State of California

Department of Cannabis Control

California Code of Regulations, Title 4, Division 19

Proposed Regulation Text:

Commercial Cannabis Cultivation Updates; Minimum Sanitation Standards

INTRODUCTION

The Department of Cannabis Control ("Department" or "DCC") is responsible for administering and enforcing the provisions of the Medicinal and Adult-Use Cannabis Regulation and Safety Act ("MAUCRSA," Bus. & Prof. Code § 26000 et seq.). The Department was created in 2021 through the consolidation of the three former commercial cannabis licensing agencies: the Bureau of Cannabis Control under the Department of Consumer Affairs, the Manufactured Cannabis Safety Branch under the California Department of Public Health, and CalCannabis under the California Department of Food and Agriculture ("CDFA"). One of DCC's first actions was to consolidate the three former agencies' existing regulations into one body of law, which was established in California Code of Regulations ("CCR"), title 4, division 19. The Department is proposing to modify these regulations for the reasons described below. For the reader's convenience, information provided in the Problem, Purpose, Rationale, and Benefits sections of this statement of reasons is divided between two subject matter areas: commercial cannabis cultivation updates and minimum sanitation standards.

PROBLEM STATEMENT: CULTIVATION UPDATES

Through ongoing evaluation of existing requirements, DCC has identified several aspects of the current cultivation regulations that are unclear, are unreasonably burdensome, provide unintended opportunities for inversion and diversion between the legal and illegal cannabis markets, or are out of alignment with comparable industries.

Unclear requirements can lead to inconsistent enforcement throughout the state, which is unfair and confusing for licensees. One licensee may be subject to different standards than an otherwise comparable licensee located elsewhere in the state. Licensees subjected to differing standards may unintentionally be provided a financial or competitive advantage. Additionally, the Department has determined that some existing regulatory requirements are unclear or even unnecessary because they overlap with existing regulatory authority of other state agencies, leading to confusion regarding oversight and enforcement responsibilities. DCC has identified opportunities to repeal unnecessary sections that do not add meaningful value, and has proposed these streamlining changes in this package.

Requirements that are burdensome to licensees or the Department, without providing corresponding public health, safety, or environmental benefits, result in wasted resources and can incentivize licensees to attempt to skirt the requirements.

The illegal cannabis industry continues to pose challenges for DCC and for all Californians. The illegal market harms legal cannabis operators and can cause public health, safety, and environmental threats. Any aspects of DCC regulations that can inadvertently provide the opportunity for inversion or diversion or that make it more difficult for the Department to determine whether inversion or diversion are occurring – such as not having mature plants located in a designated area or improper tracking of cannabis in the processing stages – can exacerbate the struggle against the illegal market and must be addressed.

Finally, although cannabis is more tightly controlled and regulated than other comparable industries, there are areas of the regulatory oversight of cannabis that do not necessitate enhanced requirements and should be in closer alignment with other industries.

PROBLEM STATEMENT: MINIMUM SANITATION STANDARDS

Licensees engaging in cultivation, processing, creating nonmanufactured cannabis products, or packaging cannabis and nonmanufactured cannabis products for retail sale are not subject to the rules for manufacturing practices, which include strict sanitation standards, in existing Department regulations that must be followed by manufacturing and microbusiness licensees when creating manufactured cannabis products, nor are they subject to any other minimum standard of sanitary practice. This leaves cannabis and cannabis products vulnerable to contamination and creates a potentially significant health risk to consumers.

ANTICIPATED BENEFITS: CULTIVATION UPDATES

The changes proposed in this regulatory package are anticipated to result in more consistent enforcement, reduced application and operational burdens on licensees and the Department, improved opportunities to reduce diversion and inversion, and stronger protections for public health and the environment.

Consistent enforcement benefits licensees by reducing uncertainty and creating parity between licensees located in different parts of the state. Consistency in enforcement is a critical component of a well-regulated, safe, and equitable commercial cannabis industry.

Eliminating opportunities for inversion or diversion similarly benefits the industry by reducing the economic threat to licensed cannabis businesses posed by unlicensed operators. Any reduction in business opportunities for the unlicensed market also provides public health, safety, and environmental benefits as unlicensed operators do not follow health and safety requirements designed to protect consumers and the environment.

Overall, the Department anticipates a benefit to the regulated industry from increasing consistency in enforcement, reducing opportunities for inversion and diversion, and creating better alignment with comparable non-cannabis industries. The Department further anticipates benefits to its own internal operations from reducing administrative burdens on licensees that result in a corresponding reduction in administrative workload for the Department, improving efficiency of compliance inspections, and establishing more meaningful oversight mechanisms.

ANTICIPATED BENEFITS: MINIMUM SANITATION STANDARDS

Establishing minimum sanitation standards for nonmanufactured products will reduce the potential for consumer products to become contaminated, thereby increasing the safety of products for consumers. Cannabis is regularly consumed by ill or immuno-compromised individuals, who can be particularly vulnerable to product contamination.

Establishing minimum sanitation standards will also benefit the cannabis industry by reducing the likelihood of cannabis goods failing laboratory testing due to contamination, which leads to a corresponding reduction in the need for expensive remediation and retesting of failed goods.

SPECIFIC PURPOSE OF, AND RATIONALE FOR, EACH PROPOSED AMENDMENT: CULTIVATION UPDATES

Chapter 1. All Licensees.

Article 1. Division Definitions and General Requirements.

Amend Section 15000. Definitions.

Existing subsection (m), which defines “canopy,” is amended to include mature plants used for seed production or research and development purposes. Some regulated cultivators have interpreted this definition to mean that the canopy area only includes mature plants for harvest rather than all mature plants on the premises. This apparent ambiguity results in mature plants sometimes being kept haphazardly in various locations on licensed premises, which is challenging for Department staff when attempting to ascertain what inventory is onsite and reconcile onsite plants with plants recorded in the track and trace system. This disorganization also increases the potential for diversion or inversion of cannabis to and from the illicit market, respectively. Amending this definition is necessary to resolve this ambiguity and ensure consistent inventory practices.

Existing subsection (tt), which defines “nonmanufactured cannabis products,” is amended to replace the term “cannabis” with “dried flower” and “kief”. The term “cannabis,” as defined in Business and Professions Code (BPC) section 26001(f), includes concentrates, resins, and other extracts, which are produced via additional manufacturing processes. Licensed cultivators and distributors may only produce products that include dried flower, kief, leaf, pre-roll filter tips, and paper, and are

prohibited from creating products using additional manufacturing processes. This change is necessary to clarify and distinguish “nonmanufactured cannabis products” that licensed cultivators and distributors may produce from “cannabis products” that may be produced by licensed manufacturers, which include cannabis that has undergone a process whereby the plant material has been transformed into a concentrate.

Article 2. Applications

Amend Section 15006. Premises Diagram.

Existing subsection (h)(5)(A) is amended to explicitly state that mature plants being cultivated for seed production or research and development purposes must be included in a licensee’s total canopy calculation. This change is being made to align with proposed changes to section 15000(m), which are described and explained above.

Existing subsection (h)(7)(D) is amended to align canopy area requirements for nursery licensees with the canopy area requirements for other cultivation licensees established in subsection (h)(5)(A). Nurseries are unique because they are prohibited from cultivating mature plants for harvest, yet they are allowed to possess mature plants on their licensed premises as long as the plants are used only for seed production or conducting research and development activities, such as researching the impact of various agricultural inputs (e.g., fertilizer, soil amendments, or biostimulants) or creating new genetic strains. This situation has resulted in some confusion among nursery licensees regarding how mature plants must be labeled and accounted for. Although nursery licensees do not pay license fees according to canopy size, nor are they subject to the same canopy size caps as other cultivation license types, it is necessary for the Department to know the size of a nursery’s canopy to be able to reconcile the mature cannabis plants that are onsite with the inventory indicated in the track and trace system in order to reduce the potential for inversion and diversion.

Existing subsection (h)(7)(D)(i) is renumbered to subsection (h)(7)(E) without substantive change.

Existing subsections (h)(7)(D)(ii) and (h)(7)(E) are repealed. These subsections regarding identification of seed production and research and development areas are redundant and no longer necessary given that subsection (h)(7)(D) now clearly requires identification of canopy areas, and the definition of “canopy” in section 15000(m) now clearly includes mature plants kept for seed production or research and development purposes.

Existing subsection (k) is non-substantively amended to correct a grammatical error.

Amend Section 15011. Additional Information.

Existing subsection (a)(12) is repealed. This subsection requires most cultivation license applicants to agree to contact their local County Agricultural Commissioner regarding requirements for legal use of pesticides identified in their pest management plan, and

also to comply with all pesticide laws. The Department has reevaluated these attestations and found them to be unnecessary for a number of reasons. First, any reference to a pest management plan is irrelevant because section 16310, which governs pest management plans, is being repealed in this regulatory action as described and explained below. Next, compliance with all relevant state and local pesticide laws is already required by those bodies of law and enforced by appropriate state and local entities. Not only is requiring a promise comply not a meaningful condition of licensure by the Department; it also can also mislead the reader into believing that the Department has jurisdiction over certain activities that it does not, or that there are pesticide laws exclusively related to cannabis cultivation and within the Department's power to regulate when there are not. Finally, it is misleading to include the attestations only for cultivation license applicants. All licensees – in fact, all businesses in California – are required to follow applicable pesticide laws. By only requiring cultivation applicants to attest that they will do so, this provision gives the mistaken impression that other types of licensees are not subject to pesticide laws.

Article 3. Licensing.

Amend Section 15020. Renewal of License.

Existing subsections (e) through (e)(4) are repealed. These subsections require applications for the renewal of a cultivation license to include specified information related to energy use at the cultivation facility. Licensees are required to follow all applicable laws, including environmental, energy efficiency, and air quality regulations as set forth in existing law and administered by other state and local authorities. Therefore, these subsections are duplicative of existing protections. Repealing these subsections is necessary because this information no longer needs to be gathered from cultivation licensees, as explained further below regarding the repeal of section 16305.

Article 6. Track and Trace Requirements.

Amend Section 15048.5. Use of Harvest Batch Name and Package Tags.

Existing subsection (a) is amended to clarify that harvested plants must be part of the same harvest batch in order to be assigned the same harvest batch name. Although this has generally been understood by implication for many years, considering that a "harvest batch" as defined in BPC section 26001(e)(1) consists of plants that were harvested at the same time, DCC finds it necessary to include this express language to eliminate any industry confusion and for consistency in enforcement.

Existing subsection (a) is further amended to require an identifiable boundary between harvest batches that are hanging, drying, or curing, and provide examples of acceptable boundaries. Licensees often have multiple harvest batches hanging, drying, or curing at the same time. While many licensees already voluntarily separate their harvest batches with visible gaps or demarcation of some kind, DCC inspectors working at sites without clear boundaries between batches have had difficulty determining which plants are

assigned to a particular harvest batch, and this situation provides opportunities for inversion or diversion of cannabis. Based on this field experience, DCC believes this reasonable requirement will reduce the opportunities for inversion and diversion by facilitating better inventory practices and more efficient inspections.

Existing subsection (a) is further amended to clarify a current requirement regarding harvest batch labels. The existing regulatory provision requires the name of the harvest batch to be placed within clear view of an individual standing next to the batch, which implies the need to physically label the area. The amended provision explicitly states that each area containing harvested plants must be physically labeled, which is necessary to resolve industry confusion stemming from the lack of express guidance and also ensure consistency in enforcement by DCC staff.

The last sentence of existing subsection (a) is repealed, as this requirement is repetitive of, and adds nothing to, the recordkeeping requirement in the first sentence.

Finally, subsection (a) is amended to require that if any part of the harvest batch is placed in a container, then the container must be labeled with the harvest batch name. This is necessary for Department inspectors to be able to identify plants associated with the same harvest batch and to reduce the potential for inversion or diversion.

Existing subsection (b) is amended to require licensees to assign a package tag to any harvested cannabis for which onsite processing has been completed within 24 hours of completion. The existing regulatory requirement is vague and has led to significant confusion among licensees regarding when to move cannabis material to a package tag, rather than continuing to track it by harvest batch name. The existing regulatory language also implies that only one package tag can be applied to a harvest batch, which does not reflect DCC's intent that a licensee may utilize as many package tags to track a harvest batch as are necessary. The proposed changes are necessary to resolve these ambiguities and clearly effectuate the Department's intent.

The Department determined 24 hours to be the appropriate timeframe for package tag application in order to bring this step in line with section 15049(b)(6), which requires "packaging or repackaging of cannabis or cannabis products" to "be recorded in the track and trace system within 24 hours of occurrence." Section 15049(b)(6) does include a caveat for certain cultivation licenses listed in section 15049.1(b)(5), but the latter does not make any reference to processing or packaging. Due to the existing requirement that packaging be recorded in the track and trace system within 24 hours of occurrence, it follows that the package tag assigned in the track and trace system must necessarily be attached to the physical package at the same time in order for Department or other regulatory or law enforcement personnel to be able to reconcile physical onsite inventory with inventory electronically recorded by the licensee in the track and trace system.

Existing subsection (c) is non-substantively amended for grammatical purposes and to align with changes to subsection (b) described above.

Amend Section 15049.1. Additional Requirements for Recording Cultivation Activities.

Existing subsections (b) and (b)(1) are non-substantively rewritten in active voice. Other non-substantive amendments (i.e., replacing “shall” with “must”) are made to this section for grammatical correctness. That each of the affected provisions is a mandate rather than an option or a recommendation remains unchanged.

Existing subsection (b)(2) is amended to require recording of the weight of cannabis waste associated with each cannabis batch rather than each cannabis plant. This change is necessary for consistency with section 15049(b)(1), which allows for the recording of weight by harvest batches, and to provide licensees with a more efficient and less burdensome method of recording the weight of plant material.

Chapter 5. Cannabis Events.

Amend Section 15601. Temporary Cannabis Event Requirements.

Existing subsection (c) is amended to increase the maximum allowable duration of a temporary event from four to 30 consecutive days. Currently, an individual planning to hold a temporary event for longer than four days must obtain multiple licenses. This is an administrative burden on applicants and the Department. The Department’s recent experience with temporary event licensure for retail sales and consumption of cannabis goods at the 2024 California State Fair demonstrated that the current limitation is unnecessarily restrictive, and that a longer duration is warranted. The Department considered various options and ultimately determined 30 days to be a reasonable duration that will meet the needs of both the industry and the Department. Allowing temporary events to last longer than 30 days would create a loophole that could be exploited to avoid establishing a licensed retail premises, which is contrary to the concept of a temporary event license, while limiting the duration of temporary events to a shorter period would not meaningfully relieve existing regulatory burdens.

Chapter 7. Cultivators.

Article 1. General Cultivation Requirements.

Repeal Section 16202. General Cultivation Requirements.

Subsection (a) is repealed because it is duplicative of other existing regulations. Existing section 15000.1(d), which is applicable to all commercial cannabis licensees, provides that all transfers of cannabis must be conducted by a licensed distributor. It is not necessary to repeat this requirement for cultivation licensees in section 16202.

Subsection (b) is repealed because regulatory changes made during the consolidation of the three prior sets of regulations left this subsection out of context and therefore unclear. The original requirement was limited to outdoor licensees only and was never intended to be applicable to all cultivation license types. Further, recent changes to the definition of outdoor cultivation render this provision irrelevant.

Repeal Section 16209. Medium Cultivation License Limits.

This section was rendered inoperative by its own terms on January 1, 2023. Since it no longer has any substantive effect and there is no reason to leave it printed in the CCR, it is necessary to formally repeal this section in order to have it deleted by the CCR publisher.

Article 2. Cultivation Site Requirements.

Amend Section 16300. Cultivation Requirements.

Existing subsection (a) is amended for grammatical correctness: the first sentence of the subsection has always been intended to impose a requirement to act on licensees, rather than place a prohibition against flowering on plants. Subsection (a) is further amended for brevity by replacing the list of affected license types with a simple phrase that makes the subsection applicable to all cultivation licenses, which is a non-substantive change. The second sentence of the subsection is amended to be in active voice and replace the ambiguous phrase “without delay” with a cross-reference to the relevant track and trace reporting requirements in section 15049.1.

Existing subsection (b) is repealed because it unnecessarily repeats the track and trace requirements found in existing section 15048.4.

Existing subsection (c) is renumbered to new subsection (b) and non-substantively amended for grammatical correctness and consistency in terminology used elsewhere in section 16300.

New subsection (c) allows licensed cultivators to transfer, via a licensed distributor, immature plants and seeds from their licensed cultivation premises to a licensed nursery premises. Pursuant to subsection (b), licensed cultivators may produce seeds and immature plants for their own cultivation needs, but they are prohibited from distributing those seeds and immature plants to any other licensee. This regulatory restriction was designed to maintain the integrity of the nursery license type, which would be seriously undermined if all cultivators could create and distribute seeds and immature plants for sale. However, subsection (b) simultaneously restricts the exchange of seeds and immature plants for otherwise valid purposes, such as research and development at the nursery level, which hinders genetic diversity, limits opportunities for innovative strain and cultivar developments, and results in unnecessary destruction and waste. Stakeholders have expressed concern regarding the lack of genetic diversity observed at licensed nurseries, which renders cannabis crops susceptible to diseases and pathogens that could affect cannabis production industrywide. Subsection (c) provides a very limited exception to the distribution restriction in subsection (b), which DCC believes is appropriate and necessary to address potential cannabis distribution chain issues related to immature plants and seeds and to support the genetic diversity of cannabis plants in California. Allowing licensed cultivators to transfer immature plants and seeds to licensed nurseries will provide more opportunities to share genetic

material, thereby resulting in greater genetic diversity and supply in the cannabis industry.

Existing subsection (d) is amended to explicitly state that any onsite processing must be performed in the processing areas indicated on the premises diagram submitted to the Department. Licensees are required by BPC section 26051.5(c) to provide a premises diagram to the Department that includes a description of the activity conducted in each area of the premises. This proposed regulatory action includes adoption of sanitation requirements applicable to areas in which specified activities, including processing, are conducted. It is necessary to clarify that processing can only occur in designated areas to protect public health by mitigating contamination of cultivated cannabis and facilitate more efficient Department compliance and enforcement activities. Other minor, non-substantive changes are being made for consistency within section 16300.

New subsection (e) provides that immature plants, seeds, and harvested cannabis from one licensed cultivation premises may be transferred to another cultivation premises if both cultivation licenses are held by the same licensee. Many licensees hold multiple cultivation licenses, and the Department is aware that licensed cultivators sometimes create or obtain more viable immature plants than they have room for on one of their licensed premises. Allowing cultivators to transfer immature plants and seeds to another of their premises in these circumstances will help reduce waste and limit unnecessary destruction of viable plant material.

One of the more common requests received from cultivators is for permission to share certain physical spaces, such as spaces for storage and processing, between licensed premises. Current regulations prohibit cultivation licensees from transferring any plant material to another cultivation premises: plant material can only move to a distribution premises or manufacturing premises. Having to establish a space on each premises to store harvested cannabis or process cannabis is inefficient and costly for licensees. DCC evaluated two possibilities to address this request: (1) allowing shared spaces, and (2) allowing transfers of materials between premises. DCC determined that allowing transfers of plant materials from one premises to another avoids increasing the potential for inversion or diversion. If a single licensee shared spaces between licensed premises, there would be a higher risk of commingling cannabis and recording activities incorrectly – or not at all – in the track and trace system, increasing the possibility of inversion or diversion. These risks are greatly diminished by instead allowing transfers between premises, because like all other transfers of cannabis and cannabis products, these must be recorded in the track and trace system.

The Reference note is amended to correct a citation error. BPC section 26120 addresses labeling requirements and is not relevant to this regulation. BPC section 26069, which governs track and trace system tagging, is being implemented and made specific in this action.

Amend Section 16304. General Environmental Protection Measures.

Subsection (a)(4) is repealed for consistency with the repeal of section 16306, discussed below. The three subsequent subsections are renumbered accordingly without substantive effect. BPC section 26201 is removed as a Reference citation because it is a self-executing statute requiring no regulatory implementation (see discussion of repealed section 16306 below for more information).

Repeal Section 16305. Renewable Energy Requirements.

Existing section 16305 contains renewable energy requirements for all holders of indoor, tier 2 mixed-light license types of any size, and nursery licenses using indoor or tier 2 mixed-light techniques. This section also requires the purchase of carbon offsets to cover any excess carbon emissions. This section is repealed because it inaccurately relies on the California Renewables Portfolio Standard Program in division 1, part 1, chapter 2.3, article 16 (commencing with section 399.11) of the Public Utilities Code, which applies to energy providers rather than individual operators like cannabis cultivators. It is more appropriate for DCC to address potential greenhouse gas emissions impacts on a project-by-project basis at the time of annual license application review, consistent with current practice under the California Environmental Quality Act (CEQA). During CEQA review, the Department is responsible for identifying potential greenhouse gas emissions impacts and mitigating potentially significant impacts, as appropriate. Appropriate mitigation is developed based on guidance issued by the California Air Resources Board (CARB) on greenhouse gas mitigation. Additionally, because the Department will address potential greenhouse gas emissions impacts on a project-by-project basis at the time of annual license application review and determine project-specific mitigation during that review, the Department no longer needs to collect data on greenhouse gas emissions at renewal pursuant to section 15020(e).

Repeal Section 16306. Generator Requirements.

Existing section 16306 essentially cross-references the CARB emissions standards for stationary and portable generators in title 17 of the CCR to reiterate that they apply to commercial cannabis cultivation licensees. This regulation was adopted by CDFA in 2017 as CCR, title 3, section 8306; it was renumbered without substantive amendment to CCR, title 4, section 16306 in 2021 when Assembly Bill (AB) 141 (Stats. 2021, Ch. 70) transferred authority over most commercial cannabis cultivation activities to the Department. This regulation was adopted to implement BPC section 26201, which provides:

Any standards, requirements, and regulations regarding health and safety, environmental protection, testing, security, food safety, and worker protections established by the state shall be the minimum standards for all licensees under this division statewide. A local jurisdiction may establish additional standards, requirements, and regulations.

DCC believes BPC section 26201 to be self-executing, and only in need of implementation if DCC finds existing statewide minimum standards (i.e., the "standards, requirements, and regulations" administered and enforced by other state agencies that also apply to commercial cannabis activities) to be insufficient. DCC acknowledges CARB as the expert in their field and finds no need to supplement existing CARB standards regarding diesel-powered generator emissions. DCC is instead focused on filling regulatory gaps in circumstances and areas that legally cannot be governed by existing standards; e.g., where food preparation sanitation standards established by the California Department of Public Health are inapplicable to cannabis cultivation activities because cannabis is not legally considered "food."

CDFA may have adopted section 16306 assuming that they, rather than CARB, would be the lead agency involved in the review and enforcement of cannabis cultivators' compliance with the Airborne Toxic Control Measures for stationary and portable engines. Regardless, since 2017, neither CDFA nor the Department has taken any action in this regulatory space because CARB and local air districts handle all compliance and enforcement matters governing all California businesses – including commercial cannabis cultivation licensees – subject to their respective regulations and ordinances regarding generator emissions.

Separately, because section 16306 essentially either cross-references or restates other existing laws, it has the potential to create confusion regarding which government agency has authority to oversee and enforce the requirements. This ambiguity also gives rise to a potential inconsistency with BPC section 26036, which expressly provides that nothing in DCC's statutory scheme strips other agencies of their authority to enforce their respective statutes. These risks outweigh any benefit of leaving section 16306 in place.

For all of the foregoing reasons, section 16306 is being repealed.

<u>Repeal Section 16307. Pesticide Use Requirements.</u>

Existing subsection (b) is being repealed. Existing section 16307, subsection (a), clearly requires cultivation licensees to comply with all pesticide-related laws enforced by the Department of Pesticide Regulation (DPR). This provision concisely yet comprehensively implements BPC section 26066, which requires indoor and outdoor cultivation activity to be conducted in accordance with DPR's laws as they relate to water quality, agricultural discharges, and similar matters; BPC section 26060, subdivision (f), which requires DPR to ensure compliance with various pesticide application standards; and BPC section 26060, subdivision (b), which mandates that all DCC cultivation regulations must require licensees to conduct cultivation activities in accordance with all state and local laws. Existing section 16307, subsection (b), is unnecessarily redundant and does not clarify or substantively add anything to existing subsection (a) or any relevant governing statute. Therefore, the Department finds no reason to leave subsection (b) in place.

BPC section 26201 is removed as a Reference citation because it is a self-executing statute requiring no regulatory implementation (see discussion of repealed section 16306 above for more information).

Amend Section 16309. Cultivation Plan Requirements.

Subsections (a) and (a)(3) are amended to no longer require cultivation licensees to develop or maintain a pest management plan. The pest management plan was initially intended to provide the Department with the ability to assess the licensee's planned pesticide use. However, the Department has found this use assessment to be of limited value at the application stage. Licensees frequently need to change the pesticides applied to cannabis plants as pests are eliminated or new pest threats appear. Consequently, inspectors will often find that pesticide use onsite is different than what was anticipated at the time of license application. Further, requiring licensees to continually update their pest management plans to adjust to changing conditions in the field is now recognized to be an unreasonable administrative burden imposed on licensees and the Department. As explained above regarding the repeal of section 16307(b), licensees are already responsible for compliance with applicable laws enforced by DPR, so continued enforcement of redundant pesticide use-related DCC regulations serves no meaningful purpose.

Repeal Section 16310. Pest Management Plan.

Existing section 16310 describes the contents of pest management plans required to be developed and maintained pursuant to section 16309. Since the relevant sections of section 16309 are being repealed, as described above, there is no reason to retain section 16310. This section is accordingly being repealed.

SPECIFIC PURPOSE OF, AND RATIONALE FOR, EACH PROPOSED AMENDMENT: MINIMUM SANITATION STANDARDS

Overview

Sanitation standards, whether in federal Good Manufacturing Practices (GMPs) for food, drug, and dietary supplement manufacturing; Good Agricultural Practices for produce consumed raw; or California's Sherman Food, Drug, and Cosmetic Safety Act, Retail Food Code, or cannabis GMPs are all intended to prevent contamination of consumer products with substances that can cause serious threats to human health. Because of cannabis' unique legal status, standards that are applicable to other consumer products are not necessarily applicable to the cultivation and production of commercial cannabis. In order for the Department to ensure utilization of minimum sanitary practices at licensed cannabis premises, it is necessary to establish regulatory requirements specifically applicable to commercial cannabis licensees.

There are three primary areas of concern that the Department has identified as the minimum to be addressed in this rulemaking action, either because they are commonly

observed during site inspections or are uncommonly observed but pose a significant enough health threat to require regulatory intervention. These specific requirements are intended to prevent contamination of cannabis and cannabis products by humans, animals, and tools and equipment, and are not under the purview of any other state regulatory agency.

Why minimum standards are necessary

Currently, only manufacturing and microbusiness licensees creating manufactured cannabis products are subject to GMPs designed to protect public health and safety through mitigation of contamination during the manufacturing process. Other types of cannabis goods, such as pre-rolls or packages of flower, are cultivated, distributed, packaged, and stored with no minimum sanitation standards to provide for the safety of the goods and prevent possible health and safety threats.

Cannabis is subject to contamination, like any produce or food product. Although some harvested cannabis is further processed using methods that might eradicate contamination, other batches of harvested flower are made into raw flower products that do not undergo additional processing. Cultivators do not necessarily know which plants or batches of harvested cannabis will be manufactured into cannabis products or end up in nonmanufactured products. Therefore, it is necessary to treat all harvested cannabis with equal care as to the prevention of contamination. Moreover, microbial and other contamination introduced or present during commercial production can spread to other cannabis goods, further amplifying the health and safety risks. In order to protect the safety of the supply chain, it is necessary for minimum sanitation standards to be implemented at every relevant point.

Minimum standards are based on standards applicable to agriculture

The FDA has long-standing guidance[1] (hereafter referred to as "FDA Guidance") for the agricultural industry on how to minimize microbial food safety hazards for fresh fruits and vegetables, which the Department has relied on to develop these requirements. Although cannabis is not directly comparable to produce consumed raw, there are enough similarities between the production and consumption of produce and cannabis to provide a reasonable starting point for minimum regulatory requirements.

FDA Guidance relies on basic principles of food safety within the realm of growing, harvesting, packing, and transporting fresh produce. Several of these principles are applicable to protecting cannabis from contamination during the growing, harvesting, processing, and storing of cannabis, and the creation, packaging, and storing of nonmanufactured cannabis products. The applicable principles that the Department has used in its development of these requirements are:

[1] https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-guide-minimize-microbial-food-safety-hazards-fresh-fruits-and-vegetables

- *Prevention of microbial contamination is favored over corrective action (or compliance testing) after contamination has already occurred.* Solely relying on testing to ensure that cannabis is free from contamination is insufficient for purposes of preventing microbial contamination. Microbes can infest cannabis in small enough amounts to not be detected through representative sampling, but due to their ability to reproduce, can become a more significant problem after testing. Further, not all forms of microbial contamination are included in the testing protocols. Minimization of potential contamination is the best way to reduce public health impacts.
- *Contamination can occur at any point along the commercial supply chain.* The potential for contamination to occur is present at any point when unpackaged cannabis or nonmanufactured cannabis products are handled or stored, whether that is at a cultivation, manufacturing, or distribution site. It is incumbent upon the industry to minimize the potential for cannabis contamination.
- *Worker hygiene and sanitation practices during the production, harvesting, processing, and storing of cannabis and nonmanufactured cannabis goods play a critical role in minimizing the potential for microbial contamination.* Numerous microorganisms of public health concern can be spread through unwashed hands, including *Salmonella, E. coli, Hepatitis A, Norovirus,* and *Listeria*. Of these, only *E. coli* and *Salmonella* are part of existing regulatory compliance testing requirements. In order to meaningfully protect consumer health, proper hygiene during the production process is essential. It is also important to note that regulatory compliance testing is performed on cannabis goods in final form (i.e., at the end of the commercial production chain) before going to retail sale. Microbial contamination of cannabis therefore has the potential to spread and cause illness long before the cannabis reaches the testing stage.

Minimum sanitation standards are in licensees' best interests

Contamination of cannabis, whether or not the cannabis ultimately fails regulatory compliance testing, has the potential to result in market disruptions and costs to licensees.

- Contaminated cannabis brought into a licensed premises has the potential to spread the contamination throughout the facility, which can cause the licensee to incur costs for decontamination of the facility or remediation of the cannabis to remove the contamination.
- Cannabis that fails regulatory testing due to contamination must be destroyed or remediated, both of which are actions that incur financial costs.
- Cannabis that passes regulatory compliance testing but is later found to be contaminated must be recalled, the cost of which can be significant for licensees and the Department.

- Some microbial contamination is not detrimental to human health but is devastating to cannabis plants. Implementing minimum sanitation standards that mitigate the spread of plant diseases can prevent future crop failures.
- Microbial contamination that occurs at one step in the commercial cannabis chain may be caught later by a different licensee. At that point, the licensee who discovered the contamination (or was the last owner of the cannabis before testing) is financially liable for the cost of remediation (if possible) or the loss of the product. It is unfair for licensees to bear the costs of another licensee's unsanitary practices.

Adopt Chapter 1, Article 8: Minimum Sanitation Standards

Adopt Section 15060: Animals and Animal Waste.

New subsection (a) prohibits licensees from allowing animals, except for service animals as defined by the Americans with Disabilities Act in 28 CFR part 36.104, to be in certain areas of a licensed premises. New subsection (a)(1) prohibits animals from being in any indoor area of a licensed premises, and new subsection (a)(2) prohibits animals from being in any outdoor area used for processing harvested cannabis, creating nonmanufactured cannabis products, or packaging cannabis and nonmanufactured cannabis products.

FDA Guidance identifies animal feces as a known source of pathogens that can cause foodborne illness (such as *E. coli, Listeria, Salmonella,* and *Cryptosporidium)* and generally recommends exclusion of domesticated animals and deterrence of other wildlife from access to growing fields and production areas as a Good Agricultural Practice. Animal feces poses the same threat of contamination to cannabis and cannabis products, so the Department has determined that prohibiting animals from most licensed cultivation and production areas is a reasonable measure necessary to protect public health and safety.

New subsection (a)(1) excludes animals from all indoor areas because animal waste, dander, fur, and tracked-in dirt and debris are easily spread throughout a facility where animals are present. There are no minimum sanitation standards applicable to common or shared spaces (such as hallways), nor are there requirements to implement personnel sanitation standards at the boundaries between areas with no applicable sanitation standards and areas where sanitary conditions are critical. Rather than implement more stringent standards, which could be very costly for licensees, the Department determined that a more reasonable and cost-effective method of reducing potential animal contamination is to exclude animals from indoor spaces altogether.

New subsection (a)(2) excludes animals from specified outdoor areas of a premises. These areas – for processing harvested cannabis, creating nonmanufactured cannabis products, and packaging cannabis or nonmanufactured cannabis products – are those in which sanitary conditions are critical in order to protect cannabis and nonmanufactured cannabis products from potentially hazardous contamination.

Because many outdoor and mixed-light cultivators designate a large area – often the entire property or parcel – as the licensed premises even though only a portion of the space is used for commercial cannabis activities, the Department determined that it is not practicable to require animal exclusion from the entirety of the premises. In rural locations, a significant investment in costly equipment would be necessary to prevent wild animals from wandering onto any part of the premises. However, areas specifically used for the identified activities can be more readily established as animal-free zones, an important step in reducing the possibility for contamination.

Service animals are excluded from the restrictions in subsection (a) to maintain compliance with the Americans with Disabilities Act of 1990 (42 U.S.C. §§ 12131-12134), as amended by the ADA Amendments Act of 2008 (Pub. L. 110-325, 122 Stat. 3553 (2008)), which prohibits discrimination on the basis of disability by public entities. Implementing federal regulations bar public entities from denying services and opportunities, whether directly or through licensing arrangements, to individuals with disabilities (28 CFR § 35.130(b)(1)(i)), and generally allow individuals with disabilities to be accompanied by their service animals at all times (28 CFR §§ 35.136, 36.302). The cross-reference in subsection (a) to the definition of "service animal" in the CFR is necessary both for the reader's convenience and because the status of "service animal" is specifically conferred on certain animals exclusively by the federal government and the Department has no authority to create or apply a different definition.

New subsection (b) requires that animal waste discovered anywhere on the licensed premises must be removed and disposed of immediately upon discovery. Subsection (b) expressly does not apply to manure being utilized as fertilizer. Because of the microbial contamination risks associated with animal waste, it is of paramount concern for public health that waste be disposed of before it can be tracked into areas where it becomes a source of contamination. Removing waste from the site is a very simple public health measure with very little associated cost. It is a reasonable requirement necessary for the Department to fulfill its mandate to protect public health and safety. However, this subsection is not intended to prohibit cultivators' use of manure as a fertilizing material, the lawful practice of which is governed by Food and Agricultural Code section 14501 et seq. and implementing CDFA regulations.

Adopt Section 15061: Tools, Utensils, Equipment, and Containers.

New subsection (a) identifies all licensees subject to the new sanitation requirements by capturing the activities leading to the creation of cannabis and nonmanufactured cannabis products in their final form: cultivation of cannabis, processing of cannabis, creation of nonmanufactured products, and packaging of cannabis and nonmanufactured cannabis products. Since licensees who manufacture cannabis products are already subject to minimum sanitation standards within existing GMPs, addition of this subsection ensures application and enforcement of proper sanitation standards throughout the full development cycle of cannabis and cannabis products.

New subsection (a)(1) requires cleaning and sanitizing of all tools and utensils used to

trim, harvest, or process cannabis, create nonmanufactured cannabis products, or package cannabis or nonmanufactured cannabis products for retail sale. This subsection further requires these tools and utensils to be cleaned no less frequently than daily, while they are in use, and additionally when users stop working on one harvest batch and move to another batch. Tools and utensils used to harvest and process cannabis can quickly become covered with sticky resin, which can then trap dust, dirt, and microbes. Microbes[2] of public health concern, such as *E. coli, Salmonella,* and *Listeria*, can survive on surfaces for more than 30 days. The longer that tools and utensils are used without being cleaned and sanitized, the more chances there are to spread contamination and the greater the opportunity for microbes to proliferate. Daily cleaning and sanitizing was determined to be the appropriate frequency based on field experience of Department inspectors, who observe licensed premises in various states of cleanliness and have noted that licensees who currently and voluntarily implement good sanitary practices usually clean and sanitize their tools and utensils on a daily basis. However, because the Department acknowledges that some tools and utensils may not be used each day and that cleaning and sanitizing unused tools and utensils is unnecessarily burdensome, the proposed text does not require daily cleaning and sanitizing of tools and utensils that are not in use. In addition to human health threats, tools and utensils are a known vector for the spread of hop latent viroid[3] (HLVd), a pathogen potentially devasting to cannabis plants and the cannabis industry. Cleaning tools and utensils between work on different harvest batches reduces the possibility for the viroid to spread. Finally, adoption of a non-exclusive list of tools and utensils subject to these requirements is necessary to provide licensees a clear understanding of the scope of the rule. It is impossible for the Department to adopt an exclusive list because there is no way to capture each type of tool and utensil currently used – or that may be used in the future – by all licensees, but offering no examples would only result in ambiguity and confusion in the industry. Thus, adoption of a short list of commonly used tools and utensils is the best option.

New subsection (a)(2) further requires daily cleaning and sanitizing of all equipment surfaces that contact harvested or processed cannabis, unpackaged cannabis, or unpackaged nonmanufactured cannabis goods during times when the equipment is in use. It is necessary for equipment surfaces to be cleaned and sanitized at stated intervals for all of the same reasons that it is important to clean and sanitize tools and utensils, as described above regarding the adoption of subsection (a)(1). It is also necessary to provide a non-exclusive list of equipment subject to these requirements for the same reasons described above regarding the adoption of subsection (a)(1).

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[2] https://www.mdpi.com/2076-2607/9/2/343

[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10053334/

New subsection (a)(3) requires that any container used to store or transport cannabis is cleaned and sanitized no less often than (A) between storage and transport of each harvest batch and (B) at the beginning and end of each growing season. Like tools, utensils, and other equipment surfaces, containers eventually become covered with sticky residues that can harbor pathogenic microorganisms, molds, fungi, and plant pathogens like HLVd. Cleaning and sanitizing between each harvest batch and at the beginning and end of each growing season is necessary to reduce the potential for bacteria, mold, and fungi to proliferate and spread.

New subsection (b) defines "clean" as free of visual dust, dirt, debris, cannabis residue, and food residue. This definition is modeled after provisions of the Retail Food Code (HSC §113700 et seq.). A simple, objective standard is all that is necessary to guide licensees and Department compliance and enforcement staff alike. Any residue, especially sticky residue like cannabis resin, provides an opportunity for pathogenic microorganisms to grow, and requiring basic cleaning of this residue and the other listed impurities is a necessary first step in the prevention of cannabis contamination.

New subsection (c) defines "sanitize" as any of three stated ways to apply sanitizing chemicals, and new subsections (c)(1)-(4) identify the four allowed sanitizing chemicals and their required concentrations and associated minimum time periods for use. New subsections (c) through (c)(3) are essentially copied from Health and Safety Code section 114099.6, subdivisions (b) through (b)(3), which govern sanitizing equipment and utensils used in food preparation and allow the use of sanitizing chemicals that are widely commercially available. As explained above, much of the law governing production and consumption of produce can be effectively applied to cannabis production; in this instance, there is no need for the Department to reinvent the wheel by creating a cannabis-specific definition of "sanitize" because the existing definition in California's Retail Food Code is clearly drafted and designed to accomplish the goal of preventing contamination. However, because the Health and Safety Code sanitizing methods do not extend to cannabis cultivation and production, it is necessary to expressly mandate them in this regulation. Additionally, new subsection (c)(4) is being included because research[4] has shown that isopropyl alcohol of 70% or higher grade is an effective microbial treatment, and Department inspectors have already observed licensees using isopropyl alcohol to effectively clean and sanitize their equipment. Moreover, this product is inexpensive to obtain and widely commercially available.

Adopt Section 15062: Handwashing and Glove Use.

New subsection (a) requires the same licensees described and explained above regarding the adoption of section 15061(a) to ensure that individuals engaging in the specified activities have access to either (1) a properly equipped handwashing station or (2) proper gloves. Handwashing is a universally acknowledged method of reducing transmission of pathogenic microorganisms. Unclean hands can spread diseases harmful to human health to cannabis and nonmanufactured cannabis products, creating a public health risk to consumers. This risk is especially acute for immunocompromised

[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2994051/

individuals, such as those undergoing treatment for cancer or HIV. Due to their potential to be used for medicinal purposes, it is critical that cannabis and nonmanufactured cannabis products be safe for medicinal users. It is necessary to expressly describe the required elements of a handwashing station because if any element is missing, then any handwashing performed at that station will be inadequate, public health and safety will be compromised, and the purpose of the rule will be frustrated.

While handwashing is a very effective method for reducing the potential for disease transmission, the Department acknowledges that not all cultivation sites are currently positioned to implement handwashing stations, especially those in rural areas without ready access to potable water. Therefore, the Department is proposing the wearing of single-use, food-safe, non-latex gloves in new subsection (a)(2) as an alternative to handwashing. Gloves must be single-use in order to maintain their sanitary condition. Gloves must be food-safe in order to prevent the possible contamination of cannabis and nonmanufactured cannabis products with substances unsafe for human consumption. Gloves must be non-latex due to the potential for latex to cause allergic reactions in sensitive individuals. Latex gloves are banned from use in food service in California (HSC §113973); the proposed prohibition is necessary to be in alignment with best practices for public health protection.

While new subsection (a) is about licensees' responsibility to provide access to handwashing stations or gloves, new subsection (b) is about each individual's responsibility to either (1) wash their hands or (2) don new gloves immediately before engaging in specified activities. The handwashing actions prescribed in new subsection (b)(1) are basic requirements in various rules for sanitary production of consumable products (see, e.g., 21 CFR §§111.10, 112.32; and HSC §113953.3), and are also in alignment with the United States Centers for Disease Control (CDC) recommendations[5]. Alternatively, pursuant to new subsection (b)(2), an individual may put on new, clean gloves each time they begin or resume any of the activities described. The immediacy requirement is necessary to prevent individuals from continuing to work with dirty or contaminated hands or gloves when changing tasks, returning from breaks, using the restroom, etc. It also prevents individuals from misinterpreting this policy and believing it is sufficient to simply wash their hands or don fresh gloves once at the beginning of each full workday.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDIES, REPORTS, OR DOCUMENTS

The following documents were relied on for this rulemaking process:

1. Wißmann JE, Kirchhoff L, Brüggemann Y, Todt D, Steinmann J, Steinmann E. Persistence of Pathogens on Inanimate Surfaces: A Narrative Review. *Microorganisms*. 2021; 9(2):343.

[5] https://www.cdc.gov/clean-hands/about/index.html

2. Keen JN, Austin M, Huang LS, Messing S, Wyatt JD. Efficacy of soaking in 70% isopropyl alcohol on aerobic bacterial decontamination of surgical instruments and gloves for serial mouse laparotomies. J Am Assoc Lab Anim Sci. 2010 Nov;49(6):832-7.
3. Adkar-Purushothama CR, Sano T, Perreault JP. Hop Latent Viroid: A Hidden Threat to the Cannabis Industry. Viruses. 2023 Mar 4;15(3):681.
4. US Department of Health and Human Services, Food and Drug Administration, Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables (October 1998)
5. California Department of Pesticide Regulation, Cannabis Legal Pesticide Use. (January 2021)

ECONOMIC IMPACT ASSESSMENT

The Economic Impact Assessment for this proposed action was performed by ERA Economics, LLC and is included as Attachment 1 to this statement of reasons.

CONSIDERATION OF ALTERNATIVES

Alternative 1: Require all licensees who engage in specified activities to make handwashing stations available, rather than allowing a choice between handwashing stations and glove use.

This alternative was rejected because it would be very expensive for some licensees located in very rural areas to establish and maintain satisfactory handwashing stations. Glove use offers comparable employee protection and achieves the same Department goals as handwashing (e.g., mitigation of contamination), and single-use gloves are inexpensive and readily available to licensees who determine provision of handwashing stations to be infeasible.

Alternative 2: Maintain requirements for electricity use reporting and carbon offset purchasing in section 16305.

This alternative was rejected for many reasons. The requirement to purchase carbon offsets arbitrarily applies only to cultivation licensees, and the Department has found it difficult to verify amounts of offsets purchased using the identified carbon registries. Further, carbon offsets are not universally supported as an environmental mitigation method, and a licensee's purchasing power depends to some extent on their local utility provider's greenhouse gas emission intensity, which can vary drastically and results in licensees in different areas buying different amounts of offsets despite using the same amount of electricity. The Department recognizes that it is more common and preferable for projects to impose best-management practices (e.g., incorporating on-site renewable energy production, purchasing high-efficiency equipment and appliances, etc.) than resort to purchasing carbon offsets.

ATTACHMENT 1
ECONOMIC IMPACT ASSESSMENT

Economic and Fiscal Impact Analysis

2025 Cultivation Rulemaking Action

2025-01-R

Prepared by:

ERA Economics, LLC

Prepared for:

Department of Cannabis Control

November 2024

ERA Economics

Environment • Resources • Agriculture

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1. Introduction

The Department of Cannabis Control (Department) is proposing amendments to existing regulations and adoption of additional regulations in California Code of Regulations, Title 4, Division 19. The proposed regulatory amendments include changes to several sections of the regulations affecting licensed cannabis cultivators. This rulemaking action primarily includes clarifying changes. It also includes the removal of electricity reporting and offset regulations, and adds regulations related to seed transfers and sanitation standards.

California law requires that a rulemaking agency provide an assessment of the fiscal impacts its regulations would have on state and local governments and assess the potential economic impact on state businesses and individuals. This economic and fiscal impact assessment (EFIA) describes the data, methods, and analytic approach applied to quantify the economic impacts and fiscal impacts of the proposed regulation and alternatives that the Department considered. The methods are consistent with the economic and fiscal impact analyses conducted to support prior rulemaking for cannabis cultivation regulations. This EFIA applies the data and economic frameworks from the 2016/17 SRIA and subsequent EFIAs, which have been periodically updated and were further updated under this analysis to assess impacts of the proposed regulations.

1.1 Overview of Proposed Regulations

There are several components of this proposed rulemaking action. Many of the changes are to provide clarity and/or create consistency and would not create any fiscal or economic impacts. These include:

- In Section 15000, updating the definition of "canopy" and "nonmanufactured cannabis product."
- In Sections 15006 and 15011, consistency changes related to other updated sections.
- In Section 15048.5, text clarifying how and when harvest batches are tagged and labeled.
- In Section 15049, text clarifying destruction and disposal of cannabis requirements.
- In Section 15049.1(b)(2), text to clarify weight measurement requirements for cannabis plants and waste.
- In Section 15601, text clarifying the length of time for event licenses.
- Elimination of Section 16202 (a), for consistency with other updated sections.
- Elimination of Section 16202 (b), to clarify where and when artificial lighting is permissible on licensed cannabis cultivation premises.
- Elimination of Section 16209, due to statutory defined expiration of the regulation.

- In Section 16300, clarification that cultivators are allowed to move clones, immature plants, and seeds between different premises of the same license holder.
- In Section 16301, text to clarify requirements by explicitly stating activities that are allowable and activities that are prohibited for nursery licensees.
- In Sections 16304 and 16306, deleting generator use requirements, which are redundant with requirements already specified by the California Air Resources Board and local air pollution control districts.
- In Sections 16307 and 16310, elimination of existing pesticide reporting requirements that are redundant with other state and local reporting requirements.
- In Section 16308, clarification of research and development requirements for all cultivators.
- In Section 16309, consistency changes related to other updated sections.

The salient features of the regulatory changes in the proposed rulemaking action that may affect economic (and fiscal) impacts are as follows:

- In Sections 15020 and 16305, requirements for submitting electricity reports would be removed, as would the carbon offset purchase requirements for indoor and mixed-light tier 2 cultivators.
- Addition of Sections 15060, 15061, and 15062, which introduce new regulations introducing good production practices, i.e., sanitation standards.
- In Section 16300, updating requirements to allow cultivators to transfer clones, immature plants, and seeds to nurseries.

1.2 Public Outreach and Input

The economic analysis leverages data, economic models, and information developed for prior rulemaking that has been initiated by the Department and its predecessor cultivation branch under CDFA. This includes economic data and models that were developed for a Standardized Regulatory Impact Assessment (SRIA) prepared in 2017 and have been updated for various regulations and fiscal and economic assessments developed since.

ERA Economics and the Department conducted targeted outreach in preparing this analysis. This included outreach to researchers, stakeholders, and industry experts to understand current market conditions affecting cultivators. This also included assessing the potential effect of components of the regulations on businesses and individuals (e.g., compliance time and associated costs), and discussing potential benefits. The following groups were contacted to support the development of the analysis:

- Industry professionals to review current market conditions, update cost of production information, verify industry data, and receive general feedback on industry trends, challenges, and changes.
- Researchers to discuss industry trends and feedback from other outreach/survey efforts.
- Licensed cultivators and nurseries to develop cost-of-production data and update current market information.
- Department staff to assess potential effects on short- and long-term staff level of effort to manage cultivation license changes (fiscal costs).

These data were used to develop the economic and fiscal analysis approach.

1.3 Major Regulation Determination

A Major Regulation is a proposed action, amendment, or repeal that would result in an economic impact on businesses and individuals in the State of greater than $50 million in the 12-month period following full implementation of the regulations. (Gov. Code, § 11342.548).

The total economic impact (including all direct costs, benefits, market effects, and indirect and induced effects) equals $13.51 million in the 12-month period following full implementation of the proposed regulations. This includes $4.76 million in direct benefits (cost savings) for licensed cannabis cultivators, and $3.61 million in direct costs to cultivators. Due to market effects, there is a decrease in gross revenue to outdoor cultivators of $1.98 million, a decrease of $0.49 to mixed-light cultivators, and an increase of $2.53 million to indoor cultivators. There is an increase in gross output of $67,386 for licensed cultivators due to direct impacts, a decrease in gross output of $403,139 due to indirect impacts, and an increase in gross output of $195,595 due to induced impacts.

The fiscal impacts to the Department or other state or local agencies are not expected to be substantial.

The estimated total economic impact ($13.51 million), therefore, is well below the Major Regulation threshold of $50 million.

1.4 Report Organization

The report is structured as follows. Section 2 describes the types of economic and fiscal effects attributable to the proposed regulations, and the analytic approach and data used to quantify (monetize) impacts. Section 3 provides an overview of the cannabis industry, establishing important baseline conditions used to evaluate fiscal and economic impacts of the proposed regulations. Section 4 summarizes the economic and fiscal impacts of the proposed regulations, two alternatives that the Department considered, and the basis for selecting the preferred alternative over the two alternatives.

2. Analytic Approach and Data

The analysis applies public industry data. When data were not available, judgment and reasonable assumptions based on industry outreach were applied. It is important to note that data for the cannabis industry is limited because the industry is still relatively young and there is no single source of industry statistics. Production prices, yields, and costs were developed using the methods in the 2017 SRIA and subsequent EFIAs and were updated with current industry information developed for this analysis. All prices and costs are inflation-adjusted and reported in current 2024 dollars.

2.1 Overview of Economic and Fiscal Impacts

The proposed regulations would result in quantifiable and unquantifiable (i.e., non-monetized) costs and benefits for cultivators and the Department.

Economic and fiscal impacts were quantified using a standard sequential approach:

1. **Direct economic impacts**. These represent direct costs and benefits to cultivation businesses and individuals that are attributable to the regulation and can be quantified.
2. **Market economic effects**. The direct economic costs or benefits represent a change in the cost to produce cannabis. Industry supply changes in response to direct costs or benefits to producers, which can affect the market price and quantity of cannabis produced. These market equilibrium changes affect the broader industry.
3. **Indirect and induced economic impacts**. Multiplier effects on other businesses and individuals result from the direct costs or benefits and associated changes in the equilibrium market conditions for the industry. These are assessed using a standard multiplier model, IMPLAN.
4. **Fiscal impacts**. The fiscal impact analysis follows the economic impact analysis by quantifying the fiscal cost of the regulation to the Department and other state/local agencies after accounting for the industry adjustments that are reflected in the economic impact analysis.

The economic impacts of the proposed regulations are established relative to a baseline. The baseline condition, per the California Administrative Procedure Act guidelines, is the most cost-effective set of regulatory measures that ensure full compliance with the authorizing statute or other law being implemented.[1] This ensures that the economic impacts only measure the incremental changes attributable to the regulation. In this case, the baseline condition is the no

[1] Government Code of California, Title 2, Division 3, Part 1, Chapter 3.5, Article 5, §11346.3 (e)

action alternative (i.e., absence of the proposed regulations). All economic impacts are measured relative to this baseline (no action).

2.1.1 Direct Economic Impacts

Direct impacts are costs and benefits that directly affect the businesses and individuals in the industry. In the case of the proposed regulations, these businesses would be licensed cannabis cultivators and distributors.

The potential monetizable economic impacts of the regulatory changes in this rulemaking action include:

- Benefits
    - Cost savings for cultivators who no longer need to submit electricity usage reports
    - Cost savings for cultivators who no longer need to purchase carbon offsets
    - Benefits to cultivators through potential improvements in yield and quality related to genetic improvements
    - Improved sanitations standards may reduce the risk of contamination leading to fewer failed tests or recalls and potential human health and environmental benefits
- Costs
    - Increases in administrative/management costs for cultivators (and some distributors) related to:
        - Meeting the new sanitation standards

2.1.2 Market Effects

The regulation would affect the marginal cost to produce cannabis. Producers need to receive a price at least equal to marginal cost to continue production. The industry supply is the relationship between price and quantity produced by the industry. As supply (cost) changes, market price and quantity produced are affected.

This analysis uses an economic Equilibrium Displacement Modeling (EDM) approach to estimate the potential market effects of the proposed regulations. The EDM is widely applied for evaluating the effects of changes in production costs, trade policies, advertising, taxes, and regulation of agricultural commodities. For example, it has been extensively applied to crop and livestock systems such as the dairy sector, beef production, sheep production, marketing, and research and development (Alston et al., 2006, Alston et al., 1995).

The basic EDM for the aggregate cannabis industry, which modeled both licensed and unlicensed markets, was developed for the 2017 SRIA following Muth (1964), Gardner (1988),

and Wohlgenant (1993). The EDM used in this analysis updates the original version to allow for different cost changes to outdoor, indoor, and mixed-light producers.

The market effects in this analysis can be summarized as follows:

- Cost savings for cultivators related to electricity reporting and carbon offsets would represent a decrease in the marginal cost to produce cannabis.
- Increased costs for cultivators and distributors for new sanitation standards would represent an increase in the marginal cost to produce cannabis.

These would result in a change in gross economic output.

2.1.1 Indirect and Induced Impacts

The analysis of indirect and induced impacts (so-called multiplier effects) evaluates the overall effect of changes in prices and quantities from the market analysis on jobs, taxes, and value-added across the State.

The total economic impact is expressed as the sum of direct, indirect, and induced impacts. The direct impact in this analysis is a change in primary production value (gross economic output). The indirect impact captures changes in intermediate input purchases by the primary industry from other sectors of the economy. For example, cultivators purchase inputs from local lighting supply stores and other farm supply stores. Induced impacts capture the change in expenditures of income by proprietors and employees in the primary industry and all linked industries.

This analysis uses the Impacts for Planning and Analysis (IMPLAN) v3.1 model (MIG. Inc, 2016) with a California county-level 2014 dataset as the baseline year for the analysis.[2] The IMPLAN software is an input-output economic model that estimates the effects of exogenous changes in final demand within a specified geographic region (in this case, California). The model uses a comprehensive dataset of national and regional economic accounts that document purchasing relationships between industries through multiple rounds of spending. The software also incorporates institutional demand and inter-institutional transfers that reflect purchases made by households and government agencies.

A limitation of the IMPLAN model or any input-output model is that the default IMPLAN model data does not include any businesses in the cannabis industry. Three licensed cannabis cultivation sectors, which include Indoor, Outdoor and Mixed-Light, were created for the

[2] The IMPLAN 2014 data for California counties is used for consistency with the 2016/17 SRIA and other previous economic and fiscal analyses of the cannabis industry. That data also includes the custom Cannabis sectors created for the SRIA. All values are reported in current (2023) dollars. A review of IMPLAN data from 2015 to 2022 for the industries identified to be similar to cannabis shows little variation from this 2014 data. That is, the economic multipliers in the 2014 IMPLAN database, with custom cannabis sectors, are appropriate for this impact analysis.

2016/17 SRIA using financial data from cultivator surveys and various secondary sources. These customized sectors were adjusted for inflation and indexed to current market conditions and applied to this analysis.

2.1.2 Fiscal Impacts

Fiscal impacts are changes to public agency costs and revenues associated with the regulations.

The fiscal impacts of the proposed regulations to the Department are not expected to be substantial and may include:

1. Increased efficiencies due to reduced administrative workload associated with the proposed elimination of pest management plans, extension of the temporary event time limit, and elimination of electricity reporting and carbon offset purchase verification. Any efficiencies gained will be absorbed by other application processing workload.
2. Minor cost increases related to additional consideration of sanitation standards when conducting inspections. Because the sanitation standards are not extensive, the Department expects the increased inspection time to be minimal.
3. Minor decrease in inspection workload associated with the elimination of incorporating the pest management plan into an inspection to ensure that what is on file in the plan aligns with what is happening onsite. The impact on the Department is expected to be minimal.

Overall, fiscal cost changes will be small and somewhat offset, and the net effects are expected to be minor and easily absorbed within the existing Department budget.

3. Cannabis Industry Baseline Overview

Current relevant baseline conditions for the cannabis industry were developed using cultivation license data, industry data developed for the 2017 SRIA and previous EFIAs, California Cannabis Track and Trace (CCTT) data, and other updated data developed for this analysis. This includes information from the 2023 California Cannabis Market Outlook report prepared by ERA Economics. The proposed regulatory amendments would affect cannabis cultivators. Therefore, this section focuses on the cultivation part of the licensed cannabis supply chain in California.

3.1 Cultivation Licenses

Cannabis cultivation licenses are defined in MAUCRSA, subsequent trailer bills, and existing Department regulations. This includes four categories of cultivation methods (which are alternatively referred to as technologies). These are Outdoor, Indoor, Mixed-Light Tier 1, and

Mixed-Light Tier 2[3], each with five sizes of operation: Specialty Cottage, Specialty, Small, Medium, and Large. Sizes are defined by canopy coverage, with the following current maximum canopy by license:

- Outdoor: 2,500 square feet for Specialty Cottage, 5,000 for Specialty, 10,000 for Small, and one acre for Medium. Large Outdoor licenses are for greater than 1 acre.
- Indoor: 500 square feet for Specialty Cottage, 5,000 for Specialty, 10,000 for Small, and 22,000 for Medium. Large Indoor licenses are for greater than 22,000 square feet.
- Mixed-Light, Tier 1 or 2: 2,500 square feet for Specialty Cottage, 5,000 for Specialty, 10,000 for Small, and 22,000 square feet for Medium. Large Mixed-Light licenses are for greater than 22,000 square feet.

Prior to 2023, businesses were limited to one Medium-sized license of any cultivation method.[4] Therefore, businesses would often "stack" multiple Small-sized licenses, holding multiple licenses on contiguous properties to cultivate cannabis on a larger area than any individual license allows for. After January 1, 2023, Large license types became available, allowing cultivators to hold a single license with no restrictions on the size of their operation.[5] After January 1, 2023, cultivators are no longer allowed to hold multiple provisional licenses of the same cultivation method on contiguous properties exceeding the maximum allowable Medium-sized license canopy area.[6] This effectively eliminated the ability for cultivators to continue to stack provisional licenses.

Table 1 summarizes the distribution of active cultivation licenses and license fees as of July 2024. The number of active licenses includes licenses in limited operations, i.e., licenses that are effectively inactive for the year but with the intent of becoming active again in future years. These licenses pay 20 percent of the normal annual fee for their license in years that they are in limited operations.

[3] The Mixed-Light cultivation method is separated into Tier 1, for operations using between 0 and 6 watts per square foot, and Tier 2, for operations using between 6 and 25 watts per square foot.
[4] Cal. Code Regs., tit. 4, §16209
[5] Cal. Code Regs. tit. 4 § 16201.1
[6] Bus. & Prof. Code, § 26050.2 (g) (1)

Table 1. Existing Cultivation License Summary

Cultivation Method	License Type	# Active	Annual License Fee
Indoor	Specialty Cottage	33	$1,830
	Specialty	322	$19,540
	Small	349	$35,410
	Medium	166	$77,905
	Large	3	>$77,905[a]
Outdoor	Specialty Cottage	53	$1,205
	Specialty	263	$2,410
	Small	1,578	$4,820
	Medium	606	$13,990
	Large	48	>$13,990[b]
Mixed-Light Tier 1	Specialty Cottage	57	$3,035
	Specialty	101	$5,900
	Small	679	$11,800
	Medium	69	$25,970
	Large	5	>$25,970[c]
Mixed-light Tier 2	Specialty Cottage	15	$5,200
	Specialty	38	$10,120
	Small	291	$20,235
	Medium	32	$44,517
	Large	1	>$44,517[d]
	Microbusiness	372[e]	Varies
	Nursery	301	$4,685
	Processor	143	$9,370
	Total	**5,525**	

Note: Data as of July 9, 2024. This data includes existing Large licenses but does not include conversions to Large licenses that are currently in progress. This has a negligible effect on the results of the economic analysis, it is simply described for completeness.

[a] Large Indoor annual license fees are $77,905 per 22,000 square feet plus $7,080 per additional 2,000 square feet.

[b] Large Outdoor annual license fees are $13,990 per acre plus $640 per additional 2,000 square feet.

[c] Large Mixed-Light Tier 1 annual license fees are $25,970 per 22,000 square feet plus $2,360 per additional 2,000 square feet.

[d] Large Mixed-Light Tier 2 annual license fees are $44,517 per 22,000 square feet plus $4,040 per additional 2,000 square feet.

[e] Includes all microbusiness licenses.

Distributors could also be affected by the proposed regulations. As of July 2024, there are 1,181 active distributor licenses (including transport only). Based on license data as of July 2024, there are 3,918 unique businesses that hold at least one cultivation, microbusiness, or distributor license.

3.2 Cannabis Production

Total cannabis production in the licensed market was estimated by combining multiple data sources and applying statistical methods. Data include CCTT, production budgets, and

cultivation tax receipts. This section describes estimated licensed production based on cultivation tax and CCTT data.

Cultivation tax data were used to estimate cannabis production through 2021. CCTT data were used to estimate the quantity of licensed cannabis production sold for adult-use and medicinal consumption in California for 2019–2024. CCTT data are adjusted to account for reporting errors.

Table 2 shows estimated annual adult-use, medicinal, and total licensed cannabis production for 2020–2024. Total licensed cannabis production has been increasing since the licensed market was introduced in 2018.

Table 2. Estimated Cannabis Production by Medicinal and Adult Use

Year	Adult-use total, flower-equivalents	Medicinal, flower-equivalents	Total licensed, flower-equivalents	Year-over-year change, %
		Lbs., thousands		
2020	734.1	104.7	838.9	N/A
2021	863.3	120.7	984.0	17.3%
2022	1,014.5	99.8	1,114.3	13.2%
2023	1,184.4	93.7	1,278.0	14.7%
2024	1,336.7	92.7	1,429.4	11.8%

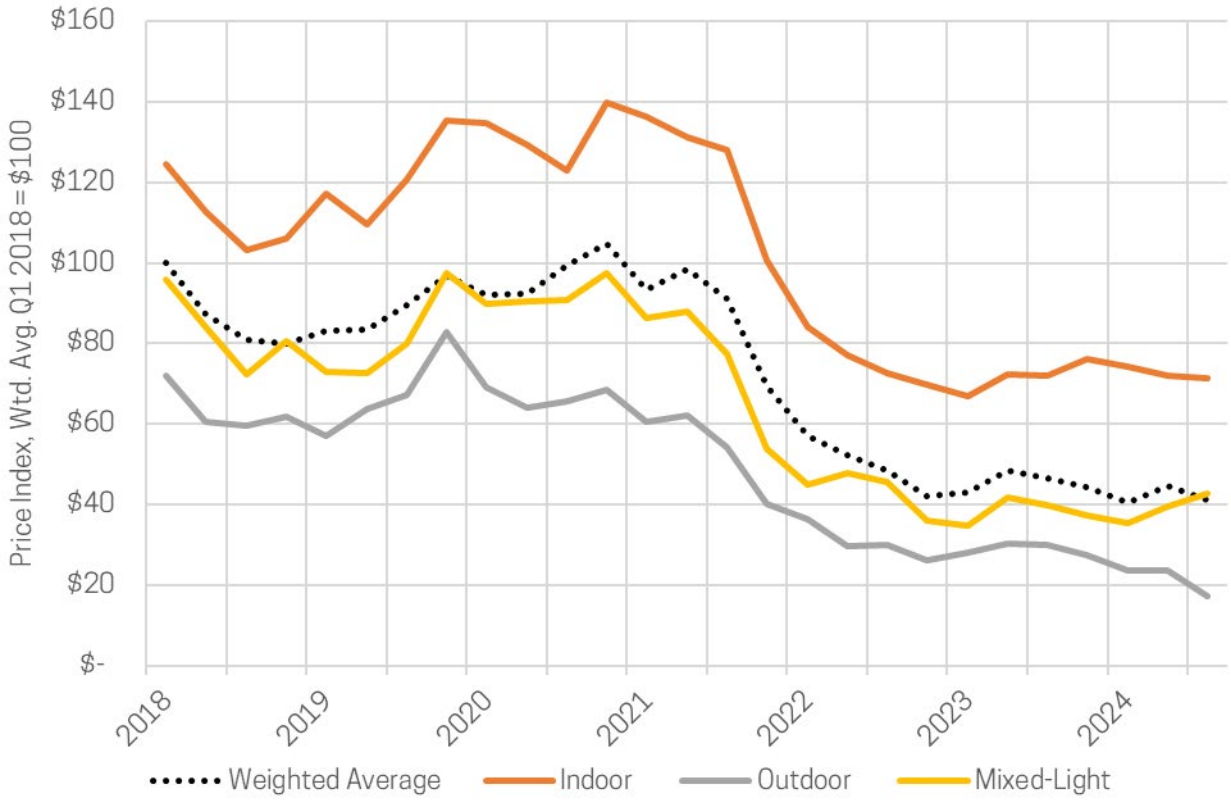
Notes: One pound of trim is equivalent to approximately 1/3 pound of flower.

3.3 Wholesale Prices

Wholesale flower prices are a useful indicator of the health of the licensed cannabis market in California. Wholesale prices have decreased substantially since 2021. Average wholesale prices were between $1,000 and $1,500 per pound in 2018 and increased to up to $1,600 per pounds by 2020. Wholesale prices have declined since 2020, to between $600 and $750 per pound as of 2024.

Figure 1 illustrates indexed and inflation-adjusted quarterly average wholesale prices in California by cultivation method from 2018 through 2024, with weighted average quarterly prices in Q1 2018 equal to $100. Prices are indexed to preserve confidentiality of the data. The weighted average price index of cannabis at wholesale across all cultivation methods decreased substantially from 2021 to 2022, decreasing by 57 percent from Q2 2021 to Q4 2022. Prices rebounded in 2023, increasing by 15 percent from Q4 2022 to Q2 2023. Prices have decreased since, with year-over-year prices in Q3 2024 down 12 percent. Prices for each cultivation method have generally followed the same downward trend; however, indoor cannabis prices have generally been more volatile and mixed-light prices have increased to the highest level seen since Q3 2022.

Figure 1. Quarterly Wholesale Prices by Cultivation Method, 2015–2024 (Indexed using 2018 = $100)



3.4 Cultivator Production Costs

The cost to produce cannabis in California is split into production cost categories (fixed and variable costs), taxes, and other regulatory compliance costs. Production costs have been increasing over the last several years. This is primarily due to higher labor and input costs. However, regulatory costs have been decreasing under changes implemented by DCC and other state agencies.

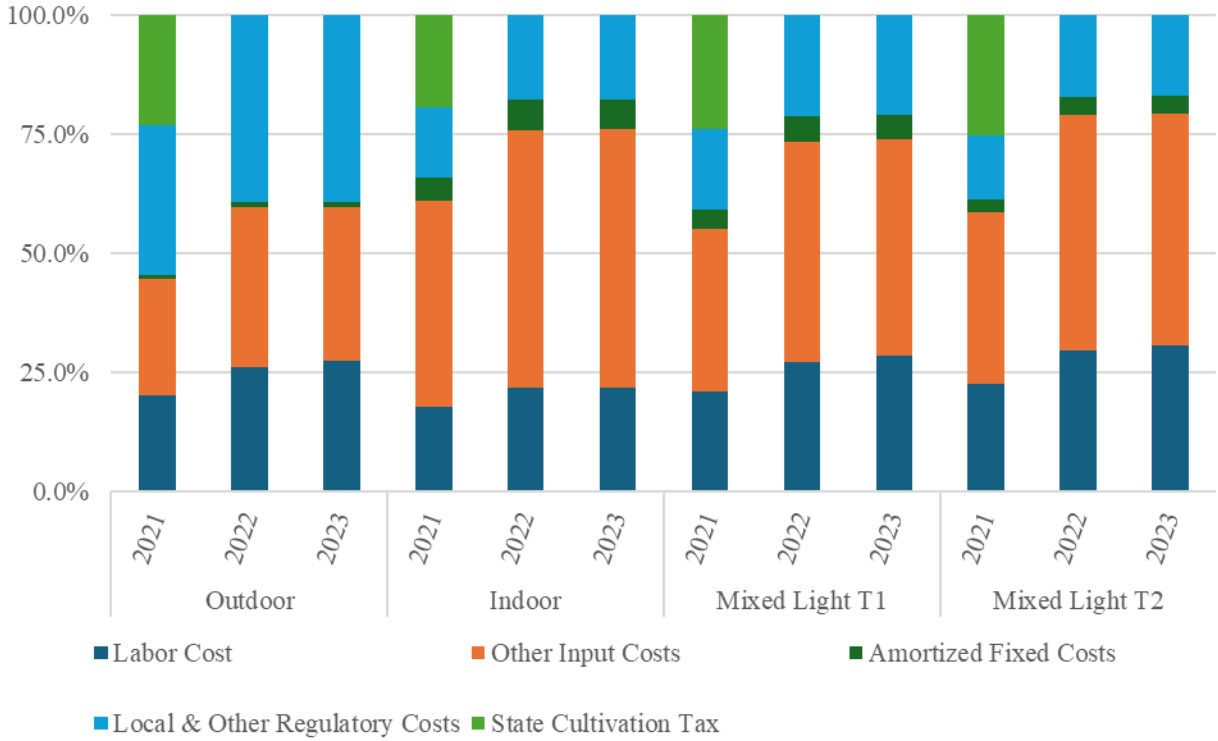
Figure 2 illustrates estimated average annual cost shares by cultivation method from 2021 to 2023. Labor costs include labor associated with cannabis cultivation. These are increasing due to wage increases in the agricultural sector. Labor costs do not include labor associated with compliance—these are included in "Local & Other Regulatory Costs." This would include, for example, labor associated with required electricity reporting. "Local & Other Regulatory Costs" include local taxes, local licensing fees, state licensing fees, and other compliance costs.

The "Other Input Costs" include the other, non-labor variable costs associated with cannabis production, such as fuel, fertilizer, water, and electricity. These increased substantially from 2021 to 2022 due to supply chain shortages and other inflationary pressures. Inflation has

continued through 2023; however, some input costs such as fuel and fertilizer have decreased since 2022. Therefore, other input costs have not changed much from 2022 to 2023.

The costs in Figure 2 do not include a return on management time, inventory, other local business fees and taxes, or other marketing costs. Actual cost shares will vary by cultivation business. These cost shares are based on average operations by cultivation method and input prices as of 2023.

Figure 2. Average Estimated Cultivation Cost Shares by Cultivation Method, 2021–2023



4. Economic and Fiscal Impacts: Proposed Regulations

This report presents the results of the economic and fiscal impact analysis of three alternatives: the proposed regulations, and two alternatives to the proposed regulations that were considered by the Department.

This section presents the results of the analysis of the proposed regulations. The proposed regulations and regulatory amendments expected to have economic and fiscal impacts are summarized as follows:

Removing requirements to report electricity use. The Department is proposing to remove regulations currently in Section 15020 that require cultivators to report power usage by source and to report their Average weighted greenhouse gas emission intensity (AWGGEI) by source.

Removing requirements to purchase carbon offsets. The Department is proposing to remove the regulations currently in Section 16305. This section requires indoor and mixed-tier 2 cultivators to have an AWGGEI equal to or lower than the average for their local utility, or to purchase carbon offsets from a recognized voluntary carbon registry to make up the difference.

Propagation material transfers. The Department is proposing the addition of regulations to Section 16300 authorizing cultivators to transfer (by way of a licensed distributor) seeds, clones, and immature plants to nurseries.

Minimum sanitation standards. Licensees who cultivate cannabis for harvest, processes cannabis, create nonmanufactured cannabis products, or package cannabis or nonmanufactured cannabis products for retail sale must adopt minimum sanitation standards. These include:

- Prohibiting animals on premises,
- Immediately removing animal waste,
- Cleaning and sanitation requirements for tools, utensils, equipment surfaces, and containers, and
- Using a handwashing station, or new food-safe gloves, prior to handling of cannabis.

Manufacturers of cannabis products already must adhere to good manufacturing practices which go above and beyond these requirements. Therefore, these minimum standards would apply to cultivator, microbusiness, processor, distributor, and packaging licensees specifically.

4.1 Direct Economic Benefits

The following sections summarize the estimated direct benefits (cost savings) to cultivators from the proposed regulations. These include benefits to cultivators from removing electricity reporting requirements, and from removing requirements for some cultivators to purchase carbon offsets. Other unquantified, long-term benefits would also be anticipated, including health and safety improvements due to new sanitation standards, and potential diseased resistance and product quality improvements due to more genetic improvements entering the licensed market.

4.1.1 Removing Electricity Reporting Requirements

The benefits associated with removal of electricity reporting requirements are assessed based on the estimated number of hours currently required to complete this reporting, the estimated number of affected licenses, and the opportunity cost of the workers currently completing this reporting. The level of effort for current electricity reporting is based on cultivation method, size, and the number of licenses held, as larger, more complex operations will have different sources and utility providers to report.

This assessment considers the full amount of time throughout the year that an operation may need to complete this reporting, including tracking usage, looking up utility information, and

internal auditing of information. For indoor and mixed-light tier 2 cultivators, who are the primary power users among cultivators, this assessment applies an estimated 12 hours of time per large license, 8 hours per medium license, 6 hours per small license, and 4 hours per specialty and specialty cottage license. Mixed-light tier 1 cultivators also use some electricity, although much less than indoor and mixed-light tier 2 cultivators. Therefore, for these licenses, half the hours for indoor and mixed-light tier 2 cultivators are applied. Additionally, 6 hours per microbusiness and nursery is applied. Outdoor cultivators do not use electricity, and therefore no electricity reporting savings are estimated.

For some operations, the work required for reporting electricity usage may be performed by workers of varying labor classifications and wages, up to and including managers and owners. To consider the full range of possible economic impacts, this assessment applies a lower-bound value of $30 per hour and an upper-bound value of $150 per hour. Table 3 summarizes the upper-bound and lower-bound estimates based on the active number of cultivation licenses. As shown, the estimated impact of removing electricity reporting requirements is a cost savings of between $0.41 and $2.07 million.

Table 3. Cost Savings from Removal of Electricity Reporting Requirements

License Type	Active	Electricity Reporting (Hours)	Total $ Lower Bound	Total $ Upper Bound
Large Indoor	3	12	$1,080	$5,400
Large Mixed-Light Tier 1	5	6	$900	$4,500
Large Mixed-Light Tier 2	1	12	$360	$1,800
Large Outdoor	48	0	$0	$0
Medium Indoor	166	8	$39,840	$199,200
Medium Mixed-Light Tier 1	69	4	$8,280	$41,400
Medium Mixed-Light Tier 2	32	8	$7,680	$38,400
Medium Outdoor	606	0	$0	$0
Small Indoor	349	6	$62,820	$314,100
Small Mixed-Light Tier 1	679	3	$61,110	$305,550
Small Mixed-Light Tier 2	291	6	$52,380	$261,900
Small Outdoor	1,578	0	$0	$0
Specialty Cottage Indoor	33	4	$3,960	$19,800
Specialty Cottage Mixed-Light Tier 1	57	2	$3,420	$17,100
Specialty Cottage Mixed-Light Tier 2	15	4	$1,800	$9,000
Specialty Cottage Outdoor	53	0	$0	$0
Specialty Indoor	322	4	$38,640	$193,200
Specialty Mixed-Light Tier 1	101	2	$6,060	$30,300
Specialty Mixed-Light Tier 2	38	4	$4,560	$22,800
Specialty Outdoor	263	0	$0	$0
Microbusiness	372	6	$66,960	$334,800
Nursery	301	6	$54,180	$270,900
Total			**$414,030**	**$2,070,150**

4.1.2 Removing Carbon Offset Purchase Requirements

The benefits (cost savings) associated with removing requirements for purchasing carbon offsets are based on the estimated current spending on carbon offsets to satisfy the existing regulations. Current spending on carbon offsets is estimated based on the AWGGEI across all California utilities[7], the estimated AWGGEI by energy source[8], the estimated kilowatt-hours (kwh) used by license type based on information from cultivators, and the current price for purchasing carbon

[7] https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program/power-content-label/annual-power-3

[8] https://www.eia.gov/tools/faqs/faq.php?id=74&t=11

offsets.[9] The assessment then applies two scenarios: 1) the AWGGEI for a typical cultivator is equivalent to an operation using entirely natural gas[10], and 2) the AWGGEI for a typical cultivator is based on the average across all available energy sources.[11] These create an upper and lower bound for the estimates, respectively.

As of 2022, the AWGGEI across all California utilities is 0.43 pounds CO2 per kwh.[12] The AWGGEI for natural gas is 0.97, and for all energy sources is 0.86. Therefore, its estimated that a typical indoor or mixed-light tier 2 cultivator would need to purchase carbon offsets for between 0.43 and 0.54 pounds per kwh at the current price of $37.99 per metric ton of CO2.[13] This assumes that cultivators would elect to purchase offsets in lieu of investing in renewable energy for their operation. This may not be the case for some cultivators, especially cultivators may already have renewable energy sources. However, previous analysis conducted for the 2017 SRIA demonstrates that purchasing carbon offsets is more cost effective than investing in renewable energy equipment such as solar panels.

Table 4 shows the estimated costs to offset per license, and the total based on the active number of each license. As shown, the total cost savings are estimated to be between $3.12 and $3.92 million.

[9] https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/auction-information/auction-notices-and-reports

[10] Natural gas is the most common energy source in California.

[11] Includes fossil fuel, geothermal, and other sources. Based on data for the whole U.S.

[12] AWGGEI for individual utilities vary from 0 to over 1,200 pounds CO2 per kwh. These vary by year and can also vary by utility within the same geographic region. Therefore, the average across all utilities is used as representative.

[13] Based on the most recent CA Air Resources Board auction results from May 2024.

Table 4. Estimated Carbon Offset Cost Savings

License Type	Active Lic.	Offset per Lic. (Lower)	Offset per Lic. (Upper)	Total Offset Cost (Lower)	Total Offset Cost (Upper)
Large Indoor	3	$11,435	$14,359	$34,306	$43,077
Large Mixed-Light Tier 2	1	$3,634	$4,563	$3,634	$4,563
Medium Indoor	166	$6,551	$8,226	$1,087,441	$1,365,441
Medium Mixed-Light Tier 2	32	$1,333	$1,673	$42,640	$53,541
Small Indoor	349	$2,859	$3,590	$997,745	$1,252,815
Small Mixed-Light Tier 2	291	$909	$1,141	$264,382	$331,970
Specialty Cottage Indoor	33	$147	$185	$4,862	$6,106
Specialty Cottage Mixed-Light Tier 2	15	$66	$83	$994	$1,248
Specialty Indoor	322	$1,530	$1,922	$492,815	$618,801
Specialty Mixed-Light Tier 2	38	$132	$166	$5,035	$6,322
Nursery	301	$627	$787	$188,759	$237,015
Total	**1,551**			**$3,122,613**	**$3,920,897**

4.1.3 Propagation Material Transfers

Allowing for the transfer of propagation materials from cultivator licensees to nurseries promotes innovation and research and development (R&D) of new cannabis strains by allowing more genetic improvements to enter the licensed market. This, in turn, improves product quality and the ability of the licensed market to compete with the unlicensed market through increased demand for licensed cannabis. These benefits are discussed further in Section 4.3.

4.1.4 Minimum Sanitation Standards

Implementing sanitation standards would have human health benefits from reduced risk of consuming contaminated cannabis. These are considered indirect economic benefits and are not quantified in this report. Additionally, there would be a reduced risk of cannabis recalls. However, there are insufficient data to determine the cost of recalls that may have been prevented by adopting these sanitation standards. These potential benefits are also not quantified in this report.

4.1.5 Summary of Direct Economic Benefits

Table 5 summarizes the assessment of the quantified direct benefits described in the previous sections. The estimated direct economic benefits of the proposed regulations, based on the midpoint of lower-bound and upper-bound estimates presented in the previous sections, equal $4.76 million annually.

Table 5. Direct Economic Benefits Summary

Regulatory Change	Lower Bound ($1,000,000)	Upper Bound ($1,000,000)	Midpoint ($1,000,000)
Removing Electricity Reporting	$0.41	$2.07	$1.24
Removing Carbon Offset Purchases	$3.12	$3.92	$3.52
Total	**$3.53**	**$5.99**	**$4.76**

In addition to these quantified benefits, other unquantified benefits are expected. Allowing cultivators to transfer propagation materials to nurseries would allow new genetic improvements to enter the licensed market. This would improve yields and the ability of the licensed market to compete with the unlicensed market. New sanitation standards would have human health benefits and reduce the risk of cannabis recalls.

4.2 Direct Economic Costs

Cultivators would also incur some direct costs as a result of the proposed regulations. These are summarized in the following section.

4.2.1 Minimum Sanitation Standards

To estimate the direct costs of implementing minimum sanitation standards, the costs of implementing similar standards for tobacco were reviewed. The Food and Drug Administration (FDA) conducted a preliminary regulatory impact analysis in 2023 of implementing sanitation practices for manufacturers of finished and bulk tobacco products, and for facilities used for manufacturing, packaging, and storage of these tobacco products. FDA distinguishes these estimated costs between the one-time up-front costs and the recurring annual costs.

Personnel sanitation requirements for cannabis licensees can be satisfied by having access to handwashing stations or single-use, food-safe, non-latex gloves. FDA cost estimates of personnel sanitation requirements for tobacco businesses do not include costs of handwashing stations, as these should already be accessible. Most cannabis cultivation operations are likely already equipped with handwashing stations; however, this is a source of uncertainty. As an alternative to handwashing stations, the cost of food-safe gloves is assessed per licensee. A cost of $0.10 to $0.14 per glove and two gloves per FTE employee per workday is applied. For the upper bound estimate, the cost of gloves is calculated for 25 percent of cultivators. For the lower bound estimate, the cost of gloves is calculated for 10 percent of cultivators, reflecting the likelihood that most licensees already have access to handwashing stations.

Cleaning and sanitation requirements for cannabis tools and equipment are comparable to facility cleaning practices for tobacco. Both cannabis and tobacco are agricultural products at risk of contamination from animals, chemicals, and human handling, are subject to a process of

trimming and drying in environments prone to mold growth prior to processing and packaging, are ultimately manufactured into a similar mix of product (e.g., loose leaf, pre-rolls, and vapes).

FDA breaks down costs based on hourly wage rates, employee and manager training, developing written procedures, record keeping, and time required for sanitation procedures. The personnel and equipment sanitation requirements outlined by the FDA go beyond the requirements outlined by the Department for cannabis cultivators. For example, the costs estimated by the FDA include the designing of cleaning procedures for equipment, training employees to properly conduct practices, and maintaining sanitation records. Requiring the use of gloves or access to handwashing stations is a considerably less costly approach to sanitation requirements that is not expected to necessitate costs related to training and developing procedures. The requirements for tobacco are designed to ensure that contact between personnel, tobacco, and the environment do not result in contamination. Considering there are similar handling and environmental concerns for cannabis, the one-time training and procedure development costs are included even though they extend beyond the Department's proposed requirements. Therefore, the cost estimates below are conservative (high).

As of July 9, 2024, there are 4,709 active cultivator licensees, 372 microbusiness licensees, 143 processor licensees, and 25 (Type P) packaging licensees belonging to 3,229 unique businesses. There are also 1,182 distributor licensees who may be affected; some distributors re-package flower and/or create pre-rolls. One-time initial costs from FDA are assessed per business (training and development of protocols). Annual variable costs (gloves, materials, labor, etc.,) are assessed per licensee. Table 6 provides a breakdown of these costs per business. The costs per business range from $1,363 to $4,564 for initial costs, and $576 to $1,205 in recurring annual costs. This results in a total of $1,393 to $5,769 per business in the first year of implementation (inflated to 2024 dollars).

Table 6. One-Time and Annual Sanitation Standards Cost Summary

Sanitation Costs	Lower Bound	Upper Bound	Midpoint
One-Time Costs per Business	**$1,363**	**$4,564**	**$2,596**
Written Procedure	$498	$1,495	$997
Employee Training	$505	$2,019	$1,010
Training by Manager	$230	$919	$460
Record Keeping	$130	$130	$130
Annual Costs per Business	**$576**	**$1,205**	**$891**
Materials	$327	$458	$392
Labor	$249	$747	$498
Total Year 1 Cost per Business	**$1,939**	**$5,769**	**$3,487**

The total one-time cost to all businesses is $0.69 to $5.00 million, and the total recurring annual cost to businesses is $0.29 to $1.32 million, for a total cost of $0.99 million to $6.33 million the first year of implementation.

The proposed animal prohibition for cannabis premises is not expected to require quantifiable efforts, and no specific requirements for animal control are detailed. Therefore, this section of the minimum sanitation standards is not expected to have a direct cost for licensees.

Table 7 summarizes the assessment of direct costs. The estimated direct economic costs of the proposed regulations, based on the midpoint of lower-bound and upper-bound estimates presented in the previous sections, equal $3.61 million annually.

Table 7. Direct Economic Costs Summary

Regulation	Lower Bound ($1,000,000)	Upper Bound ($1,000,000)	Midpoint ($1,000,000)
Minimum Sanitation Standards	$0.99	$6.33	$3.61

4.3 Market Effects

The proposed regulations decrease production costs to cultivators by removing electricity reporting and carbon offset purchasing requirements but increase costs by introducing minimum sanitation requirements. The net effect is an increase in production costs for outdoor and mixed-light cultivators, with a greater increase for outdoor cultivators specifically, as they would not benefit most from eliminating carbon offset purchasing and electricity reporting requirements. The net effect for indoor cultivators is a decrease in production costs related to benefits from eliminating carbon offset purchasing and electricity reporting requirements outweighing new costs.

The resulting changes in marginal costs of production can affect both the total production quantities and market prices. Additionally, the increase in cannabis quality as a result of more genetic improvements entering the market (as a result of transfers from cultivators to nurseries) could cause a small increase in demand for licensed cannabis. The ability of the licensed market to compete with the unlicensed market would improve as a result, and some production and consumption shifting to the licensed market. However, it is not expected that this increase in demand would be realized in the short run, and therefore it is not incorporated in the economic model.

4.3.1 Market Supply and Demand Effects

The market effects of the proposed regulations were evaluated using an equilibrium displacement model (EDM) of the California cannabis market. An EDM is a mathematical representation of the supply and demand for an aggregate market and its underlying market segments that is used to assess how the market would respond to a change in market conditions (in this case, changes to cultivator marginal production costs). The cannabis market EDM was developed by ERA Economics and initially applied for the 2017 SRIA of the CalCannabis Cultivation Licensing Program (and Medical Cannabis Cultivation Program). The market structure has changed since the initial assessment based on new laws, regulations, better industry data, industry interviews,

and various economic studies. The EDM framework has been updated to reflect this new information.

The EDM evaluates the effect on market price and wholesale quantity[14] attributable to the proposed regulations, and includes potential changes to the following California market segments:

- Outdoor licensed production
- Mixed-light licensed production
- Indoor licensed production
- Unlicensed market production
- Licensed market consumer demand
- Unlicensed market consumer demand
- Unlicensed market export demand

Inputs into the EDM model are the changes to industry supply are the increased unit costs of production caused by the proposed regulations. As described in the previous section, the proposed regulations result in marginal cost changes to cultivators, affecting industry supply and demand.

To implement cost changes in the EDM, the net marginal cost changes were calculated for each license type. The change in production cost was calculated on a per-pound of production basis, as a weighted average cost over the distribution of estimated production by cultivation method. This results in a marginal (incremental) change in production cost per pound of cannabis—across the entire industry—by cultivation method.

Table 8 summarizes the percent changes in variable costs per pound resulting from the proposed regulations. Cost changes represent the average change in production cost per pound by cultivation method. Outdoor and mixed-light cultivators would experience slightly higher marginal costs under the proposed regulations (0.69 percent and 0.27 percent, respectively), while indoor cultivators would experience decreased marginal costs (0.49 percent). The decrease in marginal costs for indoor cultivators results from avoided costs associated with electricity reporting and carbon offset purchase requirements. Net cost changes include changes to marginal costs (variable costs and annualized average fixed costs) and offsetting benefits (electricity reporting and carbon offsets) of the proposed regulations.

[14] The EDM evaluates the wholesale market. All production is expressed on dry flower equivalent basis.

Additionally, the demand for licensed cannabis would likely increase due to the availability of more genetically diverse strains, which would be able to enter the licensed market as a result of cultivators making transfers to nurseries. However, it is not expected that this increase in demand would be realized in the short-run, and therefore it is not incorporated in the model.

Table 8. Cost Changes by Market Segment

Market Segment	Percent Change in Variable Cost per Pound
Indoor	-0.49%
Mixed-Light	0.27%
Outdoor	0.69%

The percent changes in production costs are increased unit costs of production for each cultivation method. These unit cost changes were entered as inputs to the EDM model and used to evaluate the effect on the overall market.

Table 9 summarizes the results of the EDM analysis. The proposed regulations affect the price and quantity of licensed cannabis production. This affects the returns that all cultivators receive.

Table 9. EDM Analysis Market Effects Results

Description	Percent Change
Quantity demand of all licensed flower	-0.01%
Quantity supplied of outdoor flower	-0.50%
Quantity supplied of mixed-light flower	-0.25%
Quantity supplied of indoor flower	0.64%
Price of all licensed flower	0.02%

Table 11 summarizes the changes in cannabis cultivator gross revenue. Underlying the total are changes by cultivation method. Price and quantity decreases would result in outdoor and mixed-light cultivators seeing a small decrease in gross revenue. Indoor cultivators, on the other hand, would see an increase in gross revenue. The resulting change in licensed cultivator gross revenue across all cultivator types is an increase of $66,389.

Table 10. Changes in Gross Revenue Related to Market Changes

Cultivation Method	Change in Gross Revenue
Total Licensed Cultivation	**$66,389**
Outdoor	($1,977,828)
Mixed-Light	($489,578)
Indoor	$2,533,795

4.3.2 Indirect and Induced Effects

The total economic impact is the sum of the direct, indirect, and induced impacts. Indirect and induced (secondary) economic impacts include other changes in spending resulting from the direct impacts of the proposed regulations. Indirect impacts are changes in business-to-business spending, and induced impacts are changes in spending related to changes in income to employees and owners. Indirect and induced impacts are estimated using multipliers from regional economic impact models, also called multiplier models.

Multiplier models are calibrated using national tax data. Since there is no federal licensed cannabis market, these models do not have defined cannabis businesses sectors. A custom[15] IMPLAN input-output model that includes cannabis cultivation (and other) sectors was applied for the analysis. The model's geographic scope is all California counties because the economic impacts of the proposed regulations would apply to all of California. Economic impacts are summarized in terms of jobs, total economic output, value added, and labor income.

The direct benefits (cost savings) and costs of the proposed regulations were described and analyzed in earlier sections. All of these cost changes result in changes in market prices and quantities for cultivators in the licensed cannabis sector, as summarized in the previous section. The resulting changes in gross revenue are modeled in IMPLAN as changes in industry output.

Table 11 summarizes the results of the IMPLAN analysis and total economic impacts. The increase in gross output of $67,386 results in a decrease in indirect output of $403,139. The decrease in indirect output is due to the indirect impacts resulting from mixed-light and outdoor cultivators change in output being more substantial than the indirect effects related to the change in indoor cultivators gross output. However, there is an increase in induced output of $195,595. This is due to the increase in revenue and proprietor income for indoor cultivators outweighing the induced impacts of other small revenue decreases for outdoor and mixed-light cultivators. This is also why the results show an increase in labor income. The total impact on gross economic output in the State is a decrease of $140,157.

Table 11. IMPLAN Results

	Impact Type	Employment	Labor Income	Value Added	Output
Cultivator Gross Output Impacts	Direct Effect	-17.1	$425,676	$431,859	$67,386
	Indirect Effect	-1.7	($150,109)	($264,805)	($403,139)
	Induced Effect	1.1	$66,605	$116,744	$195,595
	Total Effect	-17.7	$342,172	$283,798	($140,157)

[15] This analysis uses custom sectors originally developed for the 2017 SRIA that have been updated periodically by ERA Economics and applied to regulations and market assessments developed through 2023.

4.3.3 Employment (Job) Estimated Effects

As displayed in Table 11, the direct impact to cannabis cultivators is a decrease in employment of 14.2 full-time equivalent (FTE) jobs. The total employment impact, including indirect and induced impacts, is a decrease of 13.9 FTE jobs.

4.4 Other Economic Impacts Summary

This section summarizes typical impacts to a business and small business, effect on worker safety, health, and the environment, Department fiscal costs, and other state agency fiscal costs.

4.4.1 Estimated Effects on a Typical Business and Small Business

The economic analysis considered the impacts for a "typical" business, and a "small" business that would be affected by the regulations. The proposed regulations will predominately affect licensed cultivators. Based on the number of licenses held by cannabis cultivation businesses historically, a typical cultivator was determined to be one holding three small licenses, and a small cultivator was determined to be one holding a single small license.

Costs and benefits were considered for each cultivation method. That is, costs and benefits related to the decrease in electricity reporting and carbon offset costs (where applicable) were applied to each business, as were the increase in costs for sanitation standards, including purchase of gloves in lieu of a handwashing station (although some cultivators may already have these). The estimated costs per license type are summarized in the previous sections.

The estimated costs for a typical cultivation business are summarized in Table 12. These are based on the midpoint values reported in previous sections and include both one-time and annual costs. One-time costs would occur due to sanitation standard requirements and are shown above in Table 6. Costs during the first 12 months following implementation would include both annual and one-time costs.

Table 12. Summary of Costs and Benefits for a Typical Cultivation Business

Description	Outdoor	Indoor	Mixed-Light Tier 1	Mixed-Light Tier 2
Sanitation Standards Costs	$3,742	$5,686	$3,742	$4,030
Electricity Reporting Cost Savings	$0	($1,620)	($810)	($1,620)
Carbon Offset Cost Savings	$0	($9,673)	$0	($3,074)
Net annual costs (benefits)	**$3,742**	**($5,607)**	**$2,932**	**($664)**

The estimated annual and one-time costs for a typical small cultivation business are summarized in Table 13.

Table 13. Summary of Costs and Benefits for a Small Cultivation Business

Description	Outdoor	Indoor	Mixed-Light Tier 1	Mixed-Light Tier 2
Sanitation Standards Costs	$3,310	$3,958	$3,310	$3,406
Electricity Reporting Cost Savings	$0	($540)	($270)	($540)
Carbon Offset Cost Savings	$0	($3,224)	$0	($1,025)
Net annual costs (benefits)	**$3,310**	**$194**	**$3,040**	**$1,842**

Based on license data as of July 2024, there are a total of 3,918 businesses with a cultivation, distributor, and/or microbusiness license. Based on previous assessments of the licensed cannabis cultivation segment, it is estimated that 90 percent of these businesses are small businesses.

4.4.2 Other Economic Impacts to Businesses, Individuals, Worker Safety, and the State's Environment

Currently, licensed cannabis can be neither exported to other states nor imported from other states. Therefore, the proposed regulations would not affect the ability of businesses in the State to compete with those in other states.

The proposed regulations do not require additional business reports or the use of specific technologies or equipment. They do require including some additional information on the existing CCTT, which is already the standard means for cultivators and other licensed cannabis businesses in the state for reporting.

The proposed regulations are not likely to encourage expansion of businesses in the State. They are not estimated to result in the creation nor elimination of businesses.

The proposed regulations would provide benefits to the State's environment that were not monetized. Allowing the transfer of propagation materials from cultivators to nurseries would help the licensed market become more competitive with the unlicensed market. This will allow more diverse genetic improvements to enter the licensed market, including those that may be available in the unlicensed market currently. To the extent that unlicensed cannabis operations can cause negative environmental impacts as well as other social costs, the proposed regulations would provide indirect benefits to the State's environment.

4.4.3 Department Fiscal Costs

Fiscal impacts are changes to public agency costs and revenues associated with the regulations.

The fiscal impacts of the proposed regulations to the Department are expected not to be substantial and include:

1. Increased efficiencies due to reduced administrative workload associated with the extension of the temporary event time limit and elimination of electricity reporting and carbon offset purchase verification. Any efficiencies gained will be absorbed by other application processing workload.
2. Minor cost increases related to additional consideration of sanitation standards when conducting inspections. Because the sanitation standards are not extensive, the Department expects the increased inspection time to be minimal.
3. Minor decrease in inspection workload associated with the elimination of incorporating the pest management plan into an inspection to ensure that what is on file in the plan aligns with what is happening onsite. The impact on the Department is expected to be cost-neutral.

Overall, the Department expects fiscal cost changes to be very minor and easily absorbed within the existing Department budget.

4.4.4 Other State and Local Public Agencies Fiscal Costs

There would not be changes to other state and local public agency costs under the proposed regulations.

5. Economic and Fiscal Impacts: Proposed Alternatives

This section presents the results of the economic and fiscal impact analysis of two alternatives to the proposed regulations that were considered by the Department. These alternatives are summarized as follows:

1) The first alternative considered would impose stricter sanitation standards than proposed. Specifically, the Department considered requiring handwashing stations on all cultivation premises, and not allowing the option to use single-use gloves in the absence of handwashing stations.
2) The second alternative considered would not eliminate the requirements for electricity use reporting and carbon offset purchases.

5.1 Economic and Fiscal Impacts of Regulation Alternative 1

Under this alternative, all cultivators would need to have handwashing stations on site as part of the new sanitations standards. Cultivators would not be allowed to use single-use gloves in lieu of handwashing stations.

5.1.1 Alternative 1 Direct Economic Benefits

Direct economic benefits under this alternative would be the same as under the proposed regulations.

5.1.2 Alternative 1 Direct Economic Costs

Under this alternative, sanitation standard costs would change. The sanitation standard costs under this alternative are summarized in Table 14.

Table 14. One-Time and Annual Sanitation Standards Cost Summary Under Alternative 1

Sanitation Costs	Lower Bound	Upper Bound	Midpoint
One-Time Costs per Business	**$2,724**	**$11,366**	**$6,677**
Written Procedure	$498	$1,495	$997
Employee Training	$505	$2,019	$1,010
Training by Manager	$230	$919	$460
Handwashing Station	$1,360	$6,802	$4,081
Record Keeping	$130	$130	$130
Annual Costs per Business	**$249**	**$747**	**$498**
Materials	$0	$0	$0
Labor	$249	$747	$498
Total Year 1 Cost per Business	**$2,973**	**$12,113**	**$7,176**

The total one-time cost to all businesses under this alternative would be between $1.12 to $11.30 million, and the total recurring annual cost to businesses would be between $0.13 to $0.82 million, for a total cost of $1.25 million to $12.11 million the first year of implementation.

Total direct economic costs under this alternative are summarized in Table 15. Total direct economic costs under this alternative, based on midpoint values of estimates, are $6.68 million annually. This is greater than direct economic costs under the proposed regulations.

Table 15. Direct Economic Cost Summary Under Alternative 1

Regulation	Lower Bound ($1,000,000)	Upper Bound ($1,000,000)	Midpoint ($1,000,000)
Minimum Sanitation Standards	$1.25	$12.11	$6.68

5.1.3 Alternative 1 Market Effects

Table 16 summarizes the market changes under this alternative.

Table 16. Cost Changes by Market Segment Under Alternative 1

Market Segment	Percent Change in Variable Cost per Pound
Indoor	-0.43%
Mixed-Light	0.37%
Outdoor	0.78%

Table 17 summarizes the results of the EDM analysis under this alternative.

Table 17. EDM Analysis Market Effects Results Under Alternative 1

Description	Percent Change
Quantity demand of all licensed flower	-0.01%
Quantity supplied of outdoor flower	-0.47%
Quantity supplied of mixed-light flower	-0.28%
Quantity supplied of indoor flower	0.64%
Price of all licensed flower	0.01%

Table 18 summarizes the average changes in cultivator gross revenue under this alternative. The resulting change in licensed cultivator gross revenue across all cultivator types is an increase of $214,826.

Table 18. Changes in Gross Revenue Related to Market Changes Under Alternative 1

Cultivation Method	Change in Gross Revenue
Total Licensed Cultivation	**$214,826**
Outdoor	($1,924,455)
Mixed-Light	($506,409)
Indoor	$2,645,691

5.1.4 Alternative 1 Indirect and Induced Effects

Table 19 summarizes the results of the IMPLAN analysis and total economic impacts under this alternative.

Table 19. IMPLAN Results Under Alternative 1

	Impact Type	Employment	Labor Income	Value Added	Output
Cultivator Gross Output Impacts	Direct Effect	-16.1	$550,672	$571,743	$216,869
	Indirect Effect	-1.6	($141,567)	($249,273)	($377,805)
	Induced Effect	1.7	$105,561	$185,701	$311,404
	Total Effect	-15.9	$514,665	$508,171	$150,468

5.1.5 Employment (Job) Estimated Effects under Alternative 1

As shown in Table 19, the total employment effects under this alternative are a decrease of 12 FTE jobs.

5.1.6 Estimated Effects on a Typical Business and Small Business under Alternative 1

The estimated direct impacts to a typical cultivation business are summarized in Table 20. The estimated direct impacts to a small cultivation business are summarized in Table 21.

Table 20. Summary of Costs and Benefits for a Typical Cultivation Business Under Alternative 1

Description	Outdoor	Indoor	Mixed-Light Tier 1	Mixed-Light Tier 2
Sanitation Standards Costs	$7,176	$7,176	$7,176	$7,176
Electricity Reporting Cost Savings	$0	($1,620)	($810)	($1,620)
Carbon Offset Cost Savings	$0	($9,673)	$0	($3,074)
Net annual costs (benefits)	**$7,176**	**($4,117)**	**$6,366**	**$2,482**

Table 21. Summary of Costs and Benefits for a Small Cultivation Business Under Alternative 1

Description	Outdoor	Indoor	Mixed-Light Tier 1	Mixed-Light Tier 2
Sanitation Standards Costs	$7,176	$7,176	$7,176	$7,176
Electricity Reporting Cost Savings	$0	($540)	($270)	($540)
Carbon Offset Cost Savings	$0	($3,224)	$0	($1,025)
Net annual costs (benefits)	**$7,176**	**$3,411**	**$6,906**	**$5,611**

5.1.7 Other Economic Impacts to Businesses, Individuals, Worker Safety, and the State's Environment under Alternative 1

Other economic impacts to businesses, individuals, worker safety, and the State's environment under this alternative would be similar to those under the proposed regulations.

5.1.8 Department Fiscal Costs under Alternative 1

Department fiscal costs under this alternative would be similar to those under the proposed regulations.

5.1.9 Other State and Local Public Agencies Fiscal Costs under Alternative 1

There would be no cost changes to other State or local public agencies' fiscal costs under this alternative.

5.1.10 Basis for Rejecting Alternative 1

This alternative would achieve the same goals as the proposed regulations, but at a higher cost to businesses in the State. Therefore, it was rejected.

5.2 Economic and Fiscal Impacts of Regulation Alternative 2

Under this alternative, the Department would not eliminate the requirements for electricity use reporting and carbon offset purchases.

5.2.1 Alternative 2 Direct Economic Benefits

Under this alternative, cultivators would not benefit from cost savings related to electricity use reporting and carbon offset purchase requirements. Therefore, the quantified benefits of the alternative are $0. The unquantified benefits identified for the proposed regulations would be the same as under the proposed regulations.

5.2.2 Alternative 2 Direct Economic Costs

Direct economic costs under this alternative would be the same as those for the proposed regulation.

5.2.3 Alternative 2 Market Effects

Table 22 summarizes the market changes under this alternative.

Table 22. Cost Changes by Market Segment Under Alternative 2

Market Segment	Percent Change in Variable Cost per Pound
Indoor	0.46%
Mixed-Light	0.77%
Outdoor	0.69%

Table 23 summarizes the results of the EDM analysis under this alternative.

Table 23. EDM Analysis Market Effects Results Under Alternative 2

Description	Percent Change
Quantity demand of all licensed flower	-0.24%
Quantity supplied of outdoor flower	-0.25%
Quantity supplied of mixed-light flower	-0.42%
Quantity supplied of indoor flower	-0.13%
Price of all licensed flower	0.35%

Table 24 summarizes the average changes in cultivator gross revenue under this alternative. The resulting change in licensed cultivator gross revenue across all cultivator types is an increase of $1,132,886.

Table 24. Changes in Gross Revenue Related to Market Changes Under Alternative 2

Cultivation Method	Change in Gross Revenue
Total Licensed Cultivation	**$1,132,886**
Outdoor	$416,550
Mixed-Light	($135,040)
Indoor	$851,375

5.2.4 Alternative 2 Indirect and Induced Effects

Table 25 summarizes the results of the IMPLAN analysis and total economic impacts under this alternative.

Table 25. IMPLAN Results Under Alternative 2

	Impact Type	Employment	Labor Income	Value Added	Output
Cultivator Gross Output Impacts	Direct Effect	8.4	$953,260	$1,066,889	$1,140,855
	Indirect Effect	0.7	$65,761	$119,617	$194,854
	Induced Effect	4.7	$297,287	$526,244	$883,794
	Total Effect	13.8	$1,316,308	$1,712,750	$2,219,503

5.2.5 Employment (Job) Estimated Effects under Alternative 2

As shown in Table 25, the total employment effects under this alternative are an increase of 17.7 FTE jobs.

5.2.6 Estimated Effects on a Typical Business and Small Business under Alternative 2

The estimated direct impacts to a typical cultivation business are summarized in Table 26. The estimated direct impacts to a small cultivation business are summarized in Table 27.

Table 26. Summary of Costs and Benefits for a Typical Cultivation Business Under Alternative 2

Description	Outdoor	Indoor	Mixed-Light Tier 1	Mixed-Light Tier 2
Sanitation Standards Costs	$3,742	$5,686	$3,742	$4,030
Electricity Reporting Cost Savings	$0	$0	$0	$0
Carbon Offset Cost Savings	$0	$0	$0	$0
Net annual costs (benefits)	**$3,742**	**$5,686**	**$3,742**	**$4,030**

Table 27. Summary of Costs and Benefits for a Small Cultivation Business Under Alternative 2

Description	Outdoor	Indoor	Mixed-Light Tier 1	Mixed-Light Tier 2
Sanitation Standards Costs	$3,310	$3,310	$3,310	$3,310
Electricity Reporting Cost Savings	$0	$0	$0	$0
Carbon Offset Cost Savings	$0	$0	$0	$0
Net annual costs (benefits)	**$3,310**	**$3,310**	**$3,310**	**$3,310**

5.2.7 Other Economic Impacts to Businesses, Individuals, Worker Safety, and the State's Environment under Alternative 2

Other economic impacts to businesses, individuals, worker safety, and the State's environment under this alternative would be similar to those under the proposed regulations.

5.2.8 Department Fiscal Costs under Alternative 2

Department fiscal costs under this alternative would be similar to those under the proposed regulations.

5.2.9 Other State and Local Public Agencies Fiscal Costs under Alternative 2

There would be no cost changes to other State or local public agencies' fiscal costs under this alternative.

5.2.10 Basis for Rejecting Alternative 2

This alternative would eliminate cost savings for cultivators (indoor and mixed light) while not reducing costs for other cultivators (outdoor). Therefore, this alternative is rejected.

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