depository institutions have experimented with marketing to cannabis businesses directly and indirectly. Multiple iterations of a “SAFE Banking Act” to provide some cannabis businesses with more banking options have federally failed to date (as of December 2023). The U.S. Financial Crimes Enforcement Network (FinCEN) reported approximately 700 financial institutions serving cannabis companies in 2023. Cannabis companies also do not have legal access to federal bankruptcy protection (Chapters 11 or 13).<sup>26</sup>

**Tourism and Broader Economic Partnerships:** Sonoma, Mendocino, and Lake counties have mature tourism industries specific to visitors for wineries, including events on winery grounds and at event and conference centers throughout the region. Wineries have strategic alliances with local restaurateurs and hotels to integrate tourism spending and generate regional gains. Cannabis businesses should consider how broader alliances and marketing can drive more local sales of local products and how regional events that bring people from outside to the study-area counties are extensions of marketing efforts.

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<sup>26</sup> <https://oregoneconomicanalysis.com/2023/04/20/oregons-marijuana-outlook/>

In short, public policy should focus on providing incentives for the continued conversion of current unregulated businesses, enhancing compliance assistance, and supporting business planning and support.

## Recommendations

While this study is focused on providing data estimates and considering the economic footprint of cannabis from dirt to consumer, public policy issues and considerations abound in an industry that is mature in its unregulated form with a relatively new regulated market running parallel. Some of the recommendations below are meant to consider how to help conversions from unregulated to regulated businesses and also how to provide an environment for current, regulated firms to have a better chance of long-term success and thus broader, regional economic impacts on workers, other businesses and the study area communities. These recommendations originate from our team's observations, surveys, interviews, and communications with the study area businesses in 2022 and 2023.

- Public policy needs to focus on incentives for the conversion of current unregulated businesses through funded actions such as:
  - Provide tax holidays and exemptions, especially for smaller, generational farmers (equity focus);
  - Provide entrepreneurship training and support for business conversions;
  - Re-examine local zoning and land-use rules for each sector of cannabis activity;
  - Reduced compliance costs and processes;
- Track cannabis harvests as any other agricultural commodity, also tracking cannabis labor-market activity, harvest prices and volumes, and estimate “farm-gate” outcomes through a statewide crop report with county-level metrics rolled up to state totals (like the crush report for wine grapes);
- Work with federally-elected officials to reduce barriers to merchant services and credit market availability, with or without re-schedule or de-schedule changes for cannabis to provide a more competitive balance within the cannabis industry and among its competitors;
  - Such change would need to be national in scope;
  - Penalties for using credit markets for any unregulated activity should be significant and broad in scope to increase incentives to convert to regulated market activity;
  - Cannabis has few credit market options as of December 2023 (the time of this writing), a constraint that interferes with revenue flowing from retail to distribution to manufacturing to farmers without well-functioning credit markets;
  - The availability of escrow accounts that were enforceable for invoicing delivery of harvested and manufactured products, for example, would enhance economic impacts in these six counties by reducing uncertainty in the timing of cash flows from operations.

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## Data:

BDS Analytics provided data that helped complete the estimation of market size. See <https://bdsanalytics.com/> for more.

Bureau of Economic Analysis (BEA) was the source of data on employment and gross regional product for the 2022 countywide descriptions in the text: [Regional Data](#)

California Employment Development Department (California EDD) was the source for industry comparison data and county-level summaries of employment: <https://labormarketinfo.edd.ca.gov/data/employment-by-industry.html>

DCC has a track-and-trace data dashboard as of early 2024: <https://www.cannabis.ca.gov/resources/data-dashboard/>

MJBiz Cannabis Yearbooks 2022 and 2023 provided a broad look at the national cannabis market where it is regulated, including pricing, supply-chain node considerations, and outlook for all states currently engaged in regulated cannabis markets. These data were purchased as part of the project expenses. See <https://mjbiz.com/> for more.

We used the IMPLAN model to estimate the economic impacts and other data as needed to provide perspective on the industry mix by county and the economic size of each county's market. IMPLAN is derived from the phrase "Impact analysis for PLANing." IMPLAN is an economic model that uses input-output tables for over 400 industries. Initially developed by the U.S. Forest Service, it is currently used by hundreds of universities, government agencies, corporations, and economic consulting firms researching to estimate regional and industry-specific economic impacts. **Direct effects** are changes in the industries associated directly with final demand. For example, in this study, cannabis revenue is the direct effect of all cannabis sold by cultivators. Direct jobs and wage (income) effects represent the employees hired by, or income derived directly from, the production and sale of cannabis or cannabis products – from dirt to consumers. **Indirect effects** are the changes in industry sectors that supply goods and services to industries directly affected by the changes in demand for cannabis or cannabis products. **Induced effects** are changes in economic activity resulting from household spending on income earned from direct or indirect sales. See more details at [www.implan.com](http://www.implan.com).

## 8. Appendices

This appendix details cannabis data regarding harvests, packaged products, estimated amounts distributed and sold at retail, and taxable sales. These data should give the user more perspective on the estimated level of transactions and economic activity as described in the main report.

### Appendix 1: Harvest Data

**Table A.1a: Estimated Harvest Volumes by Study-Area County and Statewide, Packaged Weight, 2022 Estimates in Thousands of Grams (kg), including Unregulated Estimates**

License Type	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Study Area	California
A-Medium Indoor	-	-	-	171	253	-	424	855,351
A-Medium Mixed-Light Tier 1	-	65,823	3,251	-	-	14	69,088	9,407
A-Medium Mixed-Light Tier 2	1,531	7,844	-	-	-	-	9,375	2,432
A-Medium Outdoor	-	124,484	17,745	3,620	46,238	-	192,087	2,089,693
A-Small Indoor	-	908	-	1,031	44,264	-	46,203	1,040,616
A-Small Mixed-Light Tier 1	-	71,962	256	124,580	196	16,670	213,664	5,077,913
A-Small Mixed-Light Tier 2	-	20,358	-	12,448	-	3,955	36,761	16,908
A-Small Outdoor	-	211,872	259,165	72,690	59,023	15,397	618,147	10,653,783
A-Specialty Cottage Indoor	-	-	-	487	12	-	499	1,036
A-Specialty Cottage Mixed-Light Tier 1	-	1,127	14	830	-	80	2,051	180
A-Specialty Cottage Mixed-Light Tier 2	-	194	14	783	-	11	1,002	75
A-Specialty Cottage Outdoor	-	22	8	386	-	66	482	1,167
A-Specialty Indoor	-	1,612	19	1,653	568	138	3,990	161,712
A-Specialty Mixed-Light Tier 1	-	13,814	4	4,930	-	455	19,203	2,513
A-Specialty Mixed-Light Tier 2	-	5,209	13	1,287	54	10	6,573	574
A-Specialty Outdoor	-	25,252	678	16,111	945	1,102	44,088	302,780
M-Medium Indoor	-	-	-	-	4,372	-	4,372	977,687
M-Medium Mixed-Light Tier 1	-	44,473	-	-	-	-	44,473	4,611
M-Medium Mixed-Light Tier 2	-	2,516	-	-	-	-	2,516	1,801
M-Medium Outdoor	-	19,012	9,653	-	75,462	-	104,127	569,492
M-Small Indoor	-	3,548	-	-	514	-	4,062	215,536
M-Small Mixed-Light Tier 1	-	18,093	-	90,200	-	669	108,962	30,667
M-Small Mixed-Light Tier 2	-	235	-	1,184	-	-	1,419	3,974
M-Small Outdoor	-	26,183	51,764	24,133	128,834	5,785	236,699	2,145,140
M-Specialty Cottage Indoor	-	-	-	39	-	-	39	331
M-Specialty Cottage Mixed-Light Tier 1	-	816	-	792	24	323	1,955	177
M-Specialty Cottage Mixed-Light Tier 2	-	213	-	260	-	-	473	32
M-Specialty Cottage Outdoor	-	-	-	471	-	-	471	982
M-Specialty Indoor	-	3,177	-	187	1,932	-	5,296	24,729
M-Specialty Mixed-Light Tier 1	-	3,211	-	2,490	-	107	5,808	711
M-Specialty Mixed-Light Tier 2	-	595	-	176	8	-	779	73
M-Specialty Outdoor	-	2,534	-	5,383	193	198	8,308	28,585
A-Nursery	-	9	-	282	-	-	291	12,301
M-Nursery	-	-	-	549	16	-	565	2,633
Cannabis - Microbusiness License	-	2,648	-	169	7,453	3,056	13,326	113,734
<b>Totals</b>	<b>1,531</b>	<b>677,744</b>	<b>342,584</b>	<b>367,322</b>	<b>370,361</b>	<b>48,036</b>	<b>1,807,578</b>	<b>24,349,336</b>

Source: Department of Cannabis Control, Track and Trace Data and Author's Calculations from Track and Trace Data



**Table A.1b: Harvest Volumes, Packaged Weight of Cannabis (Thousands of Grams, kg), California Counties, 2022, Including Unregulated Commodities**

	Flower	Fresh Cannabis Plant	Leaf	Total
Alameda	55,652	40,506	13,618	109,776
Calaveras	36,485	50,036	21,087	107,608
Colusa	5,362	1	3,654	9,017
Contra Costa	4,328	-	1,623	5,951
Del Norte	1,531	-	-	1,531
El Dorado	427	550	166	1,143
Fresno	10,743	383,178	213,064	606,985
Humboldt	237,532	297,826	142,386	677,744
Imperial	257	-	-	257
Inyo	2,038	2,719	6,993	11,750
Kern	2,923	1,495	1,025	5,443
Kings	-	27,758	8,889,213	8,916,971
Lake	92,421	228,816	21,346	342,583
Los Angeles	277,832	88,921	63,094	429,847
Mendocino	209,218	112,237	45,867	367,322
Merced	5,338	1,289	2,480	9,107
Mono	210	-	173	383
Monterey	2,027,775	2,299,771	5,363	4,332,909
Nevada	23,921	23,359	5,141	52,421
Orange	13,863	9	5,620	19,492
Riverside	131,089	214,089	24,403	369,581
Sacramento	88,499	264,204	45,771	398,474
San Benito	8,229	9,631	2,155	20,015
San Bernardino	149,709	45,801	45,369	240,879
San Diego	10,250	410	965	11,625
San Francisco	29,908	10,713	2,429	43,050
San Joaquin	36,631	-	1,343	37,974
San Luis Obispo	5,725	120,392	1,610	127,727
San Mateo	3,012	35,958	662	39,632
Santa Barbara	34,364	5,617,490	24,379	5,676,233
Santa Clara	4,486	33,881	283	38,650
Santa Cruz	17,188	387,042	5,298	409,528
Shasta	10,325	38,388	3,305	52,018
Siskiyou	593	-	145	738
Solano	5,253	2,892	1,493	9,638
Sonoma	113,186	246,880	10,295	370,361
Stanislaus	14,052	1,852	2,339	18,243
Trinity	22,574	14,877	10,585	48,036
Tulare	6,872	-	4,224	11,096
Ventura	241	304,545	44	304,830
Yolo	80,446	25,108	7,214	112,768
<b>CA</b>	<b>3,780,488</b>	<b>10,932,624</b>	<b>9,636,224</b>	<b>24,349,336</b>

Source: Department of Cannabis Control, Track and Trace Data and Author's Calculations from Track and Trace Data

Table A.2 provides the tax rates and assessment methods used as assumptions in Tables 15, 19, 23, and 27. All these rates are subject to change over time.

**Table A.2: Tax Assumptions by Supply Chain Node Used in Tax Revenue Estimations**

		Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	California
Cultivation								
	Outdoor*	\$1.00	\$1.00	\$0.25		\$0.75		
	Indoor*	\$3.00	\$3.00	\$0.25		\$12.00		
	Mixed Light*	\$3.00	\$2.00	\$0.25		\$3.00		
	General**				2.5%			
	Flower***						\$15.40	\$161.28
	Leaf***						\$4.60	\$48.00
	Plant***						\$2.20	\$22.56
Manufacturing								
	Gross Receipts	0%	0%	2.5%	0%	3.0%	0%	
Distribution								
	Gross Receipts	0%	0%	2.5%	0%	3.0%	0%	
Retail								
	Excise Tax							15%
	Local Excise Tax	6.0%	0%	4.0%	5.0%	2.0%	2.5%	
	Sales Tax	8.25%	8.75%	8.75%	8.785%	9.0%	7.25%	
Other	Per License				\$2,500			

\* Per Square Foot; \*\*Gross Receipts Percentage; \*\*\* Per Pound

Note: The cultivation tax in California for flower, leaf, and fresh cannabis plant ended on July 1, 2022 as of December 2023. Trinity County's cultivation tax is per pound and increases like a progressive tax based on pounds harvested.

**Table A.3: Taxable Cannabis Sales at Retail, Current Dollars 2019 Q1 to 2022 Q4,  
Study Area Counties and California Statewide**

Year	Quarter	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity	Statewide
2019	1	\$-	\$4,916,800	\$1,180,500	\$3,994,100	\$17,151,200	\$-	\$579,063,800
	2	\$-	\$6,806,000	\$1,899,200	\$5,120,300	\$20,022,000	\$-	\$682,027,400
	3	\$-	\$7,499,200	\$2,196,300	\$5,384,100	\$21,513,800	\$-	\$742,703,400
	4	\$-	\$7,033,600	\$2,053,200	\$5,069,700	\$20,285,900	\$91,100	\$799,246,300
	<b>Totals</b>	<b>\$-</b>	<b>\$26,255,600</b>	<b>\$7,329,200</b>	<b>\$19,568,200</b>	<b>\$78,972,900</b>	<b>\$91,100</b>	<b>\$2,803,040,900</b>
2020	1	\$-	\$6,853,200	\$1,798,400	\$5,077,600	\$21,658,100	\$-	\$877,037,900
	2	\$-	\$11,135,700	\$3,138,200	\$6,716,300	\$25,916,700	\$-	\$1,153,285,000
	3	\$-	\$10,486,200	\$3,210,800	\$7,666,400	\$28,205,300	\$136,500	\$1,343,466,900
	4	\$-	\$9,200,900	\$2,699,800	\$6,589,700	\$26,498,300	\$308,700	\$1,332,162,700
	<b>Totals</b>	<b>\$-</b>	<b>\$37,676,000</b>	<b>\$10,847,200</b>	<b>\$26,050,000</b>	<b>\$102,278,400</b>	<b>\$445,200</b>	<b>\$4,705,952,500</b>
2021	1	\$-	\$9,739,400	\$3,025,500	\$7,365,700	\$26,145,700	\$-	\$1,340,919,700
	2	\$-	\$18,840,500	\$2,761,700	\$9,251,300	\$29,628,400	\$-	\$1,565,577,000
	3	\$935,600	\$11,727,900	\$2,247,100	\$7,198,400	\$29,567,400	\$-	\$1,429,639,300
	4	\$786,200	\$10,739,200	\$1,784,400	\$6,237,600	\$26,892,500	\$54,400	\$1,445,801,000
	<b>Totals</b>	<b>\$1,721,800</b>	<b>\$51,047,000</b>	<b>\$9,818,700</b>	<b>\$30,053,000</b>	<b>\$112,234,000</b>	<b>\$54,400</b>	<b>\$5,781,937,000</b>
2022	1	\$811,800	\$8,314,700	\$1,826,500	\$5,695,100	\$25,085,100	\$-	\$1,328,165,100
	2	\$879,600	\$9,945,500	\$1,928,700	\$6,316,600	\$28,148,700	\$-	\$1,412,650,200
	3	\$1,047,500	\$9,259,200	\$1,893,600	\$5,460,000	\$27,359,500	\$-	\$1,297,789,500
	4	\$967,500	\$8,401,700	\$2,012,800	\$5,089,300	\$27,728,500	\$-	\$1,343,064,300
	<b>Totals</b>	<b>\$3,706,400</b>	<b>\$35,921,100</b>	<b>\$7,661,600</b>	<b>\$22,561,000</b>	<b>\$108,321,800</b>	<b>\$-</b>	<b>\$5,381,669,100</b>

Source: California Department of Tax and Fee Administration (CDTFA)

Note: Our estimates in the Appendix and algorithms add \$1,000,000 of retail sales to Trinity County for comparisons

## Appendix 2: Detailed Economic Impact Data

Each summary table in the main text contains various details about the industries affected and the estimated amount of business revenues, jobs supported, wages paid, and tax revenues generated. Appendix 2 provides details on the county and major supply chain nodes.

### Cultivation Algorithms

**Table A.4: Algorithm: For Every \$1,000,000 of cannabis cultivation revenue, Humboldt County creates:**

Category	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity
<b>Business Revenue for County Employers (\$)</b>	\$1,211,300	\$1,551,200	\$1,250,000	\$1,265,200	\$1,306,200	\$1,449,800
<b>Jobs Supported in County (Workers)</b>	5.3	13.7	13.6	5.1	3.3	19.0
<b>State and Local Taxes (\$)</b>	\$172,500	\$288,700	\$293,300	\$255,700	\$259,800	\$222,100

### Del Norte County: Cultivation

**Table A.5: Business Revenues Impact, Del Norte County, 2022 Estimated Cultivation Revenue, Current Dollars, Top 15 Industries in Del Norte County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals
Cannabis Cultivation	\$1,655,900	\$11,200	\$100	\$1,667,200	\$500,200	\$2,167,400
Owner-occupied dwellings	\$-	\$-	\$57,400	\$57,400	\$34,400	\$91,800
Other local government enterprises	\$-	\$13,200	\$16,400	\$29,600	\$9,200	\$38,800
Other real estate	\$-	\$19,600	\$5,800	\$25,400	\$7,900	\$33,300
Hospitals	\$-	\$-	\$19,200	\$19,200	\$6,000	\$25,200
Support activities for agriculture and forestry	\$-	\$15,500	\$-	\$15,500	\$4,800	\$20,300
Retail - Nonstore retailers	\$-	\$200	\$14,300	\$14,500	\$4,500	\$19,000
Limited-service restaurants	\$-	\$100	\$8,800	\$8,900	\$2,800	\$11,700
Retail - Gasoline stores	\$-	\$5,200	\$3,400	\$8,600	\$2,700	\$11,300
Full-service restaurants	\$-	\$800	\$7,700	\$8,500	\$2,600	\$11,100
Retail - General merchandise stores	\$-	\$300	\$6,400	\$6,700	\$2,100	\$8,800
Retail - Food and beverage stores	\$-	\$200	\$6,300	\$6,500	\$2,000	\$8,500
Funds, trusts, and other financial vehicles	\$-	\$-	\$5,700	\$5,700	\$1,800	\$7,500
Outpatient care centers	\$-	\$-	\$5,400	\$5,400	\$1,700	\$7,100
Nursing and community care facilities	\$-	\$-	\$4,900	\$4,900	\$1,500	\$6,400
All Others	\$-	\$28,600	\$91,400	\$120,000	\$37,100	\$157,100
<b>Totals</b>	<b>\$1,655,900</b>	<b>\$94,900</b>	<b>\$253,200</b>	<b>\$2,004,000</b>	<b>\$621,300</b>	<b>\$2,625,300</b>

Note: To preserve anonymity for regulated cultivators, we have slightly adjusted the revenue and the per-gram price in Del Norte County for the direct economic impact estimate.

**Table A.6: Jobs Supported and Wages Paid (\$), Del Norte County, 2022 Estimated Cultivation Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Del Norte County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals	Wages (\$)
Support activities for agriculture and forestry	-	2.9	-	2.9	0.9	3.8	\$38,800
Cannabis cultivation – Indoor, ML 1, ML 2	2.0	0.2	-	2.2	0.7	2.9	\$1,192,000
Other real estate	-	0.2	0.1	0.2	0.1	0.3	\$3,200
Individual and family services	-	-	0.2	0.2	0.1	0.3	\$6,300
Other local government enterprises	-	0.1	0.1	0.2	0.1	0.3	\$18,400
Full-service restaurants	-	-	0.1	0.2	0.1	0.3	\$6,100
Limited-service restaurants	-	-	0.1	0.2	0.1	0.3	\$5,200
Hospitals	-	-	0.1	0.1	-	0.1	\$23,500
Retail - Food and beverage stores	-	-	0.1	0.1	-	0.1	\$6,000
Retail - General merchandise stores	-	-	0.1	0.1	-	0.1	\$5,400
Nursing and community care facilities	-	-	0.1	0.1	-	0.1	\$7,900
Retail - Miscellaneous store retailers	-	-	0.1	0.1	-	0.1	\$2,900
Retail - Nonstore retailers	-	-	0.1	0.1	-	0.1	\$2,900
Accounting, tax preparation, and payroll services	-	-	-	0.1	-	0.1	\$900
Outpatient care centers	-	-	0.1	0.1	-	0.1	\$7,400
All Others	-	0.2	1.3	1.5	-	1.5	\$31,600
<b>Totals</b>	<b>2.0</b>	<b>3.6</b>	<b>2.6</b>	<b>8.4</b>	<b>3.0</b>	<b>11.4</b>	<b>\$1,358,500</b>

**Table A.7: State and Local Taxes Paid, Del Norte County, 2022 Estimated Cultivation Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$29,250
Personal Income Tax	\$38,480
Sales Taxes*	\$32,110
Property Taxes	\$30,030
Social Insurance Tax: Employee	\$1,950
Social Insurance Tax: Employer	\$1,950
Cannabis Taxes**	\$8,400
Cannabis taxes CA imputed at 2022 Rates	\$224,500
Other Taxes and Fees	\$7,280
<b>State and Local Totals</b>	<b>\$373,950</b>
<b>Federal Totals</b>	<b>\$246,480</b>

\* Does not include cannabis sales taxes; \*\* Includes all local taxes paid on cannabis

## Humboldt County: Cultivation

**Table A.8: Business Revenues Impact, Humboldt County, 2022 Estimated Cultivation Revenue, Current Dollars, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals
Cannabis Cultivation – Indoor, ML 1, ML 2	\$157,234,200	\$1,015,600	\$10,700	\$158,260,600	\$47,478,700	\$205,739,300
Cannabis Cultivation - Outdoor	\$111,991,200	\$100,400	\$18,900	\$112,110,500	\$33,633,100	\$145,743,600
Owner-occupied dwellings	\$-	\$-	\$16,486,200	\$16,486,200	\$3,718,000	\$20,204,200
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$8,947,000	\$1,824,300	\$10,771,300	\$3,231,400	\$14,002,700
Support activities for agriculture and forestry	\$-	\$9,356,100	\$17,500	\$9,373,600	\$2,812,100	\$12,185,700
Other real estate	\$-	\$4,809,100	\$3,153,800	\$7,963,000	\$2,388,900	\$10,351,900
Hospitals	\$-	\$-	\$7,476,400	\$7,476,400	\$2,243,000	\$9,719,400
Other local government enterprises	\$-	\$1,310,500	\$3,439,900	\$4,750,400	\$1,425,100	\$6,175,500
Truck transportation	\$-	\$2,873,800	\$1,611,400	\$4,485,300	\$1,345,600	\$5,830,900
Retail - Nonstore retailers	\$-	\$56,400	\$4,045,600	\$4,102,000	\$1,230,600	\$5,332,600
Limited-service restaurants	\$-	\$53,800	\$3,931,400	\$3,985,200	\$1,195,600	\$5,180,800
Full-service restaurants	\$-	\$262,700	\$3,692,200	\$3,954,900	\$1,186,500	\$5,141,400
Banks and Credit Unions	\$-	\$559,900	\$2,905,900	\$3,465,700	\$1,039,800	\$4,505,500
Offices of physicians	\$-	\$-	\$2,574,500	\$2,574,500	\$772,300	\$3,346,800
Tenant-occupied housing	\$-	\$-	\$2,391,300	\$2,391,300	\$717,400	\$3,108,700
All Others	\$-	\$14,868,900	\$53,327,500	\$68,196,400	\$20,459,000	\$88,655,400
<b>Totals</b>	<b>\$269,225,400</b>	<b>\$44,214,200</b>	<b>\$106,907,500</b>	<b>\$420,347,100</b>	<b>\$124,877,100</b>	<b>\$545,224,200</b>

**Table A.9: Jobs Supported and Wages Paid (\$), Humboldt County, 2022 Estimated Cultivation Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals	Wages (\$)
Cannabis Cultivation – Indoor, ML 1, ML 2	1,912.0	19.5	0.2	1,931.7	579.5	2,511.2	\$172,020,600
Cannabis Cultivation - Outdoor	721.0	3.7	0.7	725.4	217.6	943.0	\$71,325,900
Support activities for agriculture and forestry	-	61.0	0.1	61.1	18.3	79.4	\$4,535,600
Full-service restaurants	-	3.7	52.5	56.2	16.9	73.1	\$2,031,800
Limited-service restaurants	-	0.7	48.3	49.0	14.7	63.7	\$1,724,900
Other real estate	-	28.5	18.7	47.2	14.2	61.4	\$764,700
Individual and family services	-	-	44.2	44.2	13.3	57.5	\$1,477,600
Hospitals	-	-	42.4	42.4	12.7	55.1	\$6,851,600
Wholesale - Misc. nondurable goods merchant wholesalers	-	28.9	5.9	34.8	10.4	45.2	\$2,381,600
Truck transportation	-	20.0	11.2	31.2	9.4	40.6	\$1,350,900
All other food and drinking places	-	1.3	25.5	26.8	8.0	34.8	\$1,121,000
Religious organizations	-	-	25.3	25.3	7.6	32.9	\$1,832,100
Retail - Food and beverage stores	-	0.5	23.9	24.4	7.3	31.7	\$1,398,700
Automotive repair and maintenance	-	2.0	17.8	19.8	5.9	25.7	\$1,075,300
Other local government enterprises	-	5.4	14.1	19.5	5.9	25.4	\$2,126,100
All Others	-	76.6	486.4	563.0	168.9	731.9	\$32,983,500
<b>Totals</b>	<b>2,633.0</b>	<b>251.8</b>	<b>817.2</b>	<b>3,702.0</b>	<b>1,110.6</b>	<b>4,812.6</b>	<b>\$305,001,900</b>

**Table A.10: State and Local Taxes Paid, Humboldt County, 2022 Estimated Cultivation Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$2,570,490
Personal Income Tax	\$11,698,700
Sales Taxes*	\$11,496,810
Property Taxes	\$6,136,260
Social Insurance Tax: Employee	\$595,920
Social Insurance Tax: Employer	\$611,260
Cannabis Taxes**	\$19,151,400
Cannabis taxes CA imputed at 2022 Rates	\$47,749,900
Other Taxes and Fees	\$1,456,910
<b>State and Local Totals</b>	<b>\$101,467,650</b>
<b>Federal Totals</b>	<b>\$67,484,430</b>

\* Does not include cannabis sales taxes; \*\* Includes all local taxes paid on cannabis

### Lake County: Cultivation

**Table A.11: Business Revenues Impact, Lake County, 2022 Estimated Cultivation Revenue, Current Dollars, Top 15 Industries in Lake County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Regulated</b>	<b>Unregulated</b>	<b>Totals</b>
Cannabis Cultivation - Outdoor	\$44,911,500	\$28,300	\$500	\$44,940,300	\$13,482,300	\$58,422,600
Cannabis Cultivation – Indoor, ML 1, ML 2	\$29,957,300	\$36,600	\$500	\$29,994,400	\$8,998,300	\$38,992,700
Support activities for agriculture and forestry	\$-	\$4,494,800	\$1,400	\$4,496,300	\$1,014,000	\$5,510,300
Other real estate	\$-	\$1,632,800	\$215,300	\$1,848,100	\$554,400	\$2,402,500
Owner-occupied dwellings	\$-	\$-	\$1,768,200	\$1,768,200	\$530,500	\$2,298,700
Other local government enterprises	\$-	\$918,100	\$454,000	\$1,372,200	\$411,700	\$1,783,900
Hospitals	\$-	\$-	\$872,100	\$872,100	\$261,600	\$1,133,700
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$630,200	\$63,800	\$694,000	\$208,200	\$902,200
Truck transportation	\$-	\$314,500	\$105,700	\$420,200	\$126,000	\$546,200
Retail - Nonstore retailers	\$-	\$8,200	\$380,000	\$388,100	\$116,400	\$504,500
Electric power transmission and distribution	\$-	\$187,200	\$119,600	\$306,700	\$92,000	\$398,700
Natural gas distribution	\$-	\$225,900	\$66,900	\$292,800	\$87,800	\$380,600
Wholesale - Petroleum and petroleum products	\$-	\$197,500	\$84,100	\$281,500	\$84,500	\$366,000
Limited-service restaurants	\$-	\$9,200	\$257,800	\$267,000	\$80,100	\$347,100
Retail - Gasoline stores	\$-	\$131,800	\$105,700	\$237,600	\$71,300	\$308,900
All Others	\$-	\$1,791,100	\$3,957,300	\$5,748,400	\$1,724,400	\$7,472,800
<b>Totals</b>	<b>\$74,868,800</b>	<b>\$10,606,200</b>	<b>\$8,452,900</b>	<b>\$93,927,900</b>	<b>\$27,843,500</b>	<b>\$121,771,400</b>

**Table A.12: Jobs Supported and Wages Paid (\$), Lake County, 2022 Estimated Cultivation Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Lake County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals	Wages (\$)
Cannabis Cultivation - Outdoor	766.0	7.2	0.1	773.3	232.0	1,005.3	\$15,533,400
Support activities for agriculture and forestry	-	129.4	-	129.4	38.8	168.2	\$6,239,600
Cannabis Cultivation – Indoor, ML 1, ML 2	20.0	0.1	-	20.1	6.0	26.1	\$2,083,000
Other real estate	-	12.7	1.7	14.4	4.3	18.7	\$150,400
Other local government enterprises	-	3.8	1.9	5.7	1.7	7.4	\$605,800
Hospitals	-	-	5.1	5.1	1.5	6.6	\$780,500
Individual and family services	-	-	5.1	5.1	1.5	6.6	\$166,700
Limited-service restaurants	-	0.1	3.1	3.2	1.0	4.2	\$125,500
Full-service restaurants	-	0.5	2.5	3.0	0.9	3.9	\$101,100
Retail - Food and beverage stores	-	0.1	2.5	2.6	0.8	3.4	\$146,100
Wholesale - Misc. nondurable goods merchant wholesalers	-	2.2	0.2	2.4	0.7	3.1	\$131,600
Services to buildings	-	1.6	0.5	2.1	0.6	2.7	\$53,200
Truck transportation	-	1.5	0.5	2.0	0.6	2.6	\$229,300
Retail - Nonstore retailers	-	-	1.9	1.9	0.6	2.5	\$48,100
Automotive repair and maintenance	-	0.3	1.6	1.9	0.6	2.5	\$74,400
All Others	-	12.1	35.4	47.5	14.3	61.8	\$2,299,800
<b>Totals</b>	<b>786.0</b>	<b>171.6</b>	<b>62.1</b>	<b>1,019.8</b>	<b>305.9</b>	<b>1,325.7</b>	<b>\$28,768,500</b>

**Table A.13: State and Local Taxes Paid, Lake County, 2022 Estimated Cultivation Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$2,233,790
Personal Income Tax	\$1,079,780
Sales Taxes*	\$686,920
Property Taxes	\$795,470
Social Insurance Tax: Employee	\$55,900
Social Insurance Tax: Employer	\$57,330
Cannabis Taxes**	\$2,132,700
Cannabis taxes CA imputed at 2022 Rates	\$16,614,100
Other Taxes and Fees	\$4,911,140
<b>State and Local Totals</b>	<b>\$28,567,130</b>
<b>Federal Totals</b>	<b>\$8,804,640</b>

\* Does not include cannabis sales taxes; \*\* Includes all local taxes paid on cannabis



## Mendocino County: Cultivation

**Table A.14: Business Revenues Impact, Mendocino County, 2022 Estimated Cultivation Revenue, Current Dollars, Top 15 Industries in Mendocino County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals
Cannabis Cultivation – Indoor, ML 1, ML 2	\$120,578,700	\$2,273,000	\$7,900	\$122,859,600	\$36,858,400	\$159,718,000
Cannabis Cultivation - Outdoor	\$118,254,700	\$383,300	\$20,900	\$118,658,900	\$35,597,700	\$154,256,600
Support activities for agriculture and forestry	\$-	\$9,642,700	\$6,100	\$9,648,800	\$2,176,000	\$11,824,800
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$7,080,900	\$531,800	\$7,612,700	\$2,283,800	\$9,896,500
Other real estate	\$-	\$5,024,100	\$1,096,400	\$6,120,500	\$1,836,100	\$7,956,600
Owner-occupied dwellings	\$-	\$-	\$4,840,500	\$4,840,500	\$1,452,100	\$6,292,600
Hospitals	\$-	\$-	\$2,689,700	\$2,689,700	\$806,900	\$3,496,600
Banks and Credit Unions	\$-	\$512,900	\$903,600	\$1,416,500	\$425,000	\$1,841,500
Full-service restaurants	\$-	\$245,700	\$1,157,400	\$1,403,100	\$420,900	\$1,824,000
Other local government enterprises	\$-	\$702,800	\$694,100	\$1,397,000	\$419,100	\$1,816,100
Natural gas distribution	\$-	\$1,106,200	\$202,000	\$1,308,200	\$392,500	\$1,700,700
Truck transportation	\$-	\$1,068,200	\$225,500	\$1,293,700	\$388,100	\$1,681,800
Limited-service restaurants	\$-	\$49,700	\$1,191,200	\$1,240,900	\$372,300	\$1,613,200
Retail - Nonstore retailers	\$-	\$32,300	\$1,165,000	\$1,197,400	\$359,200	\$1,556,600
Tenant-occupied housing	\$-	\$-	\$1,144,800	\$1,144,800	\$343,500	\$1,488,300
All Others	\$-	\$8,605,900	\$14,678,800	\$23,284,800	\$6,985,400	\$30,270,200
<b>Totals</b>	<b>\$238,833,400</b>	<b>\$36,727,700</b>	<b>\$30,555,700</b>	<b>\$306,116,800</b>	<b>\$91,117,000</b>	<b>\$397,233,800</b>

**Table A.15: Jobs Supported and Wages Paid, Mendocino County, 2022 Estimated Cultivation Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Mendocino County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals	Wages (\$)
Cannabis Cultivation – Indoor, ML 1, ML 2	452.0	19.5	0.1	471.6	141.5	613.1	\$53,496,300
Cannabis Cultivation - Outdoor	224.0	13.6	0.7	238.3	71.5	309.8	\$30,241,900
Support activities for agriculture and forestry	-	164.2	0.1	164.3	49.3	213.6	\$9,743,900
Other real estate	-	32.9	7.2	40.1	12.0	52.1	\$619,800
Wholesale - Misc. nondurable goods merchant wholesalers	-	23.3	1.8	25.1	7.5	32.6	\$1,925,800
Full-service restaurants	-	3.0	13.9	16.9	5.1	22.0	\$760,200
Hospitals	-	-	16.4	16.4	4.9	21.3	\$2,338,600
Limited-service restaurants	-	0.5	13.0	13.5	4.1	17.6	\$564,600
Individual and family services	-	-	12.0	12.0	3.6	15.6	\$446,500
Retail - Food and beverage stores	-	0.3	7.0	7.3	2.2	9.5	\$455,200
Retail - General merchandise stores	-	0.4	5.9	6.3	1.9	8.2	\$386,800
Automotive repair and maintenance	-	1.0	5.1	6.1	1.8	7.9	\$307,800
Religious organizations	-	-	6.1	6.1	1.8	7.9	\$378,200
Outpatient care centers	-	-	6.1	6.1	1.8	7.9	\$521,800
All other food and drinking places	-	0.6	5.3	5.9	1.8	7.7	\$293,000
All Others	-	61.4	129.0	190.4	57.1	247.5	\$9,988,500
<b>Totals</b>	<b>676.0</b>	<b>320.7</b>	<b>229.7</b>	<b>1,226.4</b>	<b>367.9</b>	<b>1,594.3</b>	<b>\$112,468,900</b>

**Table A.16: State and Local Taxes Paid, Mendocino County, 2022 Estimated Cultivation Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$6,650,150
Personal Income Tax	\$3,722,810
Sales Taxes*	\$5,431,920
Property Taxes	\$4,549,870
Social Insurance Tax: Employee	\$232,960
Social Insurance Tax: Employer	\$238,940
Cannabis Taxes**	\$6,063,700
Cannabis taxes CA imputed at 2022 Rates	\$52,535,600
Other Taxes and Fees	\$867,880
<b>State and Local Totals</b>	<b>\$80,293,830</b>
<b>Federal Totals</b>	<b>\$30,037,540</b>

\* Does not include cannabis sales taxes; \*\* Includes all local taxes paid on cannabis

### **Sonoma County: Cultivation**

**Table A.17: Business Revenues Impact, Sonoma County, 2022 Estimated Cultivation Revenue, Current Dollars, Top 15 Industries in Sonoma County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Regulated</b>	<b>Unregulated</b>	<b>Totals</b>
Cannabis Cultivation – Indoor, ML 1, ML 2	\$53,594,500	\$635,400	\$5,000	\$54,234,900	\$16,270,700	\$70,505,600
Cannabis Cultivation - Outdoor	\$144,397,600	\$52,100	\$2,600	\$144,452,300	\$43,335,700	\$187,788,000
Owner-occupied dwellings	\$-	\$6,635,500	\$6,400	\$6,641,900	\$1,497,900	\$8,139,800
Support activities for agriculture and forestry	\$-	\$4,068,500	\$1,310,300	\$5,378,800	\$1,613,700	\$6,992,500
Other real estate	\$-	\$-	\$5,368,800	\$5,368,800	\$1,610,600	\$6,979,400
Hospitals	\$-	\$4,112,300	\$559,900	\$4,672,200	\$1,401,600	\$6,073,800
Pesticides/other agricultural chemical manufacturing	\$-	\$864,700	\$974,400	\$1,839,000	\$551,700	\$2,390,700
Other local government enterprises	\$-	\$-	\$1,723,400	\$1,723,400	\$517,100	\$2,240,500
Full-service restaurants	\$-	\$161,900	\$1,274,800	\$1,436,700	\$431,000	\$1,867,700
Truck transportation	\$-	\$303,000	\$753,100	\$1,056,200	\$316,900	\$1,373,100
Limited-service restaurants	\$-	\$26,700	\$982,200	\$1,008,900	\$302,700	\$1,311,600
Commercial/industrial machinery and equipment rental and leasing	\$-	\$16,500	\$963,800	\$980,200	\$294,000	\$1,274,200
Retail - Nonstore retailers	\$-	\$-	\$907,500	\$907,500	\$272,300	\$1,179,800
Tenant-occupied housing	\$-	\$579,500	\$325,400	\$904,900	\$271,500	\$1,176,400
Offices of physicians	\$-	\$-	\$816,700	\$816,700	\$245,000	\$1,061,700
All Others	\$-	\$8,783,800	\$19,706,400	\$28,490,300	\$8,547,200	\$37,037,500
<b>Totals</b>	<b>\$197,992,100</b>	<b>\$26,239,900</b>	<b>\$35,680,700</b>	<b>\$259,912,700</b>	<b>\$77,479,600</b>	<b>\$337,392,300</b>

**Table A.18: Jobs Supported and Wages Paid, Sonoma County, 2022 Estimated Cultivation Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Sonoma County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals	Wages (\$)
Support activities for agriculture and forestry	-	138.8	0.1	138.9	41.7	180.6	\$7,303,900
Cannabis Cultivation – Indoor, ML 1, ML 2	97.0	1.8	0.1	98.9	29.7	128.6	\$43,629,900
Cannabis Cultivation - Outdoor	66.0	6.8	0.1	72.9	21.9	94.8	\$27,986,200
Other real estate	-	23.0	7.4	30.4	9.1	39.5	\$402,100
Full-service restaurants	-	2.0	15.9	17.9	5.4	23.3	\$648,500
Wholesale - Misc. nondurable goods merchant wholesalers	-	11.9	1.6	13.5	4.1	17.6	\$1,202,900
Individual and family services	-	-	13.2	13.2	4.0	17.2	\$353,200
Limited-service restaurants	-	0.3	11.3	11.6	3.5	15.1	\$369,400
Hospitals	-	-	8.7	8.7	2.6	11.3	\$1,256,600
Employment services	-	2.7	5.0	7.7	2.3	10.0	\$340,100
Retail - Food and beverage stores	-	0.2	7.0	7.2	2.2	9.4	\$347,100
All other food and drinking places	-	0.5	6.5	7.0	2.1	9.1	\$248,200
Offices of physicians	-	-	6.4	6.4	1.9	8.3	\$718,300
Other local government enterprises	-	2.9	3.3	6.2	1.9	8.1	\$784,400
Religious organizations	-	-	5.7	5.7	1.7	7.4	\$347,800
All Others	-	44.3	159.6	203.9	61.2	265.1	\$10,761,900
<b>Totals</b>	<b>163.0</b>	<b>235.2</b>	<b>251.9</b>	<b>650.1</b>	<b>195.0</b>	<b>845.1</b>	<b>\$96,700,500</b>

**Table A.19: State and Local Taxes Paid, Sonoma County, 2022 Estimated Cultivation Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$3,501,030
Personal Income Tax	\$4,681,430
Sales Taxes*	\$3,439,020
Property Taxes	\$3,693,560
Social Insurance Tax: Employee	\$327,210
Social Insurance Tax: Employer	\$335,660
Cannabis Taxes**	\$3,092,100
Cannabis taxes CA imputed at 2022 Rates	\$31,147,800
Other Taxes and Fees	\$16,875,430
<b>State and Local Totals</b>	<b>\$67,093,240</b>
<b>Federal Totals</b>	<b>\$32,125,210</b>

\* Does not include cannabis sales taxes; \*\* Includes all local taxes paid on cannabis

## Trinity County: Cultivation

**Table A.20: Business Revenues Impact, Trinity County, 2022 Estimated Cultivation Revenue, Current Dollars, Top 15 Industries in Trinity County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals
Cannabis Cultivation – Indoor, ML 1, ML 2	\$12,158,000	\$1,800	\$-	\$12,159,800	\$3,648,000	\$15,807,800
Cannabis Cultivation - Outdoor	\$14,874,700	\$47,100	\$3,900	\$14,925,700	\$4,477,700	\$19,403,400
Owner-occupied dwellings	\$-	\$-	\$988,900	\$988,900	\$223,100	\$1,212,000
Support activities for agriculture and forestry	\$-	\$984,800	\$800	\$985,700	\$295,700	\$1,281,400
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$503,100	\$70,800	\$573,900	\$172,200	\$746,100
Hospitals	\$-	\$-	\$459,900	\$459,900	\$137,900	\$597,800
Other real estate	\$-	\$357,700	\$82,800	\$440,500	\$132,100	\$572,600
Retail - Nonstore retailers	\$-	\$2,700	\$226,400	\$229,100	\$68,700	\$297,800
Limited-service restaurants	\$-	\$2,400	\$137,000	\$139,400	\$41,800	\$181,200
Local government electric utilities	\$-	\$51,800	\$80,500	\$132,300	\$39,700	\$172,000
Retail - Food and beverage stores	\$-	\$3,000	\$125,800	\$128,800	\$38,600	\$167,400
Retail - Gasoline stores	\$-	\$61,800	\$58,900	\$120,700	\$36,200	\$156,900
Funds, trusts, and other financial vehicles	\$-	\$500	\$103,900	\$104,400	\$31,300	\$135,700
Truck transportation	\$-	\$58,500	\$23,200	\$81,700	\$24,500	\$106,200
Grantmaking, giving, and social advocacy organizations	\$-	\$-	\$71,500	\$71,500	\$21,400	\$92,900
All Others	\$-	\$468,200	\$1,286,600	\$1,754,800	\$526,400	\$2,281,200
<b>Totals</b>	<b>\$27,032,700</b>	<b>\$2,543,400</b>	<b>\$3,720,900</b>	<b>\$33,297,000</b>	<b>\$9,915,300</b>	<b>\$43,212,300</b>

**Table A.21: Jobs Supported and Wages Paid (\$), Trinity County, 2022 Estimated Cultivation Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Trinity County**

Industry	Direct	Indirect	Induced	Regulated	Unregulated	Totals	Wages (\$)
Cannabis Cultivation – Indoor, ML 1, ML 2	278.0	-	-	278.0	83.4	361.4	\$4,982,700
Cannabis Cultivation - Outdoor	190.0	2.2	0.2	192.4	57.7	250.1	\$3,579,800
Support activities for agriculture and forestry	-	5.8	-	5.8	1.7	7.5	\$547,000
Other real estate	-	2.9	0.7	3.6	1.1	4.7	\$13,300
Hospitals	-	-	3.1	3.1	0.9	4.0	\$272,000
Individual and family services	-	-	2.7	2.7	0.8	3.5	\$51,300
Wholesale - Misc. nondurable goods merchant wholesalers	-	1.9	0.3	2.2	0.7	2.9	\$50,900
Limited-service restaurants	-	-	1.8	1.8	0.5	2.3	\$39,600
Retail - Food and beverage stores	-	-	1.6	1.6	0.5	2.1	\$59,900
Retail - Nonstore retailers	-	-	1.4	1.4	0.4	1.8	\$16,600
All other food and drinking places	-	0.1	1.2	1.3	0.4	1.7	\$28,700
Retail - Miscellaneous store retailers	-	-	1.0	1.0	0.3	1.3	\$15,700
Full-service restaurants	-	0.1	0.9	1.0	0.3	1.3	\$18,800
Landscape and horticultural services	-	0.5	0.2	0.7	0.2	0.9	\$10,900
Retail - Gasoline stores	-	0.4	0.4	0.8	0.2	1.0	\$19,200
All Others	-	3.9	12.5	16.4	4.9	21.3	\$462,500
<b>Totals</b>	<b>468.0</b>	<b>17.8</b>	<b>28.0</b>	<b>513.8</b>	<b>154.1</b>	<b>667.9</b>	<b>\$10,168,900</b>

**Table A.22: State and Local Taxes Paid, Trinity County, 2022 Estimated Cultivation Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$302,250
Personal Income Tax	\$787,150
Sales Taxes*	\$441,870
Property Taxes	\$530,790
Social Insurance Tax: Employee	\$29,900
Social Insurance Tax: Employer	\$30,680
Cannabis Taxes**	\$453,500
Cannabis taxes CA imputed at 2022 Rates	\$5,113,600
Other Taxes and Fees	\$131,560
<b>State and Local Totals</b>	<b>\$7,821,300</b>
<b>Federal Totals</b>	<b>\$4,772,300</b>

\* Does not include cannabis sales taxes; \*\* Includes all local taxes paid on cannabis

## Manufacturing Algorithms

These algorithms show the amount of revenue that can be made with few employees. However, these algorithms do not capture smaller cannabis entrepreneurs who cultivate and create consumable products, like small food or beverage manufacturers. These algorithms are used for more extensive manufacturing facilities that produce goods in a laboratory environment, using chemical extraction and other methods to generate products from raw cannabis.

**Table A.23: Algorithm: For Every \$1,000,000 of cannabis manufacturing value-added income, Humboldt County creates:**

<b>Category</b>	<b>Del Norte</b>	<b>Humboldt</b>	<b>Lake</b>	<b>Mendocino</b>	<b>Sonoma</b>	<b>Trinity</b>
<b>Value-Added for County Employers (\$)</b>	\$1,260,800	\$1,318,100	\$1,260,800	\$1,167,800	\$1,372,600	\$1,260,900
<b>Jobs Supported in County (Workers)</b>	3.9	6.6	3.8	3.3	6.7	3.9
<b>State and Local Taxes (\$)</b>	\$20,600	\$117,900	\$88,100	\$78,700	\$278,300	\$83,100

## Del Norte County: Manufacturing

**Table A.24: Value-Added Impact, Del Norte County, 2022 Estimated Manufacturing Revenue, Current Dollars, Top 15 Industries in Del Norte County**

Industry	Direct	Indirect	Induced	Totals
Cannabis manufacturing	\$2,583,700	\$4,000	\$-	\$2,587,700
Owner-occupied dwellings	\$-	\$-	\$68,100	\$68,100
Cannabis Processor, Nursery, and Related Activities	\$-	\$60,100	\$700	\$60,800
Management of companies and enterprises	\$-	\$40,300	\$3,100	\$43,400
Insurance agencies, brokerages, and related activities	\$-	\$27,500	\$1,600	\$29,100
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$21,100	\$4,900	\$26,000
Banks and Credit Unions	\$-	\$12,300	\$7,300	\$19,600
Hospitals	\$-	\$-	\$19,100	\$19,100
Other real estate	\$-	\$10,400	\$8,300	\$18,700
Full-service restaurants	\$-	\$5,300	\$10,400	\$15,700
Radio and television broadcasting	\$-	\$14,300	\$1,100	\$15,400
Retail - Nonstore retailers	\$-	\$4,000	\$11,200	\$15,200
Tenant-occupied housing	\$-	\$-	\$12,100	\$12,100
Truck transportation	\$-	\$9,000	\$1,900	\$10,900
Electric power transmission and distribution	\$-	\$8,300	\$1,700	\$10,000
All Others	\$-	\$133,100	\$177,700	\$310,800
<b>Totals</b>	<b>\$2,583,700</b>	<b>\$349,700</b>	<b>\$329,200</b>	<b>\$3,262,600</b>

**Table A.25: Jobs Supported and Wages Paid, Del Norte County, 2022 Estimated Manufacturing Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Del Norte County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis manufacturing	6.0	0.0	0.0	6.0	\$757,500
Full-service restaurants	0.0	0.1	0.2	0.3	\$30,800
Management of companies and enterprises	0.0	0.2	0.0	0.2	\$22,000
Insurance agencies and related activities	0.0	0.2	0.0	0.2	\$20,800
Cannabis Processor, Nursery, and Related Activities	0.0	0.2	0.0	0.2	\$16,000
Limited-service restaurants	0.0	0.0	0.1	0.1	\$8,900
Individual and family services	0.0	0.0	0.1	0.1	\$8,100
Hospitals	0.0	0.0	0.1	0.1	\$8,000
Wholesale - nondurable goods merchant wholesalers	0.0	0.1	0.0	0.1	\$6,900
Employment services	0.0	0.1	0.0	0.1	\$5,900
Retail - Food and beverage stores	0.0	0.0	0.1	0.1	\$5,900
All other food and drinking places	0.0	0.0	0.1	0.1	\$5,500
Services to buildings	0.0	0.1	0.0	0.1	\$5,200
Other local government enterprises	0.0	0.1	0.1	0.2	\$4,800
Religious organizations	0.0	0.0	0.1	0.1	\$4,700
All Others	0.0	0.8	1.2	2.0	\$148,800
<b>Totals</b>	<b>6.0</b>	<b>1.9</b>	<b>2.1</b>	<b>10.0</b>	<b>\$1,059,800</b>

**Table A.26: State and Local Taxes Paid, Del Norte County, 2022 Estimated Manufacturing Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$5,100
Personal Income Tax	\$10,400
Sales Taxes	\$22,300
Property Taxes	\$11,500
Social Insurance Tax: Employee	\$800
Social Insurance Tax: Employer	\$800
Cannabis Taxes	\$-
Other Taxes and Fees	\$2,500
<b>State and Local Totals</b>	<b>\$53,400</b>
<b>Federal Totals</b>	<b>\$72,200</b>

### **Humboldt County: Manufacturing**

**Table A.27: Value-Added Impact, Humboldt County, 2022 Estimated Manufacturing Revenue, Current Dollars, Top 15 Industries in Humboldt County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis manufacturing	\$83,162,900	\$30,200	\$0	\$83,193,100
Wholesale – Cannabis Related	\$0	\$3,672,100	\$34,100	\$3,706,200
Owner-occupied dwellings	\$0	\$0	\$2,408,800	\$2,408,800
Management of companies and enterprises	\$0	\$1,142,800	\$68,000	\$1,210,800
Insurance agencies, brokerages, and related activities	\$0	\$1,114,700	\$59,800	\$1,174,500
Wholesale - Misc. nondurable goods merchant wholesalers	\$0	\$939,700	\$171,500	\$1,111,200
Radio and television broadcasting	\$0	\$898,600	\$49,400	\$948,000
Banks and Credit Unions	\$0	\$613,300	\$300,400	\$913,700
Hospitals	\$0	\$0	\$802,800	\$802,800
Truck transportation	\$0	\$637,200	\$103,100	\$740,300
Retail - Nonstore retailers	\$0	\$225,900	\$493,200	\$719,100
Other real estate	\$0	\$414,300	\$243,300	\$657,600
Full-service restaurants	\$0	\$225,300	\$338,400	\$563,700
Automotive repair and maintenance	\$0	\$212,500	\$212,400	\$424,900
Tenant-occupied housing	\$0	\$0	\$411,300	\$411,300
All Others	\$0	\$4,962,900	\$5,711,800	\$10,674,700
<b>Totals</b>	<b>\$83,162,900</b>	<b>\$15,089,500</b>	<b>\$11,408,300</b>	<b>\$109,660,700</b>

**Table A.28: Jobs Supported and Wages Paid, Humboldt County, 2022 Estimated Manufacturing Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis manufacturing	301.0	0.1	0.0	301.1	\$24,049,600
Wholesale – Processor and Nursery and Microbusiness		12.9	0.1	13.0	\$1,131,700
Management of companies and enterprises		12.3	0.7	13.0	\$1,022,200
Insurance agencies, brokerages, and related activities		11.4	0.6	12.1	\$888,400
Full-service restaurants		4.7	7.1	11.8	\$307,500
Truck transportation		9.4	1.5	10.9	\$340,100
Couriers and messengers		8.4	1.4	9.7	\$167,100
Limited-service restaurants		1.4	6.6	8.0	\$202,300
Other real estate		4.3	2.5	6.9	\$80,000
All other crop farming		6.7	0.1	6.8	\$85,700
Advertising, public relations, and related services		6.3	0.3	6.6	\$113,600
Individual and family services			5.9	5.9	\$143,000
Hospitals			5.8	5.8	\$675,000
Employment services		4.0	1.5	5.5	\$95,500
Wholesale - Misc. nondurable goods merchant wholesalers		4.4	0.8	5.2	\$256,400
All Others	-	54.5	75.8	130.3	\$5,710,700
<b>Totals</b>	<b>301.0</b>	<b>140.8</b>	<b>110.8</b>	<b>552.6</b>	<b>\$35,268,800</b>

**Table A.29: State and Local Taxes Paid, Humboldt County, 2022 Estimated Manufacturing Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$2,598,000
Personal Income Tax	\$1,549,200
Sales Taxes	\$3,465,400
Property Taxes	\$1,389,900
Social Insurance Tax: Employee	\$98,500
Social Insurance Tax: Employer	\$101,000
Cannabis Taxes	\$-
Other Taxes and Fees	\$2,500
<b>State and Local Totals</b>	<b>\$9,204,500</b>
<b>Federal Totals</b>	<b>\$11,912,400</b>



## Lake County: Manufacturing

**Table A.30: Value-Added Impact, Lake County, 2022 Estimated Manufacturing Revenue, Current Dollars, Top 15 Industries in Lake County**

Industry	Direct	Indirect	Induced	Totals
Cannabis manufacturing	\$15,071,800	\$23,100	\$-	\$15,094,900
Owner-occupied dwellings	\$-	\$-	\$397,500	\$397,500
Cannabis Processor, Nursery, and Related Activities	\$-	\$350,800	\$4,100	\$354,900
Management of companies and enterprises	\$-	\$234,900	\$18,200	\$253,100
Insurance agencies, brokerages, and related activities	\$-	\$160,700	\$9,600	\$170,300
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$123,200	\$28,600	\$151,800
Banks and Credit Unions	\$-	\$71,500	\$42,500	\$114,000
Hospitals	\$-	\$-	\$111,200	\$111,200
Other real estate	\$-	\$60,400	\$48,700	\$109,100
Full-service restaurants	\$-	\$30,700	\$60,800	\$91,500
Radio and television broadcasting	\$-	\$83,200	\$6,400	\$89,600
Retail - Nonstore retailers	\$-	\$23,000	\$65,400	\$88,400
Tenant-occupied housing	\$-	\$-	\$70,300	\$70,300
Truck transportation	\$-	\$52,800	\$11,200	\$64,000
Electric power transmission and distribution	\$-	\$48,400	\$10,100	\$58,500
All Others	\$-	\$776,100	\$1,036,800	\$1,812,900
<b>Totals</b>	<b>\$15,071,800</b>	<b>\$2,038,800</b>	<b>\$1,921,400</b>	<b>\$19,032,000</b>

**Table A.31: Jobs Supported and Wages Paid, Lake County, 2022 Estimated Manufacturing Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Lake County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis manufacturing	35	0.1	0	35.1	\$4,418,400
Full-service restaurants	0	0.5	0.9	1.4	\$34,800
Management of companies and enterprises	0	1.2	0.1	1.3	\$132,000
Insurance agencies, brokerages, and related activities	0	1.1	0.1	1.2	\$48,400
Cannabis Processor, Nursery, and Related Activities	0	1	0	1	\$51,800
Limited-service restaurants	0	0.1	0.7	0.8	\$22,500
Individual and family services	0	0	0.8	0.8	\$18,800
Hospitals	0	0	0.7	0.7	\$76,700
Wholesale - Misc. nondurable goods merchant wholesalers	0	0.4	0.1	0.5	\$19,200
Employment services	0	0.3	0.2	0.5	\$8,600
Retail - Food and beverage stores	0	0	0.5	0.5	\$20,300
All other food and drinking places	0	0.1	0.4	0.5	\$17,200
Services to buildings	0	0.4	0.1	0.5	\$9,100
Other local government enterprises	0	0.1	0.1	0.2	\$15,300
Religious organizations	0	0	0.4	0.4	\$7,700
All Others	0	4.8	7	11.8	\$1,283,400
<b>Totals</b>	<b>35</b>	<b>10.1</b>	<b>12.1</b>	<b>57.2</b>	<b>\$6,184,200</b>

**Table A.32: State and Local Taxes Paid, Lake County, 2022 Estimated Manufacturing Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$139,200
Personal Income Tax	\$136,700
Sales Taxes	\$229,300
Property Taxes	\$196,500
Social Insurance Tax: Employee	\$11,300
Social Insurance Tax: Employer	\$11,600
Cannabis Taxes	\$543,800
Other Taxes and Fees	\$61,600
<b>State and Local Totals</b>	<b>\$1,330,000</b>
<b>Federal Totals</b>	<b>\$1,133,200</b>

### **Mendocino County: Manufacturing**

**Table A.33: Value-Added Impact, Mendocino County, 2022 Estimated Manufacturing Revenue, Current Dollars, Top 15 Industries in Mendocino County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis manufacturing	\$51,584,300	\$7,700	\$0	\$51,592,000
Owner-occupied dwellings	\$0	\$0	\$1,114,500	\$1,114,500
Cannabis Processor, Nursery, and Related Activities	\$0	\$585,900	\$9,100	\$595,000
Hospitals	\$0	\$0	\$428,300	\$428,300
Management of companies and enterprises	\$0	\$323,400	\$30,200	\$353,600
Wholesale - Misc. nondurable goods merchant wholesalers	\$0	\$254,600	\$76,900	\$331,500
Banks and Credit Unions	\$0	\$180,200	\$148,300	\$328,500
Tenant-occupied housing	\$0	\$0	\$303,700	\$303,700
Retail - Nonstore retailers	\$0	\$59,800	\$224,000	\$283,800
Full-service restaurants	\$0	\$74,600	\$190,800	\$265,400
Insurance agencies, brokerages, and related activities	\$0	\$239,600	\$11,800	\$251,400
Other real estate	\$0	\$104,300	\$114,700	\$219,000
Truck transportation	\$0	\$157,800	\$42,400	\$200,200
Limited-service restaurants	\$0	\$21,400	\$174,800	\$196,200
Radio and television broadcasting	\$0	\$140,200	\$13,400	\$153,600
All Others	\$0	\$1,290,300	\$2,344,600	\$3,634,900
<b>Totals</b>	<b>\$51,584,300</b>	<b>\$3,439,800</b>	<b>\$5,227,500</b>	<b>\$60,251,600</b>

**Table A.34: Jobs Supported and Wages Paid, Mendocino County, 2022 Estimated Manufacturing Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Mendocino County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>	<b>Wages (\$)</b>
Cannabis manufacturing	84.0	0.0	0.0	84.0	\$15,118,000
All other crop farming		6.7	0.2	6.8	\$35,400
Full-service restaurants		1.2	3.0	4.1	\$133,500
Insurance agencies, brokerages, and related activities		3.8	0.2	3.9	\$186,800
Hospitals			3.5	3.5	\$359,900
Limited-service restaurants		0.3	2.8	3.1	\$93,500
Management of companies and enterprises		2.8	0.3	3.1	\$299,800
Cannabis Processor, Nursery, and Related Activities		2.9	0.0	3.0	\$201,400
Other real estate		1.4	1.5	2.9	\$32,500
Individual and family services			2.5	2.5	\$68,100
Couriers and messengers		1.3	0.4	1.7	\$56,400
Automotive repair and maintenance		0.6	1.1	1.7	\$59,600
Wholesale - Misc. nondurable goods merchant wholesalers		1.2	0.4	1.6	\$89,100
Services to buildings		1.2	0.3	1.6	\$36,600
Retail - Food and beverage stores		0.0	1.5	1.5	\$67,000
All Others	-	13.9	31.2	45.1	\$1,706,500
<b>Totals</b>	<b>84.0</b>	<b>37.2</b>	<b>48.9</b>	<b>170.1</b>	<b>\$18,544,100</b>

**Table A.35: State and Local Taxes Paid, Mendocino County, 2022 Estimated Manufacturing Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$1,517,100
Personal Income Tax	\$744,000
Sales Taxes*	\$919,300
Property Taxes	\$622,700
Social Insurance Tax: Employee	\$51,900
Social Insurance Tax: Employer	\$53,200
Cannabis Taxes**	\$-
Other Taxes and Fees	\$149,900
<b>State and Local Totals</b>	<b>\$4,058,100</b>
<b>Federal Totals</b>	<b>\$6,354,800</b>

## Sonoma County: Manufacturing

**Table A.36: Value-Added Impact, Sonoma County, 2022 Estimated Manufacturing Revenue, Current Dollars, Top 15 Industries in Sonoma County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Manufacturing	\$86,347,300	\$87,000	\$0	\$86,434,300
Cannabis Processor, Nursery, and Related Activities	\$0	\$3,233,200	\$26,400	\$3,259,600
Management of companies and enterprises	\$0	\$2,416,800	\$138,500	\$2,555,300
Owner-occupied dwellings	\$0	\$0	\$2,553,600	\$2,553,600
Insurance agencies, brokerages, and related activities	\$0	\$1,529,700	\$69,500	\$1,599,200
Wholesale - Misc. nondurable goods merchant wholesalers	\$0	\$1,120,800	\$185,100	\$1,305,900
Banks and Credit Unions	\$0	\$693,900	\$284,800	\$978,700
Other real estate	\$0	\$597,400	\$345,700	\$943,100
Radio and television broadcasting	\$0	\$726,000	\$41,500	\$767,500
Full-service restaurants	\$0	\$297,700	\$421,500	\$719,200
Electric power transmission and distribution	\$0	\$597,500	\$87,900	\$685,400
Hospitals	\$0	\$0	\$634,800	\$634,800
Newspaper publishers	\$0	\$550,100	\$29,800	\$579,900
Employment services	\$0	\$404,300	\$154,200	\$558,500
Advertising and related services	\$0	\$519,200	\$22,300	\$541,500
All Others	\$0	\$6,738,000	\$7,787,300	\$14,525,300
<b>Totals</b>	<b>\$86,347,300</b>	<b>\$19,511,600</b>	<b>\$12,782,900</b>	<b>\$118,641,800</b>

**Table A.37: Jobs Supported, Sonoma County, 2022 Estimated Manufacturing Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Sonoma County**

Industry	Direct	Indirect	Induced	Totals	Totals
Cannabis manufacturing	330.0	0.3	0.0	330.3	\$25,027,400
Insurance agencies, brokerages, and related activities		13.6	0.6	14.2	\$573,900
Management of companies and enterprises		12.6	0.7	13.3	\$1,353,600
Full-service restaurants		4.9	7.0	11.9	\$296,000
Cannabis Processor, Nursery, and Related Activities		11.6	0.1	11.7	\$603,600
Other real estate		5.6	3.2	8.9	\$66,800
Employment services		5.7	2.2	7.9	\$135,800
Couriers and messengers		6.3	1.1	7.4	\$161,100
Limited-service restaurants		1.2	4.9	6.1	\$171,800
Individual and family services			5.8	5.8	\$136,100
Services to buildings		5.0	0.8	5.7	\$103,900
Advertising, public relations, and related services		5.0	0.2	5.3	\$55,700
Wholesale - Misc. nondurable goods merchant wholesalers		4.3	0.7	5.0	\$191,800
Truck transportation		4.2	0.6	4.8	\$402,700
Accounting, tax preparation, and payroll services		3.3	1.0	4.3	\$85,700
All Others	-	55.6	81.3	136.8	\$10,617,400
<b>Totals</b>	<b>330.0</b>	<b>139.2</b>	<b>110.3</b>	<b>579.5</b>	<b>\$39,983,300</b>

**Table A.38: State and Local Taxes Paid, Sonoma County, 2022 Estimated Manufacturing Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$4,917,700
Personal Income Tax	\$6,171,300
Sales Taxes	\$468,200
Property Taxes	\$84,800
Social Insurance Tax: Employee	\$2,960,100
Social Insurance Tax: Employer	\$2,500,500
Cannabis Taxes	\$6,805,900
Other Taxes (incl. Cannabis)	\$149,900
<b>Totals State and Local</b>	<b>\$24,058,400</b>
<b>Totals Federal</b>	<b>\$12,460,700</b>

### Trinity County: Manufacturing

**Table A.39: Value-Added Impact, Trinity County, 2022 Estimated Manufacturing Revenue, Current Dollars, Top 15 Industries in Trinity County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis manufacturing	\$2,153,100	\$3,300	\$-	\$2,156,400
Owner-occupied dwellings	\$-	\$-	\$56,800	\$56,800
Cannabis Processor, Nursery, and Related Activities	\$-	\$50,100	\$600	\$50,700
Management of companies and enterprises	\$-	\$33,600	\$2,600	\$36,200
Insurance agencies, brokerages, and related activities	\$-	\$23,000	\$1,400	\$24,400
Wholesale - Misc. nondurable goods merchant wholesalers	\$-	\$17,600	\$4,100	\$21,700
Banks and Credit Unions	\$-	\$10,200	\$6,100	\$16,300
Hospitals	\$-	\$-	\$15,900	\$15,900
Other real estate	\$-	\$8,600	\$7,000	\$15,600
Full-service restaurants	\$-	\$4,400	\$8,700	\$13,100
Radio and television broadcasting	\$-	\$11,900	\$900	\$12,800
Retail - Nonstore retailers	\$-	\$3,300	\$9,300	\$12,600
Tenant-occupied housing	\$-	\$-	\$10,000	\$10,000
Truck transportation	\$-	\$7,500	\$1,600	\$9,100
Electric power transmission and distribution	\$-	\$6,900	\$1,400	\$8,300
All Others	\$-	\$110,900	\$148,100	\$259,000
<b>Totals</b>	<b>\$2,153,100</b>	<b>\$291,300</b>	<b>\$274,500</b>	<b>\$2,718,900</b>

**Table A.40: Jobs Supported and Wages Paid, Trinity County, 2022 Estimated Manufacturing Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Trinity County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>	<b>Wages (\$)</b>
Cannabis manufacturing	5.0	0.0	0.0	5.0	\$629,400
Full-service restaurants	0.0	0.1	0.1	0.2	\$5,000
Management of companies and enterprises	0.0	0.2	0.0	0.2	\$20,300
Insurance agencies, brokerages, and related activities	0.0	0.2	0.0	0.2	\$8,100
Cannabis Processor, Nursery, and Related Activities	0.0	0.1	0.0	0.1	\$5,200
Limited-service restaurants	0.0	0.0	0.1	0.1	\$2,800
Individual and family services	0.0	0.0	0.1	0.1	\$2,400
Hospitals	0.0	0.0	0.1	0.1	\$11,000
Wholesale - Misc. nondurable goods merchant wholesalers	0.0	0.1	0.0	0.1	\$3,800
Employment services	0.0	0.0	0.0	0.1	\$5,000
Retail - Food and beverage stores	0.0	0.0	0.1	0.1	\$4,100
All other food and drinking places	0.0	0.0	0.1	0.1	\$3,400
Services to buildings	0.0	0.1	0.0	0.1	\$1,800
Other local government enterprises	0.0	0.1	0.1	0.2	\$15,300
Religious organizations	0.0	0.0	0.1	0.1	\$1,900
All Others	0.0	0.7	1.0	1.7	\$188,700
<b>Totals</b>	<b>5.0</b>	<b>1.6</b>	<b>1.8</b>	<b>8.4</b>	<b>\$908,200</b>

**Table A.41: State and Local Taxes Paid, Trinity County, 2022 Estimated Manufacturing Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$6,700
Personal Income Tax	\$7,200
Sales Taxes	\$6,700
Property Taxes	\$7,500
Social Insurance Tax: Employee	\$600
Social Insurance Tax: Employer	\$700
Cannabis Taxes	\$-
Other Taxes and Fees	\$149,900
<b>State and Local Totals</b>	<b>\$179,300</b>
<b>Federal Totals</b>	<b>\$58,300</b>

## Distribution Algorithms

Distribution licenses are not as widely held as cultivation, but these counties have more distribution licenses than manufacturing. Because distribution ships are high value to weight cargo, extra security is necessary, and in 2023, these firms are collecting the 15 percent excise tax based on retail sales. These algorithms provide ways to measure how the growth of these businesses affects these county economies.

**Table A.42: Algorithm: For Every \$1,000,000 of cannabis distribution value-added income, the listed county creates**

Category	Del Norte	Humboldt	Lake	Mendocino	Sonoma	Trinity
Value Added for all County Employers (\$)	\$1,174,200	\$1,248,700	\$1,156,800	\$1,189,900	\$1,275,700	\$1,091,000
Jobs Supported in County (Workers)	14.2	28.1	21.9	15.1	24.4	21.7
State and Local Taxes (\$)	\$117,400	\$101,000	\$97,800	\$136,000	\$68,600	\$199,700

### Del Norte County: Distribution

**Table A.43: Value-Added Impact, Del Norte County, 2022 Estimated Distribution Revenue, Current Dollars, Top 15 Industries in Del Norte County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	\$350,600	\$1,200	\$-	\$351,800
Owner-occupied dwellings	\$-	\$-	\$10,400	\$10,400
Other local government enterprises	\$-	\$4,200	\$700	\$4,900
Support activities for transportation (Security)	\$-	\$4,600	\$-	\$4,600
Retail - Nonstore retailers	\$-	\$1,300	\$2,400	\$3,700
All other food and drinking places	\$-	\$2,400	\$500	\$2,900
Hospitals	\$-	\$-	\$2,900	\$2,900
Retail - Gasoline stores	\$-	\$1,700	\$500	\$2,200
Other real estate	\$-	\$1,800	\$500	\$2,300
Postal service	\$-	\$2,100	\$100	\$2,200
Employment services	\$-	\$1,800	\$100	\$1,900
Wholesale - Machinery, equipment, and supplies	\$-	\$1,300	\$-	\$1,300
Wholesale - Motor vehicle and motor vehicle parts and supplies	\$-	\$1,200	\$100	\$1,300
Retail - General merchandise stores	\$-	\$100	\$1,000	\$1,100
Retail - Food and beverage stores	\$-	\$100	\$1,000	\$1,100
All Others	\$-	\$4,400	\$14,100	\$18,500
<b>Totals</b>	<b>\$350,600</b>	<b>\$28,200</b>	<b>\$34,300</b>	<b>\$413,100</b>

**Table A.44: Jobs Supported and Wages Paid, Del Norte County, 2022 Estimated Distribution Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Del Norte County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>	<b>Wages (\$)</b>
Cannabis Distribution	4.54	0.02	-	4.56	\$154,500
Other local government enterprises	-	0.07	0.01	0.08	\$6,600
Support activities for transportation (Security)	-	0.06	-	0.06	\$4,900
All other food and drinking places	-	0.03	0.01	0.04	\$1,800
Postal service	-	0.02	-	0.02	\$300
Employment services	-	0.02	-	0.02	\$500
Individual and family services	-	-	0.02	0.02	\$1,300
Limited-service restaurants	-	-	0.02	0.02	\$2,200
Full-service restaurants	-	-	0.02	0.02	\$500
Hospitals	-	-	0.02	0.02	\$500
Retail - Gasoline stores	-	0.01	-	0.01	\$300
Retail - General merchandise stores	-	-	0.01	0.01	\$300
Retail - Food and beverage stores	-	-	0.01	0.01	\$2,100
Nursing and community care facilities	-	-	0.01	0.01	\$100
Retail - Nonstore retailers	-	-	0.01	0.01	\$400
All Others	-	0.05	0.10	0.15	\$9,900
<b>Totals</b>	<b>4.54</b>	<b>0.28</b>	<b>0.24</b>	<b>5.06</b>	<b>\$186,200</b>

**Table A.45: State and Local Taxes Paid, Del Norte County, 2022 Estimated Distribution Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$6,200
Personal Income Tax	\$15,000
Sales Taxes	\$10,100
Property Taxes	\$6,100
Social Insurance Tax: Employee	\$1,100
Social Insurance Tax: Employer	\$1,300
Cannabis Taxes	\$-
Other Taxes and Fees	\$1,500
<b>State and Local Totals</b>	<b>\$41,300</b>
<b>Federal Totals</b>	<b>\$9,500</b>



## Humboldt County: Distribution

**Table A.46: Value-Added Impact, Humboldt County, 2022 Estimated Distribution Revenue, Current Dollars, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	\$5,417,900	\$38,600	\$4,400	\$5,460,900
Owner-occupied dwellings	\$-	\$-	\$200,000	\$200,000
Wholesale - Petroleum and petroleum products	\$-	\$61,100	\$12,100	\$73,200
Hospitals	\$-	\$-	\$66,400	\$66,400
Support activities for transportation (Security)	\$-	\$59,900	\$1,700	\$61,600
Retail - Nonstore retailers	\$-	\$11,400	\$41,400	\$52,800
All other food and drinking places	\$-	\$29,800	\$13,700	\$43,500
Other real estate	\$-	\$22,300	\$20,200	\$42,500
Banks and Credit Unions	\$-	\$8,700	\$27,000	\$35,700
Tenant-occupied housing	\$-	\$-	\$34,300	\$34,300
Employment services	\$-	\$27,100	\$4,900	\$32,000
Other local government enterprises	\$-	\$21,400	\$9,200	\$30,600
Full-service restaurants	\$-	\$1,800	\$28,000	\$29,800
Offices of physicians	\$-	\$-	\$28,700	\$28,700
Limited-service restaurants	\$-	\$700	\$27,000	\$27,700
All Others	\$-	\$167,900	\$431,400	\$599,300
<b>Totals</b>	<b>\$5,417,900</b>	<b>\$450,700</b>	<b>\$950,400</b>	<b>\$6,819,000</b>

**Table A.47: Jobs Supported and Wages Paid, Humboldt County, 2022 Estimated Distribution Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Distribution	138.5	1.0	0.1	139.6	\$2,388,300
Employment services	-	0.6	0.3	0.9	\$27,200
Transportation for People	-	0.7	0.1	0.8	\$14,500
All other food and drinking places	-	0.7	-	0.7	\$38,500
Other local government enterprises	-	-	0.6	0.6	\$16,200
Other real estate	-	-	0.5	0.5	\$14,200
Full-service restaurants	-	0.4	0.2	0.6	\$41,800
Postal service	-	-	0.5	0.5	\$11,800
Limited-service restaurants	-	-	0.5	0.5	\$55,800
Truck transportation	-	0.2	0.2	0.4	\$5,200
Individual and family services	-	0.2	-	0.2	\$8,600
Hospitals	-	0.2	0.1	0.3	\$8,800
Management of companies and enterprises	-	-	0.3	0.3	\$14,700
Rentals for Households	-	-	0.3	0.3	\$11,500
Retail - Food and beverage stores	-	0.1	0.2	0.3	\$5,500
All Others	-	1.5	5.2	6.7	\$310,700
<b>Totals</b>	<b>138.5</b>	<b>5.6</b>	<b>9.1</b>	<b>153.2</b>	<b>\$2,973,300</b>

**Table A.48: State and Local Taxes Paid, Humboldt County, 2022 Estimated Distribution Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$131,900
Personal Income Tax	\$128,700
Sales Taxes*	\$179,800
Property Taxes	\$72,600
Social Insurance Tax: Employee	\$8,400
Social Insurance Tax: Employer	\$8,600
Cannabis Taxes**	\$-
Other Taxes and Fees	\$21,700
<b>State and Local Totals</b>	<b>\$551,700</b>
<b>Federal Totals</b>	<b>\$900,900</b>

### **Lake County: Distribution**

**Table A.49: Value-Added Impact, Lake County, 2022 Estimated Distribution Revenue, Current Dollars, Top 15 Industries in Lake County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis Distribution	\$711,200	\$4,400	\$500	\$716,100
Owner-occupied dwellings	\$-	\$-	\$23,100	\$23,100
Hospitals	\$-	\$-	\$8,300	\$8,300
Wholesale - Petroleum and petroleum products	\$-	\$6,200	\$1,200	\$7,400
Retail - Nonstore retailers	\$-	\$1,000	\$4,100	\$5,100
Other local government enterprises	\$-	\$3,700	\$1,300	\$5,000
Support activities for transportation (Security)	\$-	\$4,000	\$100	\$4,100
Retail - Gasoline stores	\$-	\$1,600	\$1,100	\$2,700
Retail - Food and beverage stores	\$-	\$100	\$2,300	\$2,400
All other food and drinking places	\$-	\$1,600	\$700	\$2,300
Outpatient care centers	\$-	\$-	\$2,300	\$2,300
Postal service	\$-	\$2,000	\$300	\$2,300
Other real estate	\$-	\$1,200	\$900	\$2,100
Truck transportation	\$-	\$1,100	\$1,000	\$2,100
Limited-service restaurants	\$-	\$-	\$2,000	\$2,000
All Others	\$-	\$10,200	\$30,900	\$41,100
<b>Totals</b>	<b>\$711,200</b>	<b>\$37,100</b>	<b>\$80,100</b>	<b>\$828,400</b>

**Table A.50: Jobs Supported and Wages Paid, Lake County, 2022 Estimated Distribution Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Lake County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>	<b>Wages (\$)</b>
Cannabis Distribution	14.48	0.09	0.01	14.58	\$316,000
Other local government enterprises	-	0.07	0.02	0.09	\$7,000
Hospitals	-	-	0.06	0.06	\$7,000
Individual and family services	-	-	0.06	0.06	\$1,400
Employment services	-	0.05	0.01	0.06	\$1,000
Support activities for transportation (Security)	-	0.05	-	0.05	\$2,500
Other real estate	-	0.03	0.02	0.05	\$400
All other food and drinking places	-	0.03	0.01	0.04	\$1,500
Limited-service restaurants	-	-	0.04	0.04	\$1,100
Retail - Food and beverage stores	-	-	0.03	0.03	\$1,300
Full-service restaurants	-	-	0.03	0.03	\$800
Retail - Nonstore retailers	-	0.01	0.02	0.03	\$500
Postal service	-	0.02	-	0.02	\$2,200
Consumer goods rental (furniture and appliances)	-	0.02	-	0.02	\$700
Automotive repair and maintenance	-	-	0.02	0.02	\$600
All Others	-	0.10	0.40	0.50	\$18,500
<b>Totals</b>	<b>14.48</b>	<b>0.47</b>	<b>0.73</b>	<b>15.68</b>	<b>\$362,500</b>

**Table A.51: State and Local Taxes Paid, Lake County, 2022 Estimated Distribution Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$17,700
Personal Income Tax	\$12,700
Sales Taxes	\$11,200
Property Taxes	\$9,700
Social Insurance Tax: Employee	\$1,000
Social Insurance Tax: Employer	\$1,000
Cannabis Taxes	\$13,500
Other Taxes and Fees	\$3,200
<b>State and Local Totals</b>	<b>\$70,000</b>
<b>Federal Totals</b>	<b>\$108,100</b>

## Mendocino County: Distribution

**Table A.52: Value-Added Impact, Mendocino County, 2022 Estimated Distribution Revenue, Current Dollars, Top 15 Industries in Mendocino County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	\$3,809,600	\$19,400	\$3,300	\$3,832,300
Owner-occupied dwellings	\$-	\$-	\$120,300	\$120,300
Support activities for transportation (Security)	\$-	\$50,300	\$1,600	\$51,900
Hospitals	\$-	\$-	\$45,900	\$45,900
Tenant-occupied housing	\$-	\$-	\$32,700	\$32,700
Wholesale - Petroleum and petroleum products	\$-	\$21,900	\$6,600	\$28,500
Retail - Nonstore retailers	\$-	\$4,000	\$24,400	\$28,400
Full-service restaurants	\$-	\$700	\$20,500	\$21,200
Other real estate	\$-	\$8,400	\$12,400	\$20,800
Banks and Credit Unions	\$-	\$2,900	\$17,300	\$20,200
Limited-service restaurants	\$-	\$300	\$18,800	\$19,100
All other food and drinking places	\$-	\$10,100	\$7,400	\$17,500
Retail - Food and beverage stores	\$-	\$300	\$13,200	\$13,500
Retail - Gasoline stores	\$-	\$6,200	\$6,300	\$12,500
Retail - General merchandise stores	\$-	\$400	\$12,000	\$12,400
All Others	\$-	\$60,600	\$222,200	\$282,800
<b>Totals</b>	<b>\$3,809,600</b>	<b>\$185,500</b>	<b>\$564,900</b>	<b>\$4,560,000</b>

**Table A.53: Jobs Supported and Wages Paid, Mendocino County, 2022 Estimated Distribution Revenue Number of Full-Time Equivalent Workers, Top 15 Industries in Mendocino County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Distribution	51.1	0.3	0	51.4	\$1,698,100
Support activities for transportation (Security)	-	0.5	0	0.49	\$25,000
Hospitals	-	-	0.4	0.38	\$38,600
Full-service restaurants	-	0	0.3	0.33	\$10,600
Limited-service restaurants	-	-	0.3	0.30	\$9,100
All other food and drinking places	-	0.2	0.1	0.29	\$10,200
Other real estate	-	0.1	0.2	0.28	\$3,100
Individual and family services	-	-	0.3	0.27	\$7,300
Retail - Food and beverage stores	-	-	0.2	0.16	\$7,300
Retail - Nonstore retailers	-	0	0.1	0.14	\$2,900
Other local government enterprises	-	0.1	0.1	0.13	\$11,400
Automotive repair and maintenance	-	0	0.02	0.02	\$100
Outpatient care centers	-	-	0.01	0.01	\$8,600
Retail - General merchandise stores	-	-	0.01	0.01	\$6,200
Religious organizations	-	-	0.01	0.01	\$6,200
All Others	-	0.6	2.8	3.4	\$131,400
<b>Totals</b>	<b>51.06</b>	<b>1.72</b>	<b>4.80</b>	<b>57.58</b>	<b>\$1,976,100</b>

**Table A.54: State and Local Taxes Paid, Mendocino County, Current Dollars, 2022**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$89,900
Personal Income Tax	\$80,700
Sales Taxes	\$71,100
Property Taxes	\$48,600
Social Insurance Tax: Employee	\$5,600
Social Insurance Tax: Employer	\$5,700
Cannabis Taxes	\$207,500
Other Taxes and Fees	\$12,100
<b>State and Local Totals</b>	<b>\$521,200</b>
<b>Federal Totals</b>	<b>\$609,900</b>

**Sonoma County: Distribution****Table A.55: Value-Added Impact, Sonoma County, 2022 Estimated Distribution Revenue, Current Dollars, Top 15 Industries in Sonoma County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis Distribution	\$4,599,200	\$27,800	\$3,300	\$4,630,300
Owner-occupied dwellings	\$-	\$-	\$167,900	\$167,900
Employment services	\$-	\$53,300	\$10,100	\$63,400
Wholesale - Petroleum and petroleum products	\$-	\$44,100	\$8,700	\$52,800
Other real estate	\$-	\$24,700	\$22,700	\$47,400
Other local government enterprises	\$-	\$34,600	\$12,000	\$46,600
Support activities for transportation (Security)	\$-	\$43,400	\$1,100	\$44,500
Hospitals	\$-	\$-	\$41,500	\$41,500
Tenant-occupied housing	\$-	\$-	\$32,400	\$32,400
Full-service restaurants	\$-	\$1,900	\$27,600	\$29,500
All other food and drinking places	\$-	\$19,300	\$10,100	\$29,400
Retail - Nonstore retailers	\$-	\$6,000	\$23,300	\$29,300
Management of companies and enterprises	\$-	\$19,800	\$9,100	\$28,900
Banks and Credit Unions	\$-	\$7,100	\$20,200	\$27,300
Offices of physicians	\$-	\$-	\$21,700	\$21,700
All Others	\$-	\$183,800	\$430,400	\$614,200
<b>Totals</b>	<b>\$4,599,200</b>	<b>\$465,800</b>	<b>\$842,100</b>	<b>\$5,907,100</b>

**Table A.56: Jobs Supported and Wages Paid, Sonoma County, 2022 Estimated Distribution Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Sonoma County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Distribution	101.3	0.6	0.1	102.0	\$2,032,500
Employment services	-	0.8	0.1	0.9	\$38,800
Support activities for transportation (Security)	-	0.6	-	0.6	\$35,100
All other food and drinking places	-	0.4	0.2	0.6	\$18,800
Full-service restaurants	-	-	0.5	0.5	\$17,200
Other real estate	-	0.2	0.2	0.4	\$5,700
Individual and family services	-	-	0.4	0.4	\$9,900
Other local government enterprises	-	0.3	0.1	0.4	\$45,200
Limited-service restaurants	-	-	0.3	0.3	\$10,300
Hospitals	-	-	0.3	0.3	\$35,000
Retail - Food and beverage stores	-	-	0.2	0.2	\$9,700
Retail - Nonstore retailers	-	-	0.1	0.1	\$2,900
Offices of physicians	-	-	0.2	0.2	\$20,100
Religious organizations	-	-	0.2	0.2	\$9,800
Personal care services	-	-	0.2	0.2	\$2,000
All Others	-	1.5	4.3	5.8	\$330,300
<b>Totals</b>	<b>101.3</b>	<b>4.4</b>	<b>7.3</b>	<b>113.0</b>	<b>\$2,623,300</b>

**Table A.57: State and Local Taxes Paid, Sonoma County, 2022 Estimated Distribution Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$89,900
Personal Income Tax	\$80,700
Sales Taxes	\$71,100
Property Taxes	\$48,600
Social Insurance Tax: Employee	\$5,600
Social Insurance Tax: Employer	\$5,700
Cannabis Taxes	\$4,000
Other Taxes and Fees	\$12,100
<b>State and Local Totals</b>	<b>\$317,700</b>
<b>Federal Totals</b>	<b>\$754,900</b>

## Trinity County: Distribution

**Table A.58: Value-Added Impact, Trinity County, 2022 Estimated Distribution Revenue, Current Dollars, Top 15 Industries in Trinity County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Distribution	\$203,200	\$1,000	\$100	\$204,300
Management of companies and enterprises	\$-	\$-	\$5,100	\$5,100
Owner-occupied dwellings	\$-	\$-	\$1,600	\$1,600
Other local government enterprises	\$-	\$1,300	\$-	\$1,300
Other real estate	\$-	\$300	\$800	\$1,100
Marketing research and all other miscellaneous professional, scientific, and technical services	\$-	\$600	\$200	\$800
Employment services	\$-	\$400	\$200	\$600
Electric power transmission and distribution	\$-	\$500	\$-	\$500
Limited-service restaurants	\$-	\$-	\$500	\$500
Other support services	\$-	\$-	\$400	\$400
Wholesale - Machinery, equipment, and supplies	\$-	\$200	\$200	\$400
Hospitals	\$-	\$200	\$100	\$300
Wireless telecommunications carriers (except satellite)	\$-	\$-	\$300	\$300
Truck transportation	\$-	\$100	\$200	\$300
Full-service restaurants	\$-	\$200	\$100	\$300
All Others	\$-	\$1,100	\$4,000	\$5,100
<b>Totals</b>	<b>\$203,200</b>	<b>\$5,900</b>	<b>\$13,800</b>	<b>\$222,900</b>

**Table A.59: Jobs Supported and Wages Paid, Trinity County, 2022 Estimated Distribution Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Trinity County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Distribution	4.13	0.02	-	4.15	\$91,000
Management of companies and enterprises	-	0.02	0.01	0.03	\$500
Employment services	-	0.02	-	0.02	\$900
Full-service restaurants	-	-	0.02	0.02	\$1,300
Limited-service restaurants	-	-	0.01	0.01	\$200
Individual and family services	-	0.01	-	0.01	\$-
Other real estate	-	-	0.01	0.01	\$100
Other local government enterprises	-	-	0.01	0.01	\$200
Securities/commodity contracts intermediation and brokerage	-	-	0.01	0.01	\$300
Other support services	-	0.01	-	0.01	\$600
Accounting, tax preparation, and payroll services	-	-	0.01	0.01	\$100
Retail - General merchandise stores	-	-	0.01	0.01	\$100
Marketing research and all other miscellaneous professional, scientific, and technical services	-	-	0.01	0.01	\$100
Retail - Food and beverage stores	-	-	0.01	0.01	\$100
Truck transportation	-	-	0.01	0.01	\$100
All Others	-	-	0.10	0.10	\$2,300
<b>Totals</b>	<b>4.13</b>	<b>0.08</b>	<b>0.22</b>	<b>4.43</b>	<b>\$97,900</b>

**Table A.60: State and Local Taxes Paid, Trinity County, 2022 Estimated Distribution Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$8,300
Personal Income Tax	\$11,900
Sales Taxes	\$400
Property Taxes	\$100
Social Insurance Tax: Employee	\$8,000
Social Insurance Tax: Employer	\$7,000
Cannabis Taxes	\$-
Other Taxes and Fees	\$5,100
<b>State and Local Totals</b>	<b>\$40,800</b>
<b>Federal Totals</b>	<b>\$41,100</b>

### Retail Algorithms

As we see, there were no current retail license holders in 2022 for some of the study-area counties. However, the algorithm and detailed economic impact data below provide a way to consider the estimated effects of a new cannabis retailer.

**Table A.61: Algorithm: For Every \$1,000,000 of cannabis retail revenue creates**

<b>Category</b>	<b>Del Norte</b>	<b>Humboldt</b>	<b>Lake</b>	<b>Mendocino</b>	<b>Sonoma</b>	<b>Trinity</b>
<b>Value Added for County Employers (\$)</b>	\$255,400	\$284,300	\$255,100	\$282,200	\$311,900	\$229,600
<b>Jobs Supported in County (Workers)</b>	3.1	3.7	3.6	3.6	3.6	3.7
<b>State and Local Taxes (\$)</b>	\$341,800	\$298,700	\$333,700	\$346,800	\$321,300	\$305,300

### Del Norte County: Retail

**Table A.62: Value-Added Impact, Del Norte County, 2022 Estimated Retail Revenue, Current Dollars, Top 15 Industries in Del Norte County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis Retail	\$776,400	\$0	\$1,500	\$777,900
Owner-occupied dwellings	\$0	\$0	\$34,500	\$34,500
Other real estate	\$0	\$24,600	\$1,600	\$26,200
Hospitals	\$0	\$0	\$9,500	\$9,500
Retail - Nonstore retailers	\$0	\$500	\$7,700	\$8,200
Other local government enterprises	\$0	\$5,200	\$2,200	\$7,400
Full-service restaurants	\$0	\$700	\$3,000	\$3,700
Retail - General merchandise stores	\$0	\$100	\$3,200	\$3,300
Retail - Food and beverage stores	\$0	\$0	\$3,200	\$3,200
Limited-service restaurants	\$0	\$200	\$3,000	\$3,200
Postal service	\$0	\$2,500	\$300	\$2,800
Outpatient care centers	\$0	\$0	\$2,700	\$2,700
All other food and drinking places	\$0	\$1,100	\$1,600	\$2,700
Employment services	\$0	\$2,300	\$300	\$2,600
Nursing and community care facilities	\$0	\$0	\$2,500	\$2,500
All Others	\$0	\$20,200	\$36,100	\$56,300
<b>Totals</b>	<b>\$776,400</b>	<b>\$57,400</b>	<b>\$112,900</b>	<b>\$946,700</b>



**Table A.63: Jobs Supported and Wages Paid, Del Norte County, 2022 Estimated Retail Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Del Norte County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Retail	9.7	0.0	0.0	9.7	\$482,500
Other real estate		0.3	0.0	0.4	\$3,600
Other local government enterprises		0.1	0.0	0.1	\$10,000
Accounting, tax preparation, and payroll services		0.1	0.0	0.1	\$800
Individual and family services			0.1	0.1	\$1,800
Full-service restaurants		0.0	0.1	0.1	\$2,000
Limited-service restaurants		0.0	0.1	0.1	\$1,600
Hospitals			0.1	0.1	\$7,000
All other food and drinking places		0.0	0.0	0.0	\$1,700
Retail - Food and beverage stores		0.0	0.0	0.0	\$1,700
Retail - General merchandise stores		0.0	0.0	0.0	\$1,500
Nursing and community care facilities			0.0	0.0	\$2,400
Automotive repair and maintenance		0.0	0.0	0.0	\$800
Employment services		0.0	0.0	0.0	\$1,800
Retail - Nonstore retailers		0.0	0.0	0.0	\$900
All Others	0.0	0.3	0.5	0.8	\$29,300
<b>Totals</b>	<b>9.7</b>	<b>0.9</b>	<b>1.0</b>	<b>11.6</b>	<b>\$549,400</b>

**Table A.64: State and Local Taxes Paid, Del Norte County, 2022 Estimated Retail Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$8,100
Personal Income Tax	\$20,600
Sales Taxes	\$72,600
Property Taxes	\$37,200
Social Insurance Tax: Employee	\$1,500
Social Insurance Tax: Employer	\$1,600
Cannabis Taxes	\$1,117,400
Other Taxes	\$7,800
<b>Total State and Local</b>	<b>\$1,266,800</b>
<b>Total Federal</b>	<b>\$139,900</b>

## Humboldt County: Retail

**Table A.65: Value-Added Impact, Humboldt County, 2022 Estimated Retail Revenue, Current Dollars, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Retail	\$7,243,300	\$100	\$19,700	\$7,263,100
Owner-occupied dwellings	\$0	\$0	\$409,400	\$409,400
Other real estate	\$0	\$360,600	\$41,200	\$401,800
Hospitals	\$0	\$0	\$135,200	\$135,200
Banks and Credit Unions	\$0	\$38,000	\$50,600	\$88,600
Retail - Nonstore retailers	\$0	\$5,000	\$83,300	\$88,300
Full-service restaurants	\$0	\$13,200	\$57,400	\$70,600
Tenant-occupied housing	\$0	\$0	\$68,500	\$68,500
Limited-service restaurants	\$0	\$4,100	\$55,000	\$59,100
Offices of physicians	\$0	\$0	\$58,400	\$58,400
Employment services	\$0	\$42,300	\$9,900	\$52,200
Management of companies and enterprises	\$0	\$40,200	\$11,500	\$51,700
Radio and television broadcasting	\$0	\$43,300	\$8,300	\$51,600
Automotive repair and maintenance	\$0	\$12,000	\$35,800	\$47,800
All other food and drinking places	\$0	\$15,800	\$28,100	\$43,900
All Others	\$0	\$455,200	\$857,500	\$1,312,700
<b>Totals</b>	<b>\$7,243,300</b>	<b>\$1,029,800</b>	<b>\$1,929,800</b>	<b>\$10,202,900</b>

**Table A.66: Jobs Supported and Wages Paid, Humboldt County, 2022 Estimated Retail Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Humboldt County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Retail	101.7	0.0	0.3	102.0	\$4,294,200
Other real estate		3.8	0.4	4.2	\$48,900
Full-service restaurants		0.3	1.2	1.5	\$38,500
Employment services		1.1	0.3	1.4	\$23,700
Limited-service restaurants		0.1	1.1	1.2	\$30,300
Individual and family services			1.0	1.0	\$24,300
Hospitals			1.0	1.0	\$113,700
All other food and drinking places		0.3	0.6	0.9	\$27,500
Couriers and messengers		0.5	0.2	0.8	\$13,200
Other local government enterprises		0.4	0.3	0.7	\$54,800
Religious organizations			0.6	0.6	\$30,100
Management of companies and enterprises		0.4	0.1	0.6	\$43,600
Retail - Food and beverage stores		0.0	0.5	0.6	\$22,800
Automotive repair and maintenance		0.1	0.4	0.5	\$21,400
Services to buildings		0.4	0.1	0.5	\$9,600
All Others	0.0	5.4	10.6	16.0	\$676,300
<b>Totals</b>	<b>101.7</b>	<b>12.9</b>	<b>18.7</b>	<b>133.3</b>	<b>\$5,472,900</b>

**Table A.67: State and Local Taxes Paid, Humboldt County, 2022 Estimated Retail Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$82,700
Personal Income Tax	\$267,100
Sales Taxes	\$890,600
Property Taxes	\$355,900
Social Insurance Tax: Employee	\$15,100
Social Insurance Tax: Employer	\$15,500
Cannabis Taxes	\$8,994,700
Other Taxes	\$98,700
<b>Total State and Local</b>	<b>\$10,720,300</b>
<b>Total Federal</b>	<b>\$1,664,000</b>

### **Lake County: Retail**

**Table A.68: Value-Added Impact, Lake County, 2022 Estimated Retail Revenue, Current Dollars, Top 15 Industries in Lake County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis Retail	\$1,525,900	\$0	\$2,400	\$1,528,300
Owner-occupied dwellings	\$0	\$0	\$76,600	\$76,600
Other real estate	\$0	\$43,100	\$2,900	\$46,000
Hospitals	\$0	\$0	\$27,200	\$27,200
Other local government enterprises	\$0	\$11,100	\$4,200	\$15,300
Retail - Nonstore retailers	\$0	\$900	\$13,300	\$14,200
Electric power transmission and distribution	\$0	\$10,600	\$2,800	\$13,400
Electric power generation - Geothermal	\$0	\$8,400	\$2,200	\$10,600
Radio and television broadcasting	\$0	\$8,200	\$1,200	\$9,400
Outpatient care centers	\$0	\$0	\$7,600	\$7,600
Retail - Food and beverage stores	\$0	\$0	\$7,600	\$7,600
Management of companies and enterprises	\$0	\$6,500	\$1,000	\$7,500
Limited-service restaurants	\$0	\$600	\$6,500	\$7,100
Truck transportation	\$0	\$3,900	\$3,200	\$7,100
Automotive repair and maintenance	\$0	\$2,000	\$5,000	\$7,000
All Others	\$0	\$69,800	\$99,500	\$169,300
<b>Totals</b>	<b>\$1,525,900</b>	<b>\$165,100</b>	<b>\$263,200</b>	<b>\$1,954,200</b>

**Table A.69: Jobs Supported and Wages Paid, Lake County, 2022 Estimated Retail Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Lake County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>	<b>Wages (\$)</b>
Cannabis Retail	22.3	0.0	0.0	22.4	\$893,900
Other real estate		1.0	0.1	1.1	\$8,000
Other local government enterprises		0.2	0.1	0.3	\$21,500
Hospitals			0.2	0.2	\$22,900
Individual and family services			0.2	0.2	\$4,800
Employment services		0.2	0.0	0.2	\$3,300
Services to buildings		0.1	0.0	0.1	\$2,700
Limited-service restaurants		0.0	0.1	0.1	\$3,900
Couriers and messengers		0.1	0.0	0.1	\$2,800
Full-service restaurants		0.0	0.1	0.1	\$3,200
Retail - Food and beverage stores		0.0	0.1	0.1	\$4,200
Automotive repair and maintenance		0.0	0.1	0.1	\$2,600
Management consulting services		0.1	0.0	0.1	\$2,100
Retail - Nonstore retailers		0.0	0.1	0.1	\$1,500
All other food and drinking places		0.0	0.0	0.1	\$2,800
All Others	0.0	0.8	1.3	2.1	\$84,400
<b>Totals</b>	<b>22.3</b>	<b>2.6</b>	<b>2.5</b>	<b>27.4</b>	<b>\$1,064,600</b>

**Table A.70: State and Local Taxes Paid, Lake County, 2022 Estimated Retail Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$16,600
Personal Income Tax	\$42,700
Sales Taxes	\$130,800
Property Taxes	\$111,500
Social Insurance Tax: Employee	\$2,900
Social Insurance Tax: Employer	\$3,000
Cannabis Taxes	\$2,214,900
Other Taxes	\$34,300
<b>Total State and Local</b>	<b>\$2,556,700</b>
<b>Total Federal</b>	<b>\$311,000</b>

## Mendocino County: Retail

**Table A.71: Value-Added Impact, Mendocino County, 2022 Estimated Retail Revenue, Current Dollars, Top 15 Industries in Mendocino County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Retail	\$4,616,000	\$-	\$10,000	\$4,626,000
Other real estate	\$-	\$236,700	\$24,200	\$260,900
Owner-occupied dwellings	\$-	\$-	\$237,500	\$237,500
Hospitals	\$-	\$-	\$89,800	\$89,800
Tenant-occupied housing	\$-	\$-	\$62,400	\$62,400
Banks and Credit Unions	\$-	\$27,400	\$31,100	\$58,500
Full-service restaurants	\$-	\$11,200	\$40,500	\$51,700
Retail - Nonstore retailers	\$-	\$3,000	\$47,200	\$50,200
Limited-service restaurants	\$-	\$3,300	\$36,700	\$40,000
Management of companies and enterprises	\$-	\$25,200	\$6,400	\$31,600
Automotive repair and maintenance	\$-	\$7,100	\$20,100	\$27,200
Retail - Food and beverage stores	\$-	\$100	\$26,100	\$26,200
Retail - General merchandise stores	\$-	\$900	\$23,500	\$24,400
Couriers and messengers	\$-	\$17,200	\$6,600	\$23,800
All other food and drinking places	\$-	\$8,800	\$14,600	\$23,400
All Others	\$-	\$308,100	\$427,100	\$735,200
<b>Totals</b>	<b>\$4,616,000</b>	<b>\$649,000</b>	<b>\$1,103,800</b>	<b>\$6,368,800</b>

**Table A.72: Jobs Supported and Wages Paid, Mendocino County, 2022 Estimated Retail Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Mendocino County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Retail	62.1	0.0	0.1	62.3	\$2,624,400
Other real estate		3.2	0.3	3.5	\$38,700
Full-service restaurants		0.2	0.6	0.8	\$26,000
Hospitals			0.7	0.7	\$75,500
Limited-service restaurants		0.1	0.6	0.6	\$19,100
Individual and family services			0.5	0.5	\$14,500
Services to buildings		0.4	0.1	0.4	\$10,400
All other food and drinking places		0.1	0.2	0.4	\$13,700
Accounting, tax preparation, and payroll services		0.3	0.1	0.4	\$7,500
Warehousing and storage		0.3	0.0	0.4	\$16,200
Couriers and messengers		0.2	0.1	0.3	\$10,500
Retail - Food and beverage stores		0.0	0.3	0.3	\$14,200
Automotive repair and maintenance		0.1	0.2	0.3	\$11,300
Legal services		0.2	0.1	0.3	\$6,700
Religious organizations			0.3	0.3	\$12,300
All Others	0.0	3.3	5.9	9.3	\$369,500
<b>Totals</b>	<b>62.1</b>	<b>8.3</b>	<b>10.3</b>	<b>80.8</b>	<b>\$3,270,500</b>

**Table A.73: State and Local Taxes Paid, Mendocino County, 2022 Estimated Retail Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$50,200
Personal Income Tax	\$162,700
Sales Taxes	\$457,700
Property Taxes	\$305,900
Social Insurance Tax: Employee	\$9,000
Social Insurance Tax: Employer	\$9,300
Cannabis Taxes	\$6,763,100
Other Taxes	\$69,500
<b>Total State and Local</b>	<b>\$7,827,400</b>
<b>Total Federal</b>	<b>\$1,055,600</b>

### **Sonoma County: Retail**

**Table A.74: Value-Added Impact, Sonoma County, 2022 Estimated Retail Revenue, Current Dollars, Top 15 Industries in Sonoma County**

<b>Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Totals</b>
Cannabis Retail	\$22,481,200	\$200	\$45,800	\$22,527,200
Other real estate	\$-	\$1,519,700	\$177,700	\$1,697,400
Owner-occupied dwellings	\$-	\$-	\$1,319,400	\$1,319,400
Employment services	\$-	\$340,000	\$79,200	\$419,200
Hospitals	\$-	\$-	\$323,800	\$323,800
Management of companies and enterprises	\$-	\$238,300	\$71,200	\$309,500
Full-service restaurants	\$-	\$55,200	\$217,100	\$272,300
Banks and Credit Unions	\$-	\$124,900	\$145,600	\$270,500
Tenant-occupied housing	\$-	\$-	\$247,400	\$247,400
Accounting, tax preparation, and payroll services	\$-	\$146,100	\$52,200	\$198,300
Other local government enterprises	\$-	\$99,500	\$93,000	\$192,500
Retail - Nonstore retailers	\$-	\$10,400	\$180,200	\$190,600
Legal services	\$-	\$99,800	\$80,400	\$180,200
Electric power transmission and distribution	\$-	\$131,500	\$44,900	\$176,400
Offices of physicians	\$-	\$-	\$169,800	\$169,800
All Others	\$-	\$1,969,700	\$3,319,800	\$5,289,500
<b>Totals</b>	<b>\$22,481,200</b>	<b>\$4,735,300</b>	<b>\$6,567,500</b>	<b>\$33,784,000</b>

**Table A.75: Jobs Supported and Wages Paid, Sonoma County, 2022 Estimated Retail Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Sonoma County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Retail	288.7	0.0	0.6	289.3	\$13,494,800
Other real estate		14.3	1.7	15.9	\$205,400
Employment services		4.8	1.1	6.0	\$256,300
Full-service restaurants		0.9	3.6	4.5	\$158,800
Individual and family services			3.0	3.0	\$78,200
Limited-service restaurants		0.2	2.5	2.7	\$85,100
All other food and drinking places		0.8	1.5	2.3	\$78,300
Services to buildings		1.8	0.4	2.2	\$74,900
Hospitals			1.9	1.9	\$273,400
Accounting, tax preparation, and payroll services		1.4	0.5	1.9	\$95,900
Couriers and messengers		1.3	0.6	1.9	\$37,900
Management of companies and enterprises		1.2	0.4	1.6	\$212,800
Retail - Food and beverage stores		0.0	1.6	1.6	\$74,500
Other local government enterprises		0.8	0.7	1.5	\$186,900
Offices of physicians			1.4	1.4	\$157,300
All Others	0.0	17.7	35.2	52.9	\$2,835,000
<b>Totals</b>	<b>288.7</b>	<b>45.2</b>	<b>56.7</b>	<b>390.6</b>	<b>\$18,305,500</b>

**Table A.76: State and Local Taxes Paid, Sonoma County, 2022 Estimated Retail Revenue, Current Dollars**

Tax Revenue	Amount
Corporate Income Tax	\$252,300
Personal Income Tax	\$853,300
Sales Taxes	\$1,747,600
Property Taxes	\$1,792,000
Social Insurance Tax: Employee	\$50,600
Social Insurance Tax: Employer	\$51,900
Cannabis Taxes	\$29,585,100
Other Taxes	\$468,800
<b>Total State and Local</b>	<b>\$34,801,600</b>
<b>Total Federal</b>	<b>\$5,306,300</b>

## Trinity County: Retail

As stated in the main body of the text, Trinity County had no taxable sales from a regulated retail cannabis business in 2022 (our year of focus in the estimated economic impacts). However, Tables A.76 to A.78 provide an algorithm and industry details on the economic impacts of \$1,000,000 of retail sales opening in Trinity County as a way to consider the economic impacts of such change analogous to the tables in this Appendix shown above.

**Table A.77: Value-Added Impacts, Trinity County, 2022 Estimated Retail Revenue, Current Dollars, Top 15 Industries in Trinity County**

Industry	Direct	Indirect	Induced	Totals
Cannabis Retail	\$189,500	\$-	\$200	\$189,700
Owner-occupied dwellings	\$-	\$-	\$8,800	\$8,800
Other real estate	\$-	\$4,900	\$200	\$5,100
Hospitals	\$-	\$-	\$2,600	\$2,600
Local government electric utilities	\$-	\$1,900	\$400	\$2,300
Retail - Nonstore retailers	\$-	\$100	\$1,400	\$1,500
Postal service	\$-	\$800	\$100	\$900
Retail - Food and beverage stores	\$-	\$-	\$900	\$900
Automotive repair and maintenance	\$-	\$200	\$500	\$700
All other food and drinking places	\$-	\$400	\$400	\$800
Limited-service restaurants	\$-	\$100	\$600	\$700
Couriers and messengers	\$-	\$600	\$100	\$700
Marketing research and all other miscellaneous professional, scientific, and technical services	\$-	\$500	\$-	\$500
Radio and television broadcasting	\$-	\$500	\$100	\$600
Retail - Building material and garden equipment and supplies stores	\$-	\$200	\$300	\$500
All Others	\$-	\$6,300	\$7,000	\$13,300
<b>Totals</b>	<b>\$189,500</b>	<b>\$16,500</b>	<b>\$23,600</b>	<b>\$229,600</b>

**Table A.78: Jobs Supported and Wages Paid, Trinity County, 2022 Estimated Retail Revenue, Number of Full-Time Equivalent Workers, Top 15 Industries in Trinity County**

Industry	Direct	Indirect	Induced	Totals	Wages (\$)
Cannabis Retail	3.2	0.0	0.0	3.2	\$69,800
Other real estate		0.1	0.0	0.1	\$500
Hospitals			0.0	0.0	\$2,200
Individual and family services			0.0	0.0	\$400
All other food and drinking places		0.0	0.0	0.0	\$400
Services to buildings		0.0	0.0	0.0	\$200
Limited-service restaurants		0.0	0.0	0.0	\$300
Couriers and messengers		0.0	0.0	0.0	\$300
Landscape and horticultural services		0.0	0.0	0.0	\$200
Retail - Food and beverage stores		0.0	0.0	0.0	\$500
Retail - Nonstore retailers		0.0	0.0	0.0	\$100
Management consulting services		0.0	0.0	0.0	\$200
Office administrative services		0.0	0.0	0.0	\$200
Postal service		0.0	0.0	0.0	\$900
Other support services		0.0	0.0	0.0	\$200
All Others	0.0	0.1	0.1	0.2	\$6,200
<b>Totals</b>	<b>3.2</b>	<b>0.3</b>	<b>0.2</b>	<b>3.7</b>	<b>\$82,600</b>



**Table A.79: State and Local Taxes Paid, Trinity County, 2022 Estimated Retail Revenue, Current Dollars**

<b>Tax Revenue</b>	<b>Amount</b>
Corporate Income Tax	\$1,200
Personal Income Tax	\$5,900
Sales Taxes	\$17,600
Property Taxes	\$17,600
Social Insurance Tax: Employee	\$200
Social Insurance Tax: Employer	\$200
Cannabis Taxes (est. based on hypothetical)	\$257,800
Other Taxes	\$4,800
<b>Total State and Local</b>	<b>\$305,300</b>
<b>Total Federal</b>	<b>\$35,900</b>