TO: The Commission

FROM: Anthony I. Wilson, Commissioner

DATE: June 22, 2026

RE: Proposal to Replace Canopy-Based Cultivation Tiers with Annual Production-Weight Tiers Under 935 CMR 500 and 935 CMR 501

This memorandum recommends that the Cannabis Control Commission (Commission) amend 935 CMR 500 and 935 CMR 501 (collectively "the Regulations") to replace the current canopy-based (square footage) tier system for Marijuana Cultivator licenses with a production-weight tier system measured in grams of dried flower produced annually and monitored quarterly. The current framework, which ties license tiers to the maximum square footage of flowering canopy, was adopted on the assumption that physical area would be easier to audit than output; but canopy is itself difficult to measure accurately, the metric captures capacity rather than output, the tier-relegation process is ambiguous, and the framework diverges from the metric that actually drives market impact: the quantity of cannabis entering the supply chain. An annual weight-based system would more precisely regulate production, simplify compliance, and align the Commission's oversight with the economic reality of cannabis cultivation.

I. The Problem with Canopy as a Regulatory Metric

A. Canopy Measures Capacity, Not Output

Under the Regulations, "Canopy" is defined in terms of the area of flowering plants. License tiers under 500.050 are assigned based on the maximum square footage of this canopy. The fundamental issue is that canopy area is a proxy for production, not a direct measure of it. Two cultivators holding identical tier licenses can produce vastly different quantities of cannabis depending on strain genetics, cultivation technique, lighting intensity, plant density, and harvest frequency.

Multiple independent industry sources document this variability. A Cannabis Business Times survey of commercial cultivators found that yield per square foot ranged from less than 20 g/ft^2 to over 60 g/ft^2, with the average across surveyed operations resting at 39.5 g/ft^2; a threefold spread among licensed commercial growers operating under comparable regulatory frameworks.[1] Consultants have advised that start-up operations should expect approximately 35 grams of dried flower per square foot per harvest, that established

[1] *CBT Staff, "Measuring Yield," Cannabis Business Times*, Oct. 6, 2016. Survey of commercial cultivators finding yield per square foot ranged from <20 g/ft² to >60 g/ft², averaging 39.5 g/ft². Available at: https://www.cannabisbusinesstimes.com/home/article/15699459/measuring-yield

operations with refined genetics and protocols should expect 50 to 70 grams, and that yields exceeding 100 grams per square foot are achieved by very few cultivators.[2]

In practical terms, a Tier 3 indoor cultivator (20,000 sq. ft.) could produce anywhere from 400,000 grams to over 1,200,000 grams per harvest depending on skill and method, a threefold range under the same license. The canopy cap does not actually constrain how much cannabis enters the market; it constrains only how much physical space is devoted to flowering plants at any given moment.

The RAND Corporation's analysis of cannabis production economics confirmed the structural basis for this variability: indoor operations maximize yield per square foot by planting densely and harvesting while plants are smaller, running multiple harvests per year, while outdoor operations space plants widely, grow them to much larger sizes, and harvest once annually.[3] The same canopy footprint thus yields fundamentally different volumes of product depending on the cultivator's chosen method.

B. Canopy Is Borrowed from Agriculture but Misapplied as a Regulatory Cap

Canopy measurement is an established tool in mainstream U.S. horticulture, but it is used by growers and researchers to manage their own operations, not by regulators to cap production. Canopy measurement is an operator tool for yield prediction, irrigation scheduling, and pruning decisions. No alcohol regulator caps a vineyard by its canopy density. No orchard licensing body limits an apple grower's canopy projection area. Where agricultural regulators have historically imposed area-based production limits, such as the EU vine planting authorization system or the now-defunct U.S. tobacco acreage allotment program, those systems measured planted ground area (acreage), not canopy. Cannabis appears to be the only agricultural sector in which regulators use canopy area specifically as a production-capacity cap and licensing tier.

The presumed justification for this approach is that physical area should be easier to verify than production weight. In practice, however, canopy is not straightforward to measure. The Commission's own definition of Canopy in 935 CMR 500.002 implicitly acknowledges this complexity by specifying that "[i]f Flowering and/or Vegetative plants larger than eight inches tall and eight inches wide are being cultivated using a shelving system, the surface area of each level shall be included in the total Canopy calculation." A canopy figure is not

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[2] *Ryan Douglas, "Finding the Balance Between Cannabis Plant Density and Crop Health," Greenhouse Grower*, 2022. Douglas is the founder of Ryan Douglas Cultivation, LLC and former Cultivation Director at Canopy Growth. Available at: https://www.greenhousegrower.com/production/finding-the-balance-between-cannabis-plant-density-and-crop-health/

[3] Jonathan P. Caulkins, "Estimated Cost of Production for Legalized Cannabis," RAND Working Paper WR-764-RC, 2010. Available at: https://www.rand.org/content/dam/rand/pubs/working_papers/2010/RAND_WR764.pdf

simply the floor area of a grow room; it requires accounting for vertically tiered shelving, distinguishing flowering plants from immature plants that fall below the size threshold, identifying and subtracting walkways and fallow areas, and determining where canopy boundaries begin and end as plants grow into and out of demarcated zones throughout a cultivation cycle. These measurements shift as plants develop, as cultivators rotate between flowering and vegetative areas, and as canopy boundaries expand or contract over time. The result is that the metric chosen for its supposed ease of inspection is itself subject to ongoing measurement disputes, inspector judgment calls, and cultivator gaming, while still failing to tell the regulator how much cannabis was actually produced. A weight recorded in the seed-to-sale tracking system at a defined post-harvest point, by contrast, is a single objective number that does not change after it is entered.

C. The Tier Relegation Standard Is Ambiguous

Section 500.050(2)(d) authorizes the Commission to reduce a licensee's canopy tier if the licensee "sold less than 70% of what it produced" during the relevant review period. This standard raises several interpretive problems that a weight-based system would resolve. "Produced" is undefined at the measurement level. Cannabis is weighed at multiple points: at harvest (wet weight), after drying, after curing, and after trimming and processing for sale. Weight decreases substantially at each stage. The regulation does not specify which measurement constitutes what was "produced." The treatment of plant waste is unaddressed. Stems, fan leaves, and trim are byproducts of every harvest. Whether they count toward what was "produced" is not specified, yet the answer materially affects whether a cultivator crosses the 70% threshold.

The Commission currently calculates what was "produced" using the METRC harvest report. Staff subtracts waste (column G) and moisture loss (column J) from the wet harvested weight (column F). This formula is not supported by the Regulations and could be contested by Licensees if the Commission used this methodology as a basis for enforcement action. Importantly, this methodology explicitly uses weight, not square footage, as its measurement device.

An annual production-weight system, with quarterly monitoring, would eliminate these ambiguities by defining the relevant measure explicitly; grams of dried, trimmed flower as recorded in the seed-to-sale tracking system at a designated point in the post-harvest process and by tying tier status directly to what was produced rather than to what was sold.

II. Advantages of Weight-Based Tiers

A weight-based system offers several concrete advantages over the status quo. It directly regulates the variable the Commission cares about: how much cannabis enters the market. Canopy is at best a proxy for this; production weight is the thing itself. The metric is already captured in the seed-to-sale tracking system, so compliance verification does not require physical inspection of canopy boundaries, it can be audited from existing data. The system eliminates the interpretive problems embedded in the current relegation standard by defining "production" at a specific, unambiguous point in the post-harvest process. It also removes the incentive structure created by canopy limits, under which cultivators are rewarded for maximizing output within a fixed footprint regardless of quality, market demand, or resource efficiency. Under a weight-based system, a cultivator who chooses to produce less, focusing on premium flower, for instance, is not penalized for underutilizing canopy space.

A weight-based system also resolves a latent gap in the current application process. The Regulations require applicants to submit a floor plan identifying the square footage available and describing the functional areas of the establishment, but they do not expressly require an applicant to demonstrate that the premises can physically accommodate the canopy footprint of the tier the applicant has selected. Under 500.050(2)(b), the applicant "shall select a cultivation tier," and the Commission relies on inspection and downstream METRC data to catch mismatches. Under a weight-based system, this verification problem disappears. The Commission does not need to know whether a facility is physically large enough for its selected tier; it only needs to know whether annual production has exceeded the licensed amount, which METRC records definitively.

The framework also better serves the Commission's equity objectives. Weight-based tiers are agnostic to how much space or capital an operator has. A Social Equity Program participant operating a small vertically-racked microbusiness that produces high-quality flower is measured on the same basis as a large multi-state operator: grams produced. Small footprints, premium-flower strategies, and space-efficient cultivation methods are no longer penalized relative to sprawling operations, and cultivators can plan investments and expansions around a predictable, quantifiable ceiling.

No other major agricultural industry uses canopy area as a production cap. Where regulators in other sectors limit output, they do so through harvest quotas, acreage allotments, or production-weight limits. Cannabis regulation would be better served by adopting the approach used in virtually every other regulated agricultural context: measuring what is actually produced, not the space in which it is grown.

III. Current Market Conditions and Commission Response

The average retail price per gram of adult-use cannabis has fallen from $14.09 when legal sales began in November 2018 to $5.36 in April 2024, a 62% decline. The per-ounce price followed the same trajectory, dropping from $401.50 to $153.73 over the same period.[4] By December 2025, the average retail price per ounce had reached a record low of $113.68, down 72% from December 2020.[5] As of January 2026, the per-gram price stood at $4.05.[6]

This price erosion has occurred alongside rapid expansion of licensed cultivation capacity. As of December 2025, active Marijuana Cultivators and Microbusinesses had the capacity to grow up to 4.57 million square feet of cannabis canopy, with an additional 700,000 square feet pending.[7] The total number of licensees across all types rose from 223 in July 2023 to 686 by January 2026. Twenty-four licensees have been placed into court-appointed receivership.

In response to these market conditions, the Commission voted to impose a 120-day moratorium on new cultivation permits, effective June 16, 2026.[8] The freeze applies to new Marijuana Cultivator applications, with exceptions for applications submitted before the effective date and for microbusiness applications from Social Equity Program participants and Economic Empowerment Applicants. The Commission also began reviewing cultivators at annual license renewal to utilize tier relegation under 500.050(2)(d) for the first time.

These are significant interventions, but both actions expose the limitations of the canopy-based framework. The Commission can reduce individual cultivators' canopy, but it has no mechanism to set or enforce a ceiling on total production across the industry.

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[4] Cannabis Control Commission, "Review and Assessment of the Massachusetts Adult- and Medical-use Cannabis Industries," Industry Report, Feb. 2025. Available at: https://masscannabiscontrol.com/2025/02/cannabis-control-commission-releases-industry-report-assessing-adult-and-medical-use-cannabis-markets/

[5] State House News Service, "Massachusetts Cannabis Regulators Agree to Explore Licensing Freeze," Feb. 16, 2026. Available at: https://www.statehousenews.com/news/regulatedindustries/cannabis/massachusetts-cannabis-regulators-agree-to-explore-licensing-freeze/

[6] CRB Monitor News, "MA Regulators Consider Cultivation Freeze," Feb. 27, 2026. Available at: https://news.crbmonitor.com/2026/02/ma-regulators-consider-cultivation-freeze/

[7] Cannabis Control Commission, "Massachusetts Adult-use Cannabis Sales Generated $1.65 Billion Total in 2025," Jan. 9, 2026. Available at: https://masscannabiscontrol.com/2026/01/massachusetts-adult-use-cannabis-sales-generated-1-65-billion-in-2025/

[8] MJBizDaily, "Massachusetts Halts Cannabis Cultivation Permitting, but Doubles Retail Cap," June 18, 2026. Available at: https://mjbizdaily.com/news/massachusetts-caps-cannabis-cultivation-expands-retail/616537/

A weight-based tier system would give the Commission a tool it currently lacks: the ability to control the maximum amount of cannabis a new licensee could bring to the market. This approach is more precise, more flexible, and more equitable than a licensing freeze. A moratorium halts all new entry regardless of whether a prospective cultivator would operate efficiently or serve an underserved market segment. A weight-based license, by contrast, manages total output while preserving the Commission's ability to issue new licenses. It also gives existing cultivators clearer market signals: a weight-based license allows businesses to plan production and investment against a known regulatory constraint rather than reacting to ad hoc freezes.

Critically, a weight-based license is measurable and enforceable using data the Commission already collects. METRC records every harvest. Production can be monitored on a quarterly basis and evaluated against the licensee's annual cap using existing data fields. A canopy-based license, by contrast, would require the Commission to estimate production from area, the very exercise this memo has shown to be unreliable, given the threefold yield variability documented across commercial operations. The Commission cannot rationally manage statewide supply in grams by regulating inputs in square feet.

IV. The Proposed Framework: Annual Production-Weight Tiers with Quarterly Monitoring

Under the proposed system, cultivation license tiers would be defined by maximum grams of dried cannabis flower a licensee is authorized to produce per calendar year, rather than by maximum canopy square footage.

The Commission should codify in regulation the methodology currently used by the enforcement and investigation units, determining the weight produced from the final dried flower minus the waste and moisture losses. This eliminates ambiguity about wet versus dry weight and the treatment of waste. Indoor and outdoor cultivators would be held to the same annual production limits. The Commission would monitor production on a quarterly basis, using running METRC data to identify licensees approaching or exceeding their annual cap in advance of year-end, providing a more granular and timely regulatory signal than the current six-month or harvest-season review window. A weight-based system is indifferent to canopy configuration; a cultivator may use a sea-of-green, vertical racking, or any other method, so long as total annual output does not exceed the licensed amount.

The proposed tier structure is set out below. The tiers were calibrated using METRC production data from existing cultivators for the twelve-month period from Q3 2025 through Q2 2026, and are designed to accommodate the current distribution of licensee production levels while providing clear ceilings for each tier.

Tier	Maximum Annual Output (Indoor or Outdoor)	App. Fee Indoor	App. Fee Outdoor	Annual License Fee — Indoor	Annual License Fee — Outdoor
1	up to 5,000 kg	$200	$100	$1,250	$625
2	up to 10,000 kg	$400	$200	$2,500	$1,250
3	up to 15,000 kg	$600	$300	$5,000	$2,500
4	up to 20,000 kg	$2,000	$1,500	$20,000	$10,000
5	up to 25,000 kg	$2,000	$1,500	$22,500	$11,250
6	up to 30,000 kg	$2,000	$1,500	$25,000	$12,500
7	up to 35,000 kg	$2,000	$1,500	$30,000	$15,000
8	up to 40,000 kg	$2,000	$1,500	$35,000	$17,500

Table: Proposed Cultivation Tier Structure (Annual Production Weight). Application and annual license fees shown for indoor (I) and outdoor (O) operations.

New applicants, who by definition have no prior production history under METRC, would select a starting tier at the time of application and would be subject to that tier's annual cap as of the effective date of their final license. The Commission may adjust an applicant's starting tier during the licensing process where the applicant's business plan, capital resources, or facility capacity indicate that a different tier is warranted. Existing licensees would be transitioned to the weight-based tier corresponding to their actual production over the preceding twelve months, as discussed in Section VI.

V. Provisions of 935 CMR 500 and 935 CMR 501 Requiring Amendment

Transitioning to a weight-based tier system will require amendments to the following provisions of the Regulations, along with their parallel provisions in 935 CMR 501 governing Medical Marijuana Treatment Centers:

1. 935 CMR 500.002: Definition of "Canopy." The existing definition should be supplemented or replaced with a definition of "Annual Production Limit" (or equivalent term), defined as the maximum weight in grams of dried, trimmed cannabis flower a licensee is authorized to produce per calendar year. The canopy definition may be retained for premises-related regulatory purposes but would no longer serve as the basis for tier classification.

2. 935 CMR 500.002: Definition of “Outdoor Cultivation.” The current definition references canopy. It should be reviewed to ensure it does not implicitly incorporate canopy-based limits.

3. 935 CMR 500.005(1)(d): Tier Fee Structure. License fees currently scale with canopy-tier size. The fee schedule must be recalibrated to correspond to the proposed weight-based tiers as set out in Section IV.

4. 935 CMR 500.050(1)(b)(5), (8), and (9)(c): Application Requirements. Application provisions currently referencing canopy dimensions must be amended to require a projected annual production estimate in grams, along with the cultivation methods and operational plan supporting that estimate.

5. 935 CMR 500.050(2)(b): Tier Selection. The provision governing tier selection must be revised to reflect selection based on annual production weight rather than canopy square footage.

6. 935 CMR 500.050(2)(c): Tier Expansion. The tier expansion process, which currently relies on canopy-based classification and the “85%” sold threshold, should be replaced with a production-weight based expansion mechanism or eliminated as no longer necessary.

7. 935 CMR 500.050(2)(d): Tier Relegation. This provision requires the most substantive revision. The current standard, reducing a licensee’s tier if it “sold less than 70% of what it produced”, should be replaced with a direct production-cap enforcement mechanism, or eliminated in favor of the automated quarterly monitoring of annual caps contemplated by the new framework.

8. 935 CMR 501: Parallel Amendments. Corresponding provisions of 935 CMR 501 governing MTC cultivation activities must be amended in parallel to maintain consistency across the adult-use and medical-use frameworks.

VI. Implementation Considerations

The seed-to-sale tracking system already captures harvest weights at multiple stages. Implementing a weight-based tier would require the Commission to designate a single official measurement point. Most of this infrastructure already exists; the change is primarily definitional and regulatory rather than technological.

The transition should affect existing licensees as little as possible. Several implementation issues warrant the Commission's consideration:

First, as illustrated by the METRC data referenced in Section IV, the Commission already possesses data on what each licensee currently produces. Existing licensees should be automatically transferred into the tier that matches their trailing twelve-month production. Any cultivator whose production is within 20% of the maximum of their assigned tier should be moved to the next tier up, except for operators already at the highest tier.

Second, this tier structure may change the annual license fee for existing operators. Licensees should have the option to voluntarily elect a lower tier during the two quarters following promulgation of the amended regulations, so that operators who intend to reduce production are not locked into a higher fee obligation.

Third, the Commission should publish clear guidance for enforcement staff explaining how production is calculated and monitored on a quarterly basis for compliance with annual tier caps, so that licensees and staff apply the same methodology.

VII. Recommended Votes

The Commission is asked to take the following actions:

- That the Executive Director, under the delegated authority to renew license applications, shall flag for the Commissioners any cultivation license renewal application that is below 70% of the existing tier relegation calculation per existing regulations, but shall not remove said license renewal application from the Executive Director's renewal checklist on the basis of the 70% calculation alone.

- That the Executive Director direct the Legal Department to draft modifications to 935 CMR 500 and 935 CMR 501 consistent with this memorandum for consideration by the Commission at its September 2026 meeting.

- That the sections of the Regulations defining the processes for "Tier Expansion" and "Tier Relegation" be deleted within the next round of regulatory promulgation with the exception of licensees requesting voluntary relegation or expansion.

- That the Legal Department review the Regulations to remove the use of the term "canopy" and replace it with weight-based terms such as grams or kilograms of annual production, except where canopy remains relevant for non-tier purposes, and provide a red-line version for the Board's review at the Sept. 2026 meeting.

- That the Legal Department draft a penalty section imposing appropriate fines on licensees that produce more cannabis than their tier permits for the Board's review at the Sept. 2026 meeting.

- That, upon the passage of revised regulations, the licensing schedule be modified to reflect the weight-based licensing scheme discussed in this memorandum, and further that the Executive Director direct the Licensing and Enforcement Departments to prepare a memorandum explaining how this regulatory change will be implemented, specifically identifying how a weight-based system will change the review of cultivation license applications.

Regulatory Provisions Impacted by Eliminating Tier-Based Canopy Licensing

I. 935 CMR 500.000 – Adult Use

500.002 – Definitions

Impacted

- Canopy definition may need revision depending on whether canopy remains the measurement method.
- Outdoor Cultivation definition may need revision if licensing is no longer based on canopy size.
- Tier terminology throughout definitions should be removed.

500.005 – Fees

Current regulations establish:

- Tier 1–11 application fees
- Tier 1–11 annual license fees
- Craft Cooperative fees based on canopy tier
- Microbusiness fee structure based on Tier 1 cultivation
- Applicants select a cultivation tier during licensure

500.050 – Marijuana Establishments – Would require revisions throughout as many of the regulations are tied to the 100,000 maximum canopy cap limit.

Marijuana Cultivator

Would require revisions to:

- Tier classifications (Tier 1–11)

- License classes
- Tier Expansion
- Tier Relegation
- Tier Factors

Craft Marijuana Cooperative

Would require revisions to:

- License fees
- Tier classification
- Tier Expansion
- Tier Relegation
- Tier Factors
- Multiple cultivation location fee calculations

Marijuana Microbusiness

Current regulation limits cultivation to:

Tier 1 Marijuana Cultivator

This provision would require amendment if tiers no longer exist.

500.101 – Application Requirements

Would require revisions because applications currently require:

- Cultivation tier selection
- Tier-based information
- Fee calculations
- Canopy classification

Energy compliance provisions also reference Tier 1 and Tier 2 Microbusinesses and Craft Cooperatives.

500.102 – Action on Applications

Indirect impact.

Application review procedures currently rely upon the selected cultivation tier for approval.

500.103 – Licensure and Renewal

Would require revisions because:

- Renewal currently evaluates tier status.
- Updated energy compliance documentation references Tier 1 and Tier 2 facilities.
- License fee calculations depend upon cultivation tier.

500.104 – Notification and Approval of Changes

Current amendment process includes:

- Tier changes
- Canopy expansion approvals
- Reduction of canopy
- License amendments

If tiers disappear, a completely new canopy modification process would be required.

500.120 – Additional Operational Requirements for Cultivators

Operational requirements that reference:

- Tier classifications
- Tier-dependent energy compliance
- Canopy calculations would require review.

The operational cultivation requirements themselves may remain largely unchanged.

Control Limitations

Current regulations limit:

- 100,000 sq. ft. maximum canopy

- Distributed among cultivation licenses

II. 935 CMR 501.000 – Medical Use

501.005 – Fees

Medical cultivation fees tied to cultivation tiers would require revision.

501.050 – Medical Marijuana Treatment Centers

Major revisions required.

Current provisions include:

- Tier 1–11 classifications
- Initial tier selection
- Tier Expansion
- Tier Relegation
- Tier Factors

501.100 / 501.101 – Application Requirements

Applications currently require:

- cultivation tier
- canopy designation
- fee calculation

Would require revision.

501.103 – Licensure and Renewal

Renewal currently incorporates tier-related cultivation review.

Would require amendment.

501.104 – Notification and Approval of Changes

Tier change amendments would no longer exist.

A replacement canopy modification process would be necessary.

501.120 – Operational Requirements

Operational provisions referencing cultivation tiers or tier-based compliance would require revision.

III. Indirect Administrative Impacts (Outside the Regulations)

Although not regulatory text, eliminating tiers would also require updates to:

- MMJOS
- MassCIP
- Online licensing applications
- License certificates
- Renewal forms
- Amendment forms
- Standard Operating Procedures (SOPs)
- Guidance documents
- Internal workflows
- Public-facing webpages
- Fee calculators
- Reporting and data dashboards
- Seed-to-sale licensing workflows