Boston Cannabis Retail License Saturation Analysis

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Executive Summary

In 2023, the City of Boston commissioned a cannabis market saturation study to assess the potential economic and regulatory impacts of locating multiple cannabis retailers within a concentrated area, particularly in light of the City's half-mile buffer zone ordinance, and to determine whether proximity between retailers posed risks to market stability. Using a scoping review of available research, interviews with industry experts, and economic modeling from Whitney Economics, the study found minimal peer-reviewed evidence linking retailer proximity to negative market outcomes and concluded that Massachusetts' cannabis market was not saturated at the time (Fitzgerald & Whitney). Comparative analyses showed that the state maintained a mid-range number of retail stores per capita relative to other legalized markets, retained significant growth potential within its Total Addressable Market (TAM), and generated revenue levels that supported operator viability. Rather than indicating oversaturation, the findings suggested opportunities to expand access, reduce demand for illicit supply, and strengthen the economic sustainability of small and medium-sized operators.

This updated report builds on that foundation, offering new data, analyses, and considerations for Boston's licensing and buffer-zone decision-making in an evolving regional cannabis landscape. The following three goals are addressed in this report:

1. **Economic Impact - Market Saturation and Competition**: Determine what data or research is available on the impact of multiple cannabis licenses within a close proximity.
2. **Analyzing the Impact of Proximity Requirements on Retail Market Saturation:** Determine if there is a causal relationship between licensed premise locations within a half a mile proximity (as established in Article 8 of the Boston Zoning Code) and retail marijuana market performance (specifically market saturation).
3. **Research to Inform Buffer-Zone Exemption Reviews:** Provide the BCB with research findings that inform the BCB application review process for those applicants seeking to pierce the "buffer zone" (as established in the Rules and Regulations).

This report is intended to provide data and insights on the level of potential saturation at the retail level to address the three goals of the report. While access to cannabis is a key to converting consumers away from the unregulated market, issuing too many licenses and allowing a concentration of licensed premise locations have the potential to create economic stress for existing licensees and could result in individual wealth destruction.

There are many factors that go into assessing the health of an industry and the level of saturation. From federal taxation, access to financial services or interstate markets, to rental rates, health care, and labor costs. If the revenues required to operate a retail location are at or below the cost associated with that location, then neither the licensee nor the regulator will be successful. A careful analysis is required for each new license and licensed premise location to ensure the newer operator does not destabilize the rest of the market.

Massachusetts was one of the early east coast states to transition from a medical market to an adult-use market in 2016. While Massachusetts' deployment of its adult-use program and increase in the amount of legal participation unfolded over a period of time, demand growth has stalled since 2022 (Whitney Economics, 2025). Concerns about saturation of retail and cultivation licenses have surfaced as there is approximately one cultivator for every retailer, hence the basis of this report. This is driving excess supply and lower prices. Legal participation rates have leveled off, and supply excesses have driven down overall prices and profitability. While oversupply may be beneficial to consumers, it creates economic distress throughout the value chain. This is not something that most operators can work their way out of, nor is it an aspect of the market they can control operationally.

In order to assess the level of saturation in the Boston market, Whitney Economics has utilized a model that examines the minimum amount of revenue per year required to cover the costs of a retail operator. For an operator to remain viable and sustainable, a minimal revenue threshold is required. This is defined as the **Threshold of Economic Viability (TEV).** The TEV is the lowest amount of revenue necessary to maintain the long-term viability of a licensee. While operators may continue to operate below this threshold, they cannot do so in the long run, without coming under economic duress.

The use of the TEV model is a tool that can quickly assess whether a market is saturated, or if it is in balance (Whitney, 2024). If the market is approaching a saturation point, then operators need to understand this risk and the regulator may need to adjust their approach to licensure. Since May of 2024, the total number of licenses in some stages of issuance increased statewide from 564 to a total of 618. This is an increase of 9.6%. The 2025 sales are forecasted to again be $1.8 billion, so the average retail revenue per store is now $2.9 million. This is a decline of 8.9%. This average level of revenue per retailer is of concern as overall costs of operating dispensaries statewide have increased. With costs increasing and average revenues declining, it is of particular importance that the state and local regulators perform enhanced due diligence before issuing additional retail licenses and establishing new licensed premise locations to avoid market saturation.

Operating a retail facility in Boston requires more revenue than in other counties. In fact, in 2024, applying a common retail rental expense as well as average wages for the area, the TEV was $4.8 million and in 2025 this

amount increased 10.4% to $5.3 million. The increase in overall costs is due to the high retail rental rates (due to low vacancy rates), the higher-than-average wages, and the overall standard of living. While the overall expense to run a dispensary is high in the Boston area, each individual neighborhood may have a different cost structure. The cost structure could be influenced by such things as rent. In this revised report, at the request of the city of Boston, we determined the TEV by zip code by taking the average retail rents per zip code and lowering the average wages, using livable wage instead.

In this analysis, we took the same approach for each Boston zip code that we have done for each county in our TEV analysis (Fitzgerald & Whitney, 2023). In terms of methodology, we examined the total number of citizens in each zip code, determined how many of those citizens were older than 18 years (82% - 84%), how many of the adults were cannabis consumers and assigned an average spending rate to each consumer. Then based on the TEV value, determined how many retailers each zip code could support. In the initial analysis conducted in 2023, (Fitzgerald & Whitney, 2023) we did not consider the impact of tourism or the fact that there are a large number of commuters that live outside of Boston, but work in the city. We also did not consider those other neighborhoods that were proximate to each zip code. Considerations of the number of licenses that the market can bear at different TEV levels is listed in the Appendix B.

In the case of Boston, costs to operate a cannabis retail business have been increasing, while the average revenues and overall prices in the market have declined. At the same time, the regulated market has been successful in converting many of the unregulated consumers into the regulated market. Given the level of legal participation, growth in the future will slow and fewer opportunities will be available to increase revenues. When examined only based upon the residents living in each zip code area, the licenses are at or above the level of saturation. However, when adjusting for commuter and tourist demand, there is still an opportunity to issue more licenses and only in about one third of the zip codes in Boston. It will be increasingly important for regulators to refresh their saturation analysis on a regular basis. For once an area becomes saturated, it will result in economic challenges to existing operators. It is recommended that even now, each new license must be considered on a case-by-case basis.

Results of the Boston Analysis (by Zip Code)

The results of our models indicate that, if viewed only based on the resident population, Boston has pockets of the city where they are oversaturated with retail licenses while other zip codes are mostly in balance. This analysis is based on the TEV, the average revenue required to sustain each Boston location, which Whitney Economics has calculated as an average of $3.2 million per year or $267.8k per month (or roughly $8,927 per day). According to data from the BCB (J. Winn, personal communication, October 29, 2025), there are currently **61 retail licenses in some form of the approval process** associated with the Boston zip codes as of November 2025. However, the number of active licenses in Boston is 35. The total number of licenses required to support all non-tourist demand is 65 licenses. Therefore, at the current level of demand, with an expense level of $3.2 million per year, if all licenses come online, it appears that most Boston zip codes are mostly in balance based on the number of permanent residents in each zip code. Regulators are advised to survey operators to develop a more refined understanding of the cost structure of individual operators and locations so as to better assess the number of licenses that can be supported in a given area.

The Influence of Tourism and Commuters on Cannabis Demand Potential

One factor that is critically important when it comes to calculating the number of retailers a zip code can bear, is the number of workers that are commuting into the area each day. Based on the Boston Planning Department Research Division Analysis, there are close to 700,000 commuters working in Boston each day[1]. Commuters bring their purchasing power into the city and this can increase the total demand potential for cannabis in Boston. When accounting for the additional demand represented by the commuters, Boston has room to increase the number of retail licenses, but mainly in zip codes with high levels of commuter activity. The number of licenses that can be sustained increased from 66 to 127.

Acknowledgements

Whitney Economics and Community-Led Solutions appreciate the support of the Boston Cannabis Board (BCB), and the Massachusetts Cannabis Control Commission (MCCC) that have made this report possible.

[1] Boston Planning Department Research Division Analysis - Source: Census OnTheMap, All Jobs, 2023

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Whitney Economics and Community-Led Solutions do not take a position on the legalization of cannabis, nor do they take positions on proposed legislation; however, Whitney Economics does derive revenue from cannabis and hemp related companies and stakeholders. The views, opinions, and positions expressed in this paper are those of its authors Beau Whitney and Thérèse Fitzgerald and do not necessarily reflect the views, opinions, or official positions of any of our affiliated organizations, groups, or clients.

Background

In 2023, the City of Boston commissioned a cannabis market saturation study to understand the potential economic and regulatory impacts of siting multiple cannabis retailers within a concentrated geographic area, particularly in relation to the City's half-mile buffer zone ordinance. The original study (Fitzgerald & Whitney, 2023) combined a scoping review of national and international research, outreach to key stakeholders and subject-matter experts, and economic modeling provided by Whitney Economics. Despite widespread concerns among policymakers, business leaders, and community members, the review found very limited peer-reviewed evidence on the effects of proximity or density among cannabis retailers. Instead, the study relied on grey literature, market analyses, and cross-state comparisons, revealing that Massachusetts' cannabis market had not yet reached saturation and continued to show strong potential for growth.

Economic analysis conducted for the report indicated that Massachusetts had a relatively low ratio of retail stores per capita compared to established markets, substantial remaining demand within the Total Addressable Market (TAM), and above-threshold revenue levels for sustaining retail operations. Together, these findings suggested that, at the time, additional retail sites, even within close proximity, were unlikely to destabilize the market or threaten operator viability. Rather than signaling oversaturation, the data pointed to opportunities for expanding access, reducing reliance on illicit markets, and supporting the economic sustainability of small and mid-sized operators. The current report builds on those earlier findings, providing data analysis specific to Boston by zip code, providing updated data, new analyses, and refined considerations for Boston's licensing and buffer-zone decision-making in a rapidly evolving regional cannabis landscape.

The following report was created in response to the Office of Economic Opportunity & Inclusion (OEOI) Written Quote Contract (WQC) for a Researcher for a Cannabis Market Saturation Study (EV00016594) to provide an updated analysis of this previous cannabis market saturation study (Fitzgerald & Whitney, 2023) that reflects the current market conditions within a six (6) square mile area. The objective of this project is to conduct an analysis of the Boston Massachusetts retail cannabis market and based on this analysis, determine if retail licensure and licensed premise locations is either not saturated, approaching saturation or is over saturated. The data and research contained in this report are our own, based on proprietary modelling and have not been influenced by any entity outside of this team.

Objectives of this Report:

1. **Economic Impact: Market Saturation and Competition**: Determine what data or research is available on the impact of multiple cannabis licenses within a close proximity.
2. **Analyzing the Impact of Proximity Requirements on Retail Market Saturation:** Determine if there is a causal relationship between licensed premise locations within a half a mile proximity (as established in the Article 8 of the Boston Zoning Code) and retail marijuana market performance (specifically market saturation).
3. **Research to Inform Buffer-Zone Exemption Reviews:** Provide the BCB with research findings that inform the BCB application review process for those applicants seeking to pierce the "buffer zone" (as established in the Rules and Regulations).

Introduction

The U.S. cannabis market has evolved since 1999 when the State of California first adopted its medical cannabis program. States soon followed suit and access to regulated medical cannabis increased considerably. Then in 2014, the States of Colorado and Washington, through voter referendums, approved the expansion of medical regulated programs to include adult-use access. Now, 40 states have deployed medical cannabis regulatory programs, of which 24 states allow for adult-use sales.

Figure 1: State Cannabis Regulatory Evolution (Data as of July 2025)

Number	Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	United States	**15**	**16**	**17**	**19**	**23**	**23**	**29**	**30**	**33**	**34**	**35**	**37**	**38**	**39**	**40**	**40**
40	Nebraska															NE - M	NE - M
39	Kentucky														KY - M	KY - M	KY - M
38	Mississippi													MS - M	MS - M	MS - M	MS - M
37	Alabama												AL - M	AL - M	AL - M	AL - M	AL - M
36	South Dakota												SD - M/A	SD - M/A	SD - M/A	SD - M/A	SD - M/A
35	Virginia											VA - M	VA - A	VA - A	VA - A	VA - A	VA - A
34	West Virginia										WV - M	WV - M	WV - M	WV - M	WV - M	WV - M	WV - M
33	Utah									UT - M	UT - M	UT - M	UT - M	UT - M	UT - M	UT - M	UT - M
32	Oklahoma									OK - M	OK - M	OK - M	OK - M	OK - M	OK - M	OK - M	OK - M
31	Missouri									MO - M	MO - M	MO - M	MO - M	MO - M	MO - A	MO - A	MO - A
30	Florida								FL - M	FL - M	FL - M	FL - M	FL - M	FL - M	FL - M	FL - M	FL - M
29	Pennsylvania							PA - M	PA - M	PA - M	PA - M	PA - M	PA - M	PA - M	PA - M	PA - M	PA - M
28	Ohio							OH - M	OH - M	OH - M	OH - M	OH - M	OH - M	OH - M	OH - M	OH - A	OH - A
27	North Dakota							ND - M	ND - M	ND - M	ND - M	ND - M	ND - M	ND - M	ND - M	ND - M	ND - M
26	Georgia							GA - M	GA - M	GA - M	GA - M	GA - M	GA - M	GA - M	GA - M	GA - M	GA - M
25	Louisiana							LA - M	LA - M	LA - M	LA - M	LA - M	LA - M	LA - M	LA - M	LA - M	LA - M
24	Arkansas							AR - M	AR - M	AR - M	AR - M	AR - M	AR - M	AR - M	AR - M	AR - M	AR - M
23	New York					NY - M	NY - M	NY - M	NY - M	NY - M	NY - M	NY - M	NY - A	NY - A	NY - A	NY - A	NY - A
22	Minnesota					MN - M	MN - M	MN - M	MN - M	MN - M	MN - M	MN - M	MN - M	MN - M	MN - A	MN - A	MN - A
21	Maryland					MY - M	MY - M	MY - M	MY - M	MY - M	MY - M	MY - M	MY - M	MY - M	MY - A	MY - A	MY - A
20	Illinois					IL - M	IL - M	IL - M	IL - M	IL - M	IL - M	IL - A	IL - A	IL - A	IL - A	IL - A	IL - A
19	Massachusetts				MA - M	MA - M	MA - M	MA - A	MA - A	MA - A	MA - A	MA - A	MA - A	MA - A	MA - A	MA - A	MA - A
18	New Hampshire				NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M	NH - M
17	Connecticut			CT - M	CT - M	CT - M	CT - M	CT - M	CT - M	CT - M	CT - M	CT - M	CT - A	CT - A	CT - A	CT - A	CT - A
16	Delaware		DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - M	DE - A	DE - A	DE - A
	District of Columbia	DC - M	DC - M	DC - M	DC - M	DC - M	DC - A	DC - A	DC - A	DC - A	DC - A	DC - A	DC - A	DC - A	DC - A	DC - A	DC - A
15	New Jersey	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - M	NJ - A	NJ - A	NJ - A	NJ - A	NJ - A
14	Arizona	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - M	AZ - A	AZ - A	AZ - A	AZ - A	AZ - A
13	Michigan	MI - M	MI - M	MI - M	MI - M	MI - M	MI - M	MI - M	MI - M	MI - M	MI - M	MI - A	MI - A	MI - A	MI - A	MI - A	MI - A
12	New Mexico	NM - M	NM - M	NM - M	NM - M	NM - M	NM - M	NM - M	NM - M	NM - M	NM - M	NM - M	NM - A	NM - A	NM - A	NM - A	NM - A
11	Rhode Island	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - M	RI - A	RI - A	RI - A	RI - A
10	Vermont	VT - M	VT - M	VT - M	VT - M	VT - M	VT - M	VT - M	VT - M	VT - M	VT - M	VT - A	VT - A	VT - A	VT - A	VT - A	VT - A
9	Montana	MT - M	MT - M	MT - M	MT - M	MT - M	MT - M	MT - M	MT - M	MT - M	MT - M	MT - M	MT - A	MT - A	MT - A	MT - A	MT - A
8	Nevada	NV - M	NV - M	NV - M	NV - M	NV - M	NV - M	NV - M	NV - A	NV - A	NV - A	NV - A	NV - A	NV - A	NV - A	NV - A	NV - A
7	Colorado	CO - M	CO - M	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A	CO - A
6	Hawaii	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M	HI - M
5	Maine	ME - M	ME - M	ME - M	ME - M	ME - M	ME - M	ME - M	ME - A	ME - A	ME - A	ME - A	ME - A	ME - A	ME - A	ME - A	ME - A
4	Alaska	AK - M	AK - M	AK - M	AK - M	AK - M	AK - A	AK - A	AK - A	AK - A	AK - A	AK - A	AK - A	AK - A	AK - A	AK - A	AK - A
3	Oregon	OR - M	OR - M	OR - M	OR - M	OR - M	OR - M	OR - A	OR - A	OR - A	OR - A	OR - A	OR - A	OR - A	OR - A	OR - A	OR - A
2	Washington	WA - M	WA - M	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A	WA - A
1	California	CA - M	CA - M	CA - M	CA - M	CA - M	CA - M	CA - M	CA - M	CA - A	CA - A	CA - A	CA - A	CA - A	CA - A	CA - A	CA - A

Source: Whitney Economics, state regulatory agencies, NORML, MPP and NCIA

Massachusetts first approved medical cannabis in 2012 and then approved the expansion of its adult-use program in 2016. As is typical of most medical states, it took a while for the state to transition to an adult-use program and for it to become operational. As one of the first adult-use programs on the east coast, sales of

cannabis for adult-use purposes ramped up quickly. This is also a common trait for states transitioning from a medical program to an adult-use one.

Key Elements That Determine Success or Failure in a State Regulatory System

Just because a regulated adult-use or medical market is deployed does not guarantee the success of the program. There are several key factors that influence the level of success a regulatory program will have. Each factor influences another, so striking a balance between the elements is challenging. Despite the fact that many new or emerging states look to previous rollouts for guidance, no one model has emerged as the one to duplicate exactly. Each regulatory program has strengths and weaknesses and is unique. **Price, structure, supply,** and **access** determine the success of a rollout and are the four key factors of the analysis in this report.

Price of cannabis relative to the illicit market – Consumers are extremely cost conscious when it comes to making a purchasing decision. Regular consumers are savvy enough to know the differences in price in the legal and illicit channels. If the difference in price is too great, where illicit prices are lower than legal, the pace of conversion by consumers into the legal channel will slow considerably.

Regulatory structure – Regulatory structure plays a role in the success or failure of a program, since it can influence the amount of access a consumer may have to cannabis products or the amount of supply available. Regulations can also influence the potential success of the licensees. Maintaining a healthy group of licensees is a major challenge for regulators. If licensees are not profitable, or face operational challenges, the regulators may unintentionally create externalities, such as diversion, that may exacerbate public safety related issues.

Supply of cannabis – Supply plays a major role in the success of a regulated market. If there is too little supply, prices will remain elevated, and consumer participation in the legal market will slow. If the supply is in excess, prices will fall, which increases legal consumer participation, but if prices fall too much, it may result in a lack of profitability, economic stress, and poor decisions by operators when it comes to diversion and public safety.

Consumer access to cannabis – Consumer access helps to reduce the influence of the illicit market and helps drive legal participation. Consumers will drive up to 30 minutes to purchase cannabis products legally, however if they have to travel too far, legal participation declines (Barcott & Whitney, 2022). The more access a consumer has, then better economic opportunities there are for the entire cannabis supply chain (Whitney Economics, 2021).

The key is to incentivize consumer conversions INTO the legal market. Without access to legal cannabis, the choice is already made.

Overall Cannabis Retail Market Conditions

The Federal Influence

Despite federal illegality, federal policy has a major influence on the state regulated cannabis markets. There are three major federal issues; 1) IRS 280E tax policy, 2) the lack of access to traditional financial services, and 3) the

inability to conduct interstate commerce. When determining state and local regulatory policy, it is important to consider the entire regulatory and tax environment and the impact policies have on cannabis licensees.

280E Tax Policy

Federal taxation is the source of a major expense for cannabis operators, especially retailers. Due to the federal illegality of cannabis, operators are not able to deduct all normal and ordinary expenses that other businesses can. As a result, the effective tax rate can exceed 65% - 75%. **Tax liabilities are one of the main reasons for the lack of profitability in the cannabis industry, along with over saturation of supply and licenses (Hoffman & McDonald, 2024; McVey, 2023).** Some states have attempted to provide relief at the state level on taxes but have had only a limited impact on each retailer's bottom line.

The Lack of Access to Traditional Financial Services

Due to the federal illegality of cannabis, banks are very cautious about offering financial services to cannabis operators. The compliance costs to monitor these accounts are very high and those costs are passed on to the operators. In some states, a simple checking and savings account can cost $500 to $5,000 per month to obtain. In addition, the lack of access to finance drives up costs in other areas. Access to insurance and bridge loans are limited and typically come at a much higher cost to the operator. It is not uncommon to have an interest rate of 33% - 40% on loans, while larger firms can obtain financing at a rate of 15% - 20% per annum. **These increased costs can make a difference when it comes to profitability but also in terms of being able to maintain existing operations.** For perspective, for every 1% increase for a $2.0 million loan, the operator must pay an additional $20,000 in interest payments alone each year.

Interstate Commerce

All current state regulated cannabis programs require any cannabis that is grown or processed in a given state to be sold and remain in that state. The effect of this policy is that it places a cap on the demand potential in each market (there are only a limited number of consumers in each state), and it does not allow for large economies of scale that can drive down costs. Many state-regulated programs tend to oversupply the market, and retailers do not have the ability to expand their market or increase demand. This oversupply issue impacts the entire supply chain in a given state as the imbalance between supply and demand drives down prices and impacts profitability. If cannabis could be sold in other states, the market would normalize, sales would increase, supply and demand would come back into balance and overall costs would be reduced.

Federal Summary

With higher taxes, higher cost of capital and a cap on the demand leading to lower prices, federal cannabis policy plays an important role in the success or failure of businesses in state markets. These costs are a major contributor to the lack of profitability. A change in any one of these areas would lower the cost to cannabis operators and improve the health of the overall market.

Other Market Conditions that have Shaped the U.S. Markets:

The Covid Bump

During the period from 2020 to 2022, cannabis demand increased dramatically across the U.S., with Massachusetts nearly tripling in sales during that time period. Cannabis retailers were considered essential services and operators innovated as they had to "do more with less" as a result of distancing and workplace restrictions. This drive towards efficiency was critical, as fewer and fewer operators nationwide were profitable, despite the increase in sales.

As Profitability was Challenged, Emphasis Shifted from Opportunity to Operator Health

With the increase in demand during covid, many operators felt that this surge in demand would continue indefinitely, however, macro-economic conditions combined with return-to-work policies resulted in a major reset of the spending patterns of the cannabis consumer. No longer did consumers spend roughly the same amount each month. When market prices declined, they did not add to their basket amounts in order to make up the difference. Consumer purchasing patterns changed and basket amounts declined. Profitability soon became a challenge throughout the U.S. cannabis markets, but it was more pronounced in markets where the regulated market had matured. By 2023/2024, Massachusetts would be considered a mature market. Policies related to saturation are particularly important when it comes to minority ownership and profitability potential, as evidenced by the data in Table 1.

Table 1: U.S. Cannabis Operator Profitability Based on Ownership Category

Profitability	Race	2022	2023	2024
Profitable	White	45.67%	28.85%	33.72%
	Non-White	32.18%	14.71%	17.54%
Breaking Even	White	19.00%	32.69%	38.37%
	Non-White	24.14%	38.24%	43.86%
Not profitable	White	35.33%	38.46%	27.91%
	Non-White	43.68%	47.06%	38.60%

Source: Whitney Economics U.S. Cannabis Business Conditions Survey, (2022, 2023, 2024)

Objective 1. Economic Impact: Market Saturation and Competition

Data and Research on the impact of multiple cannabis licenses within a close proximity.

A main worry is that clustering cannabis dispensaries could lead to *market oversaturation,* where supply exceeds local demand and stores cannibalize each other's sales. Experiences in more mature cannabis markets support this caution. Evidence from several U.S. states and Canadian provinces demonstrates that rapid expansion of cannabis retail outlets can lead to market saturation, declining revenues, and industry consolidation. Colorado, one of the earliest adult-use markets, following the state's legalization of recreational cannabis, saw sales peak at approximately $2.2 billion in 2020. By 2023, however, total statewide sales had fallen to $1.5 billion,

representing roughly a 30% decline (Zhang, 2024). During this period, the number of active cannabis business licenses decreased by 16% from 2022 to 2023 as dispensaries faced financial strain and closures (Zhang, 2024). Analysts have attributed this contraction in part to an oversaturated retail landscape, intensified competition, falling cannabis prices, and increased competition from newly legalized states (Zhang, 2024). Colorado's experience has been characterized as a "cautionary tale," prompting other jurisdictions, such as New York, to slow license issuance to avoid similar market instability (Zhang, 2024).

Market saturation frequently precipitates what industry observers describe as a retail "shakeout." In highly competitive environments, such as Denver in late 2022, retailers reported sharp declines in sales and began aggressively reducing prices to maintain customer traffic (Sanchez, 2022). This cycle of heightened competition, narrowing profit margins, and subsequent closures typically results in only the most efficient or well-capitalized businesses surviving an expected pattern in oversupplied markets (Sanchez, 2022).

Comparable saturation dynamics have emerged in Ontario, Canada. After national cannabis legalization in 2018, Ontario experienced rapid growth in retail store openings. By 2024, however, the province reached a saturation threshold: 234 new stores opened in 2024, while 214 stores closed that same year, a 52% year-over-year increase in closures. Toronto alone saw 43 store closures in 2024 (StratCann Staff, 2025). As margins remained slim and retailers continued to face barriers such as limited banking access and persistent illicit market competition, many businesses reported difficulties remaining profitable in an increasingly crowded market (StratCann Staff, 2025).

Some U.S. states with particularly liberal licensing frameworks have experienced even more pronounced oversupply. Oregon, for example, issued a high volume of cultivation and retail licenses early in its legalization timeline. As a result, the state produced substantially more cannabis than its residents could consume, leading to steep declines in wholesale prices and eventually prompting regulators to halt issuance of new licenses (Quinton, 2019). These oversupply conditions often translate into dense clusters of retail outlets competing for a customer base that cannot sustain them.

Implications for Boston

These national and international cases offer meaningful insights for Boston. If dispensaries cluster too densely within particular neighborhoods, they may draw from the same limited pool of consumers. Saturation can reduce per-store sales, increase financial risk, and threaten overall market stability. Boston's City Council has similarly cautioned that eliminating the city's half-mile buffer zone could "saturate the market" and negatively affect existing operators (The Boston Sun Staff, 2024). At the same time, modest clustering may provide consumer benefits, such as competitive pricing and convenience, and could create destination-style retail districts.

Overall, evidence from Colorado, Ontario, Oregon, and other markets suggests that Boston's current buffer-zone policy was designed to mitigate saturation risk. Relaxing the buffer may increase short-term licensing activity, but if demand does not rise proportionally, some retailers may become economically vulnerable. As the Boston

Cannabis Board (BCB) continues to examine these issues, comparative experience underscores the importance of balancing equitable access, sustainable retail density, and market health (Faraone, 2025).

Three Kinds of Cannabis State Market: Mature, Ramping and Emerging

Despite many obstacles, the U.S. market has continued to grow. The source of national growth is coming from newer emerging states. For perspective, states in our national analysis are broken out into three categories: 1) Mature states, 2) Emerging state markets, and 3) New state markets.

1. **Mature state markets** have deployed legal programs and have converted a majority of the total potential demand into the legal marketplace. Consumer legal participation rates have been maximized at between 80% and 85%. **The state of Massachusetts would be considered a mature state market since it has a legal participation rate of 85.4%.**
2. **Emerging state markets** are states that have deployed legal regulatory programs but are still in the process of converting consumers away from the illicit market and into the legal one. Emerging states tend to be the source of the largest amount of growth and are the largest contributors to growth from 2024 through 2030 and beyond.
3. **New state markets** are those that have just recently deployed a legal program but are still in their first few years of operation. Newer states tend to have large amounts of demand remaining supported by illicit suppliers. In recent years, mature markets have seen a general decline in their overall markets, or whose growth has leveled off. Emerging and newer states are still experiencing growth as they continue to convert consumers into their legal systems.

Even with this set of complex market conditions, the total legal revenues associated with cannabis sales in the U.S. totaled $30.1 billion in 2024. Therefore, legal U.S. cannabis retail sales were an average of $2.5 billion per month. This was an increase from $28.8 billion the year before (Vangst Cannabis Jobs Report, 2024). It is notable that in 2025, the U.S. regulated cannabis market declined in terms of total revenues. Revenues in the U.S. totaled $29.1 billion. 22 out of the 40 states experienced sales declines, mainly due to over-supply. Both supply and demand factors must be considered in the licensing process. Otherwise, revenues could erode to the point where an area may become saturated even without new licenses being issued.

As the Market Evolves so must Regulatory Policies, particularly When it comes to Licensing and Saturation
As each state adult-use market evolves from a new market, to an emerging one and then into maturity, every stage of this evolution represents a different challenge to the regulator. For example, if a regulator in a new market issues too many cultivation licenses, there may be an abundance of supply and not enough access by the consumer. If there are too few licenses, prices remain elevated, but consumer conversions into the legal market slow. If the regulator in a mature market issues too many licenses, then supply may be in excess, prices fall resulting in greater consumer participation, but margins compress and companies face a challenge making a profit. **As a state enters into the mature stage of its market evolution, it is particularly important for regulators to monitor the number of licenses it is issuing.** If they issue too many, on average, operators will have lower revenues resulting in potential economic distress.

Objective 2. Analyzing the Impact of Proximity Requirements on Retail Market Saturation

Determine if there is a causal relationship between licensed premise locations within a half a mile proximity (as established in the Article 8 of the Boston Zoning Code) and retail marijuana market performance (specifically market saturation).

Previous Saturation Analysis

A previous analysis produced by Community-Led Solutions with contributions from Whitney Economics published February 27th, 2023, showed that given the growth forecasted in the market for 2023 and 2024, there was room for further license issuance. Based on the number of approved licenses, it showed that the average retail revenues in Massachusetts ($3.9 million) were above the level of revenue required for retailers to be both viable and sustainable ($2.7m - $3.3 in 2024 million). Since that time, the number of licensed retailers in the state (i.e., 455 in 2023) has since grown to over 600 in 2025 (MCCC Report, 2025, page 630). During this same period, the total revenue for cannabis in Massachusetts has leveled off. This means that the average revenue per retailer has declined from $3.9 million in 2023 to an average of $2.9 million projected in 2025. This comes at a time when the costs associated with running a cannabis retail outlet are increasing.

Table 2: Average Cannabis Retail Revenue based on Approved Licenses

	2023	2024	2025
Total Sales / Forecast	$1,792,400,000	$1,822,200,000	$1,817,714,473
Number of Retail Licenses (MA)	455	564	618
Average Sales per Retailer	$3,939,340.66	$3,230,851.06	$2,941,285.55

Source: Massachusetts Cannabis Control Commission, 2025, Whitney Economics

It is important to note that not all of the approved licenses are operational. When the average revenue per retailer is examined based only on those locations that are active and operational, the average revenue has declined from $5.2 Million per location in 2024 to $4.6 million in 2025 (See Table 3). For some locations, this level of revenue is below the amount when a location can be considered viable and sustainable.

Table 3: Average Cannabis Retail Revenue based on Active & Operational Licenses

	2024	2025
Total Sales / Forecast	$1,822,200,000	$1,817,714,473
Number of Retail Licenses (MA)	353	397
Average Sales per Retailer	$5,162,039.66	$4,578,625.88

A privately funded analysis and report conducted by Whitney Economics and published in May 2024 on the Massachusetts retail market assessed the potential impacts of allowing more licenses to be owned under a single entity. The report showed that there was some room for additional licensure, however given the increased costs and flat revenues, Massachusetts was beginning to approach the theoretical maximum number of retail licenses. The report suggested that, "The additional licensure at retail, if measured, will not appreciably increase the influence of larger firms. Although average revenues will decline with more licenses, if managed appropriately by the MCCC, the impact on small businesses will not be to the extent that it challenges their viability" (Whitney Economics, 2024, p. 2).

With the additional licenses in 2025 along with the higher costs to run a retail outlet (especially rents and labor), the fundamentals of the market have changed to the point where, based on the number of retail licenses in process, markets are becoming saturated to the point where in some locations, no additional licenses are recommended.

Objective 3. Research to Inform Buffer-Zone Exemption Reviews:

Provide the BCB with research findings that inform the BCB application review process for those applicants seeking to pierce the "buffer zone" (as established in the Rules and Regulations).

How Many Licenses are Too Many Licenses?

Whitney Economics has determined what is called the Threshold of Economic Viability (TEV). It defines the minimum amount of revenue the operator needs to remain viable and sustainable. If the revenues dip below this point, then operators must cut costs or face going out of business. (See Appendix A for a detailed methodology). A regulator does not need to issue large amounts of licenses all at once. They can issue them over time and in line with the level of legal participation. The TEV model examines the number of licenses that are in balance with the growth of the overall market. It will allow a regulator the opportunity to balance supply and demand while maximizing legal participation. This will keep prices more stable and give operators time to assess and adjust to the dynamic market conditions that exist in the cannabis industry. Legal participation and revenue growth are very predictable in cannabis. This analysis will examine whether or not Boston has issued too many licenses, not enough or just enough to keep the licensees healthy. Not all counties require the same amount of revenue for a group of licenses to be viable and sustainable. See Table 4 for a summary of what the TEV values are by county. Note that Suffolk County, the county that Boston is located in, has a substantially higher TEV than other counties.

Table 4: The Threshold of Economic Viability by County

Massachusetts	TEV Sales	Product acquisition costs	Labor units	Ave Wages by county (wkx52)	Labor Cost	280E Taxes	*Remainder for all other expenses (rent, debt service, health care, etc.)*
Barnstable County	$3,200,000	$1,600,000	10	$68,536	$685,360	$336,000	***$112,115***
Berkshire County	$3,250,000	$1,625,000	10	$70,824	$708,240	$341,250	***$101,961***
Bristol County	$3,225,000	$1,612,500	10	$69,992	$699,920	$338,625	***$103,437***
Dukes County	$3,450,000	$1,725,000	10	$75,972	$759,720	$362,250	***$107,553***
Essex County	$3,650,000	$1,825,000	10	$81,276	$812,760	$383,250	***$111,345***
Franklin County	$2,700,000	$1,350,000	10	$55,120	$551,200	$283,500	***$104,435***
Hampden County	$3,075,000	$1,537,500	10	$65,468	$654,680	$322,875	***$106,894***
Hampshire County	$3,000,000	$1,500,000	10	$62,816	$628,160	$315,000	***$113,123***
Middlesex County	$4,850,000	$2,425,000	10	$115,000	$1,150,000	$509,250	***$112,170***
Nantucket County	$3,700,000	$1,850,000	10	$83,044	$830,440	$388,500	***$107,192***
Norfolk County	$4,050,000	$2,025,000	10	$92,300	$923,000	$425,250	***$114,128***
Plymouth County	$3,450,000	$1,725,000	10	$75,192	$751,920	$362,250	***$116,554***
Suffolk County	$5,300,000	$2,650,000	10	$127,500	$1,275,000	$556,500	***$114,170***
Worcester County	$3,500,000	$1,750,000	10	$77,428	$774,280	$367,500	***$107,001***

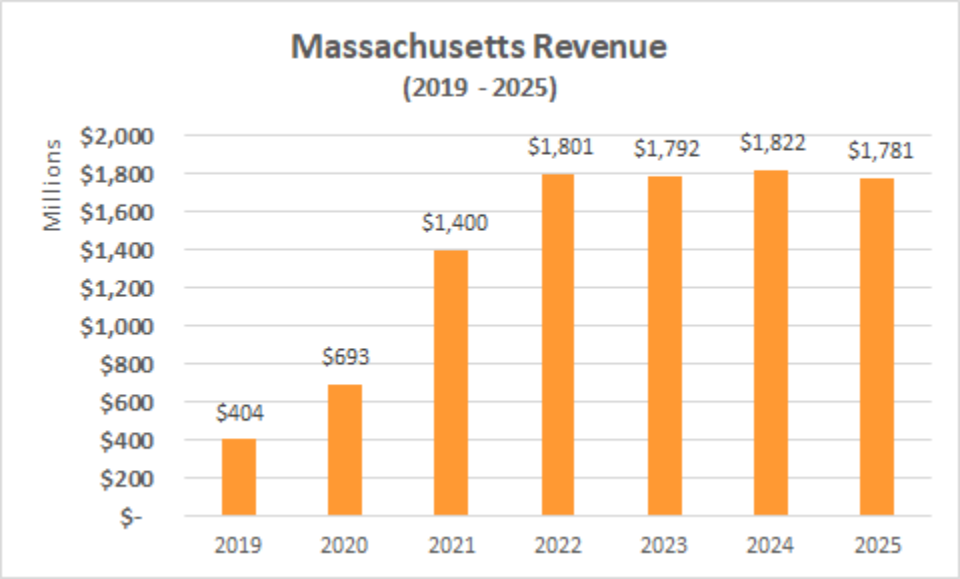
About the Massachusetts Retail Cannabis Market

Massachusetts was one of the early east coast states to transition from a medical market to an adult-use market in 2016. While Massachusetts took a while to deploy its adult-use program and increase the amount of legal participation, demand growth has stalled since 2022. Concerns about saturation of retail and cultivation licenses have surfaced as there is approximately one cultivator for every retailer. This is driving excess supply and lower prices. Legal participation rates have leveled off, and supply excesses have driven down overall prices and profitability. While oversupply may be beneficial to consumers, it creates economic distress throughout the value chain. This is not something that most operators can work their way out of, nor is it an aspect of the market they can control operationally.

Massachusetts Retail

The Massachusetts retail cannabis market statewide has been in expansion mode for several years (See Chart 1). In an analysis of the market in May of 2024, there were a total of 564 retail licenses in some form of the approval process. (514 Approved, 13 pending, and 37 reopened). Of this amount, 353 had commenced operations. With a total of 2024 sales of $1.8 billion, the average sales per license were $5.1 million (based on the 353) or $3.2 million per store (based on 564). In May of 2024, the average revenue a retailer needed to generate was between $2.7 million and $3.3 million, however in the Boston area the average revenue was closer to $4.8 million due to the high cost for labor, rents and overall standard of living.

Chart 1: Massachusetts Retail Revenue Growth (2019-2025)



Source: Massachusetts CCC, Whitney Economics

Retail Licenses have Increased Over the Past Year; Costs have Increased as Well.
Since May of 2024, the total number of licenses in some stages of issuance increased statewide from 564 to a total of 618 (MCCC, 2025, p.630) This is an increase of 9.6%. Sales in 2025 are forecasted to again be $1.8 billion, so the average retail revenue per store is now $2.9 million. This is a decline of 8.9%. This average level of revenue per retailer is of concern as overall costs of operating dispensaries statewide have increased. In order to cover the increased costs, the average retailer in Boston will need to generate approximately $3.2 million per year.

About the Boston Cannabis Market
Operating a retail facility in Boston requires more revenue than in other counties. In fact, in 2025, the TEV, the average revenue required to sustain each Boston location based on zip code, was $3.2 million The increase in overall costs is due to the high retail rental rates (Due to low vacancy rates), the higher-than-average wages, and the overall standard of living. The increase in costs is offset by the fact that Boston is a major tourism hub, with 2.5 million annual visitors each year (Road Genius, 2025). These tourists spent over $3.0 billion in Boston, even more across the state ($24.2 billion). Cannabis related tourism cannot be underestimated when it comes to Boston cannabis retailers. A well-located cannabis retailer can generate significant revenues just based on tourist spends alone. We have attempted to adjust for the impact of canna-tourism in our analysis as well as for the commuter traffic; however, the impact of each is not equal for every high tourist zip code. The question then becomes, does the increase in tourism and commuter-based revenues cover the costs of the Boston retailer. In our assessment, it is close and depends upon location and zip code.

Analyzing for Boston Saturation (Methodology)

In our analysis, we took the same approach for each Boston zip code that we have done for each county in our TEV analysis. In terms of methodology, we examined the total number of citizens in a given zip code, determined how many of those citizens were older than 18 years (82% - 84%), how many of the adults were cannabis consumers (we used 33%) and assigned an average spending rate to each consumer. Then based on the TEV value, determined how many retailers each zip code could support. In our initial analysis we did not consider the impact of tourism, nor did we consider those other neighborhoods that were proximate to each zip code. Considerations of the number of licenses that the market can bear at different TEV levels are listed in the Appendix. The tables outlining the full analysis are also included in the Appendix.

In terms of meeting the objective of this report, we chose an analysis by zip code as much of the data on population, rents, and earnings were aligned with the zip code format. It assumed that zip codes could serve as a proxy for "proximity" and "close proximity." This was used in lieu of a 6 square mile radius, as zip codes are a more common source of data such as population, individual income and consumers that are used to determine the potential of the local markets. At the request of the city, we adjusted our earlier analysis by accounting for commuter-based consumers and also considered the average retail rental rates by zip code. This was able to refine the TEV calculations.

Data Summary: Boston

- Boston has requested an analysis of the retail cannabis sector from a license saturation perspective.
- Boston currently has between 61 retail dispensaries based on Boston zip codes, 35 of which are active and operational.
- At a time when the costs to businesses are rising (i.e., wages, rents, health care, etc.) the average revenues for cannabis retailers in Massachusetts are declining. Declining product acquisition costs are not sufficient to offset rising operational costs.
- At some point, the revenues for each cannabis retailer will not be able to keep their business viable or sustainable.
- This point, called the Threshold of Economic Viability (TEV), is coming into play for Boston cannabis retailers.
- The statewide average cannabis retail level has recently crossed below this line of viability, resulting in economic distress for retailers.
- It is recommended that the State and City regulators closely examine the process of new license issuance.

Results of the Boston Analysis (by Zip Code)

The results of our models indicate that Boston has pockets of the city where they are over saturated with retail licenses while other zip codes are in balance. This analysis is based on the average revenue required to sustain each Boston location (i.e., TEV) is $3.2 million per year or $267.8k per month (or roughly $8,927 per day).

According to data from the BCB (J. Winn, personal communication, October 29, 2025), there are currently 61 retail licenses in some form of the approval process associated with the Boston zip codes as of November 2025. However, the number of active licenses in Boston is 35. The total number of licenses required to support all non-tourist demand is 66 licenses. The three zip codes that have the greatest imbalance are 02124, 02127 and 02109. Table 4 has a breakdown of the difference between the number of licenses that each zip code could support versus how many are in process or have been approved (i.e., "theoretical licenses").

Table 4: Approved Licenses vs. Theoretical Licenses in Boston (by Zip Code)

Rank	ZIP Code	Neighborhood	Population	adult-population (0.84x)	Cannabis Consumers (.33x)	Value of market	TEV	Number of dispensaries to support local demand	Current licenses	Difference
1	02124	Dorchester	55,897	46,953.5	15,494.6	$17,818,846	*$3,213,913*	5.5	2	3.5
2	02128	East Boston	44,124	37,064.2	12,231.2	$14,065,849	*$3,150,000*	4.5	5	(0.5)
3	02135	Brighton	43,683	36,693.7	12,108.9	$13,925,267	*$3,180,000*	4.4	4	0.4
4	02130	Jamaica Plain	41,109	34,531.6	11,395.4	$13,104,727	*$3,150,000*	4.2	3	1.2
5	02136	Hyde Park	38,071	31,979.6	10,553.3	$12,136,273	*$3,060,000*	4.0	2	2.0
6	02127	South Boston	36,646	30,782.6	10,158.3	$11,682,012	*$3,180,000*	3.7	1	2.7
7	02125	Savin Hill (Dorchester)	33,069	27,778.0	9,166.7	$10,541,736	*$3,213,913*	3.3	2	1.3
8	02131	Roslindale	31,564	26,513.8	8,749.5	$10,061,972	*$3,090,000*	3.3	5	(1.7)
9	02115	Fenway	28,621	24,041.6	7,933.7	$9,123,802	*$3,210,000*	2.8	3	(0.2)
10	02118	South End	28,522	23,958.5	7,906.3	$9,092,243	*$3,270,000*	2.8	2	0.8
11	02121	Dorchester (Central)	28,298	23,770.3	7,844.2	$9,020,836	*$3,120,000*	2.9	1	1.9
12	02132	West Roxbury	27,069	22,738.0	7,503.5	$8,629,056	*$3,120,000*	2.8	3	(0.2)
13	02119	Roxbury	26,851	22,554.8	7,443.1	$8,559,562	*$3,120,000*	2.7	2	0.7
14	02126	Mattapan	25,313	21,262.9	7,016.8	$8,069,278	*$3,090,000*	2.6	2	0.6
15	02215	Fenway-Kenmore	24,054	20,205.4	6,667.8	$7,667,934	*$3,213,913*	2.4	2	0.4
16	02122	Fields Corner	23,471	19,715.6	6,506.2	$7,482,085	*$3,213,913*	2.3	3	(0.7)
17	02116	Back Bay	22,040	18,513.6	6,109.5	$7,025,911	*$3,660,000*	1.9	3	(1.1)
18	02129	Charlestown	19,994	16,795.0	5,542.3	$6,373,687	*$3,180,000*	2.0	2	0.0
19	02134	Allston	17,637	14,815.1	4,889.0	$5,622,323	*$3,180,000*	1.8	4	(2.2)
20	02120	Mission HIll	15,248	12,808.3	4,226.7	$4,860,757	*$3,210,000*	1.5	2	(0.5)
21	02114	West End	13,853	11,636.5	3,840.1	$4,416,059	*$3,270,000*	1.4	1	0.4
22	02111	Chinatown	8,067	6,776.3	2,236.2	$2,571,598	*$3,300,000*	0.8	1	(0.2)
23	02210	South Boston Waterfront	6,554	5,505.4	1,816.8	$2,089,284	*$3,240,000*	0.6	0	0.6
24	02113	North End	6,522	5,478.5	1,807.9	$2,079,083	*$3,300,000*	0.6	0	0.6
25	02108	Beacon Hill	4,178	3,509.5	1,158.1	$1,331,863	*$3,300,000*	0.4	1	(0.6)
26	02109	Downtown	3,714	3,119.8	1,029.5	$1,183,949	*$3,330,000*	0.4	4	(3.6)
27	02110	Seaport / Financial District	2,178	1,829.5	603.7	$694,303	*$3,213,913*	0.2	1	(0.8)
28	02163	Brighton (Other)	1,852	1,555.7	513.4	$590,381	*$3,213,913*	0.2	0	0.2
29	02199	Back Bay (Other)	1,253	1,052.5	347.3	$399,431	*$3,213,913*	0.1	0	0.1
Total						**$210,220,109**	***$3,213,913***	**66**	**61**	**5.0**

Source: Whitney Economics

With those zip codes that have a difference between the number of licenses issued and the number of licenses that the area can support, greater than one license in either direction, a more in-depth analysis must occur before a license decision can be made.

Active license saturation analysis

When examining the Boston area solely on the basis of active licenses, the results paint a different picture when it comes to saturation. When comparing the number of licenses that the market could theoretically bear versus how many have been issued, there is less concern about saturation. **Under this scenario, each zip code is mostly in balance.**

Table 5: Active Licenses vs. Theoretical Licenses in Boston (by Zip Code)

Rank	ZIP Code	Neighborhood	Population	adult-population (0.84x)	Cannabis Consumers (.33x)	Value of market	TEV	Number of dispensaries to support local demand	Current licenses	Difference
1	02124	Dorchester	55,897	46,953.5	15,494.6	$17,818,846	$3,213,913	5.5		5.5
2	02128	East Boston	44,124	37,064.2	12,231.2	$14,065,849	$3,150,000	4.5	6	(1.5)
3	02135	Brighton	43,683	36,693.7	12,108.9	$13,925,267	$3,180,000	4.4	1	3.4
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8	02131	Roslindale	31,564	26,513.8	8,749.5	$10,061,972	$3,090,000	3.3	3	0.3
9	02115	Fenway	28,621	24,041.6	7,933.7	$9,123,802	$3,210,000	2.8	1	1.8
10	02118	South End	28,522	23,958.5	7,906.3	$9,092,243	$3,270,000	2.8	1	1.8
11	02121	Dorchester (Central)	28,298	23,770.3	7,844.2	$9,020,836	$3,120,000	2.9	2	0.9
12	02132	West Roxbury	27,069	22,738.0	7,503.5	$8,629,056	$3,120,000	2.8		2.8
13	02119	Roxbury	26,851	22,554.8	7,443.1	$8,559,562	$3,120,000	2.7		2.7
14	02126	Mattapan	25,313	21,262.9	7,016.8	$8,069,278	$3,090,000	2.6	1	1.6
15	02215	Fenway-Kenmore	24,054	20,205.4	6,667.8	$7,667,934	$3,213,913	2.4	1	1.4
16	02122	Fields Corner	23,471	19,715.6	6,506.2	$7,482,085	$3,213,913	2.3	2	0.3
17	02116	Back Bay	22,040	18,513.6	6,109.5	$7,025,911	$3,660,000	1.9	1	0.9
18	02129	Charlestown	19,994	16,795.0	5,542.3	$6,373,687	$3,180,000	2.0	1	1.0
19	02134	Allston	17,637	14,815.1	4,889.0	$5,622,323	$3,180,000	1.8	3	(1.2)
20	02120	Mission Hill	15,248	12,808.3	4,226.7	$4,860,757	$3,210,000	1.5		1.5
21	02114	West End	13,853	11,636.5	3,840.1	$4,416,059	$3,270,000	1.4	1	0.4
22	02111	Chinatown	8,067	6,776.3	2,236.2	$2,571,598	$3,300,000	0.8	1	(0.2)
23	02210	South Boston Waterfront	6,554	5,505.4	1,816.8	$2,089,284	$3,240,000	0.6		0.6
24	02113	North End	6,522	5,478.5	1,807.9	$2,079,083	$3,300,000	0.6		0.6
25	02108	Beacon Hill	4,178	3,509.5	1,158.1	$1,331,863	$3,300,000	0.4		0.4
26	02109	Downtown	3,714	3,119.8	1,029.5	$1,183,949	$3,330,000	0.4	3	(2.6)
27	02110	Seaport / Financial District	2,178	1,829.5	603.7	$694,303	$3,213,913	0.2	1	(0.8)
28	02163	Brighton (Other)	1,852	1,555.7	513.4	$590,381	$3,213,913	0.2		0.2
29	02199	Back Bay (Other)	1,253	1,052.5	347.3	$399,431	$3,213,913	0.1		0.1
Total						**$210,220,109**	**$3,213,913**	**66**	**35**	**31.0**

This chart indicates that based on the number of active licenses operating, all but three zip codes (02128, 02134 and 02109) are in balance and zip code 02124 and 02135 are underserved. **Where saturation will come into play is when more of the 61 approved licenses come online.**

Results of the Boston Analysis (by Zip Code), Including Tourist and Commuters

At the request of the city, Whitney Economics examined the economic impacts of tourists and commuter demand on the cannabis retailers in Boston. The assumption was that there are a large number of commuters

entering the city each month and they bring with them their purchasing power. There are approximately 700,000 commuters entering Boston each day to work, so this is an important consideration.

When Adjusting the Models to Account for Tourism and Commuters, the Saturation Analysis Changes Significantly.

Whitney Economics was able to adjust the saturation model to account for commuter and tourist demand. This increased the total value of the market and also increased the number of retail licenses that the market could bear. The total number of licenses required to satisfy the total demand increased from 65 to 127.

14 of the 29 zip codes were in balance, with 5 additional zip codes able to add between 1 – 2 licenses. There are 10 additional zip codes that are underserved to the demand and can add more licenses.

Rank	ZIP Code	Neighborhood	Local Population	Adult Population .84x	Commuter	Commuter .714x	cannabis consumers	Canna-Tourists	Total Consumers	Value of market	TEV	Number of dispensaries	Current licenses	Difference
1	02124	Dorchester	55,897	46,953.5	5,000.0	3,571.4	16,673.2		16,673.2	$19,174,203	$3,213,913	6.0	2	4.0
2	02128	East Boston	44,124	37,064.2	21,807.0	15,576.4	17,371.4		17,371.4	$19,977,103	$3,150,000	6.3	5	1.3
3	02135	Brighton	43,683	36,693.7	16,868.0	12,048.6	16,085.0		16,085.0	$18,497,700	$3,180,000	5.8	4	1.8
4	02130	**Jamaica Plain**	41,109	34,531.6	16,180.0	11,557.1	15,209.3	40,091	15,615.7	$18,506,665	$3,150,000	5.9	3	2.9
5	02136	Hyde Park	38,071	31,979.6	5,982.0	4,272.9	11,963.3		11,963.3	$13,757,823	$3,060,000	4.5	2	2.5
6	02127	South Boston	36,646	30,782.6	8,728.0	6,234.3	12,215.6		12,215.6	$14,047,923	$3,180,000	4.4	1	3.4
7	02125	Savin Hill (Dorchester)	33,069	27,778.0	0.0	0.0	9,166.7		9,166.7	$10,541,736	$3,213,913	3.3	2	1.3
8	02131	Roslindale	31,564	26,513.8	5,180.0	3,700.0	9,970.5		9,970.5	$11,466,122	$3,090,000	3.7	5	(1.3)
9	02115	Fenway	28,621	24,041.6	26,629.0	19,020.7	14,210.6		14,210.6	$16,342,163	$3,210,000	5.1	3	2.1
10	02118	**South End**	28,522	23,958.5	34,853.0	24,895.0	16,121.6	40,091	16,528.0	$19,555,898	$3,270,000	6.0	2	4.0
11	02121	Dorchester (Central)	28,298	23,770.3	30,288.0	21,634.3	14,983.5		14,983.5	$17,231,048	$3,120,000	5.5	1	4.5
12	02132	West Roxbury	27,069	22,738.0	6,160.0	4,400.0	8,955.5		8,955.5	$10,298,856	$3,120,000	3.3	3	0.3
13	02119	Roxbury	26,851	22,554.8	37,190.0	26,564.3	16,209.3		16,209.3	$18,640,708	$3,120,000	6.0	2	4.0
14	02126	Mattapan	25,313	21,262.9	2,621.0	1,872.1	7,634.6		7,634.6	$8,779,756	$3,090,000	2.8	2	0.8
15	02215	**Fenway-Kenmore**	24,054	20,205.4	18,940.0	13,528.6	11,132.2	40,091	11,538.6	$13,818,029	$3,213,913	4.3	2	2.3
16	02122	Fields Corner	23,471	19,715.6	0.0	0.0	6,506.2		6,506.2	$7,482,085	$3,213,913	2.3	3	(0.7)
17	02116	**Back Bay**	22,040	18,513.6	65,746.0	46,961.4	21,606.8	40,091	22,013.2	$25,863,776	$3,660,000	7.1	3	4.1
18	02129	Charlestown	19,994	16,795.0	11,094.0	7,924.3	8,157.4		8,157.4	$9,380,954	$3,180,000	2.9	2	0.9
19	02134	Allston	17,637	14,815.1	26,597.0	18,997.9	11,158.3		11,158.3	$12,832,010	$3,180,000	4.0	4	0.0
20	02120	Mission HIll	15,248	12,808.3	51,760.0	36,971.4	16,427.3		16,427.3	$18,891,415	$3,210,000	5.9	2	3.9
21	02114	West End	13,853	11,636.5	46,783.0	33,416.4	14,867.5	40,091	15,273.9	$18,113,596	$3,270,000	5.5	1	4.5
22	02111	**Chinatown**	8,067	6,776.3	12,291.0	8,779.3	5,133.3	40,091	5,133.3	$5,903,337	$3,300,000	1.8	1	0.8
23	02210	**South Boston Waterfront**	6,554	5,505.4	58,877.0	42,055.0	15,694.9	40,091	16,101.3	$19,065,159	$3,240,000	5.9	0	5.9
24	02113	**North End**	6,522	5,478.5	4,201.0	3,000.7	2,798.1	40,091	2,798.1	$3,217,854	$3,300,000	1.0	0	1.0
25	02108	**Beacon Hill**	4,178	3,509.5	4,824.0	3,445.7	2,295.2	40,091	2,701.6	$3,655,514	$3,300,000	1.1	1	0.1
26	02109	**Downtown**	3,714	3,119.8	180,805.0	129,146.4	43,647.8	40,091	44,054.2	$51,211,021	$3,330,000	15.4	4	11.4
27	02110	**Seaport / Financial District**	2,178	1,829.5	0.0	0.0	603.7	40,091	1,010.1	$1,710,305	$3,213,913	0.5	1	(0.5)
28	02163	Brighton (Other)	1,852	1,555.7	0.0	0.0	513.4		513.4	$590,381	$3,213,913	0.2	0	0.2
29	02199	Back Bay (Other)	1,253	1,052.5	0.0	0.0	347.3		347.3	$399,431	$3,213,913	0.1	0	0.1
			659,452	**553,940**	**699,404**		**347,660**	**441,000**	**351,317**	**$408,952,572**	**$3,213,913**	**127**	**61**	**65.7**

The city of Boston must look closely at the 10 zip codes that have been identified where more licenses could be issued as a result of the commuter traffic as the commuter traffic could potentially skew the model. For example, the downtown zip code of 02109 has a daily influx of over 180,000 commuters. This would require over 15 retailers to service this potential demand. There are currently 4 retailers licensed. It is strongly recommended that those 4 locations be surveyed prior to taking any action to add more locations in this zip code.

4. Summary of the Saturation Analysis

It is clear that regardless of the TEV value, if only based on the number of residents living in an area that the Boston market has issued enough licenses to satisfy the total demand in the city. More licenses can be issued

in select zip codes based on commuter-based demand, but a thorough analysis should be conducted before doing so. In those areas that are saturated, if a retailer would like to sell its license to another business entity, then the new owner could be allowed to assume ownership of the license realizing that there is risk in doing so without necessarily impacting neighboring businesses. It would then be a matter of who could operate at the lowest costs while maximizing its local market share.

Frequently Asked Questions

Q: Is TEV a perfect measure of operator health?
A: No. It is meant to serve as a guideline for further analysis. Each location is different, has its own set of economic conditions, so each location must be viewed on a case-by-case basis from foot traffic and potential revenues to total costs of operation, including debt service.

Q: Why should we use TEV for licensure rather than simply use a license as a percentage of population ratio?
A: When license numbers are based on a percentage of population, the number is static and does not consider the level of legal participation. This can lead to oversupply and reduce the average revenues per operator. By using TEV, it gives regulators the ability to increase licenses gradually as the market conditions evolve. It considers the economic health of retailers.

Q: Do more licenses in a concentrated area impact the viability of the neighboring businesses?
A: Yes. If the number of licensed operators in a given area are at or below the threshold of economic viability, those businesses can coexist and remain viable. Success or failure will be determined more by business practices than by the business environment of having too many licenses to service too few customers. If there are too many in a concentrated area, there will not be enough demand to support all of the businesses, and some will be negatively impacted.

Q: Should more retail licenses be issued in Boston?
A: Further analysis is required in neighborhoods that have a high volume of commuter traffic. Many area of the Boston retail market have approached its saturation point. The decline in average revenue combined with higher operating costs has led to fewer licenses being required to satisfy the total demand. There are neighborhoods that have sufficient commuter traffic to justify additional licensing.

Q: If an operator's revenue is below the TEV for that area, does that mean they will go out of business?
A: No. It simply means that they will need to either increase revenues or decrease costs. Revenue increases are tougher in mature markets, so it generally means that the retailer must cut costs, either by reducing labor, benefits, or other variable costs.

Q: If a retailer's revenue is below the TEV, why not just increase revenues?
A: Revenues in mature markets are tougher to increase because the market has already begun maximizing legal participation. Legal participation typically peaks at between 80% and 85% (Massachusetts was at 82.4% in 2024). As the market matures there are fewer and fewer customers to win over and growth rates will be flat.

Q: How can a retailer increase sales in a mature market if growth rates are flat?
A: With fewer and fewer consumers left to convert from the unregulated market, increased sales must come from either other businesses or from the tourist industry. A retail company can also reduce prices, but this will lead to further margin compression and affect profitability. Cannabis retailers cannot simply raise prices as the cannabis consumer is very price sensitive and will take their business elsewhere. Raising prices also raises federal tax liability. An issue that is at the heart of the lack of profitability in the industry.

Q: If a zip code has one or two more licenses than what is estimated that it can support, will these licensees fail?
A: Typically having two operators in an area is better for the consumer as it drives competition and makes the operators better. However, if there is a substantial excess of licenses in a given area, then this lowers the average revenues for all licenses in that area and can create economic distress.

Q: Should there be a cap on new retail licenses in Boston?
A: While a previous analysis of the Massachusetts market indicated that there were still opportunities to add new retail licenses, business conditions have changed to such an extent that adding new licenses is no longer recommended. Limiting the issuance of additional licensing in the Boston zip codes is recommended and any new license requests should be closely examined and authorized only on a case-by-case and zip code by zip code basis.

Q: What are some key indicators that operators, investors, and regulators should use in assessing licensing and location strategies?
A: Indicators include:
What is the average revenue for operators in a given area?
How many are already in the area?
What is the total addressable market in the area?
What is the average cost for rents, wages, debt service, health care and projected federal taxes?

Recommendations

Based on the analysis, the following recommendations are suggested:

- Examine closely the 10 zip codes that have additional room for licensure. Survey existing retailers to determine the level of demand that comes from these commuters and then refine the saturation model accordingly.
- Develop indicators on price deflation and costs associated with running a cannabis retail operation, so that the city regulators can track cost inflation and pricing deflation. This will help assess the overall retail market in Boston.
- Base policy assuming flat consumer participation and lower prices. Given that the percentage of legal participation has been maximized, we do not expect further sales growth. In fact, given the saturation of supply, prices and therefore revenues are expected to decline and normalize over time.

- If a new retail operation is being proposed and if it appears that there are already enough licenses, examine demand from adjacent neighborhoods/zip codes to see if that additional demand capacity could be serviced from other areas.
- Conduct a survey of retail licensees to specifically examine profitability, costs and business sentiment, so that city and state regulators have data in which to base their policy decisions on (Note: Whitney Economics conducted an analysis of the Portland, Oregon cannabis market that can serve as a basis – www.whitneyeconomics.com/reports)
- Provide existing and new licensees with a copy of this saturation report so that operators and investors have a greater sense of their risk.
- Consider placing a pause on licenses or change the conditions in which new licenses would be issued in the Boston area.

Conclusion

There are many factors that go into assessing the health of an industry and the level of saturation. From federal taxation, access to financial services or interstate markets, to rental rates, health care, and labor costs. If the revenues required to operate a retail location are at or below the cost associated with that location, then neither the licensee nor the regulator will be successful. A careful analysis is required for each new license to ensure the new operator does not destabilize the rest of the market.

The use of the TEV model is a tool that can quickly assess if a market is saturated, or if it is in balance. If the market is approaching a saturation point, then operators need to understand this risk and the regulator may need to adjust their approach to licensure.

In the case of Boston, costs to operate a cannabis retail business have been increasing, while the average revenues and overall prices in the market have declined. At the same time, the regulated market has been successful in converting many of the unregulated consumers into the regulated market. Given the level of legal participation, growth in the future will slow and fewer opportunities will be available to increase revenues. Licenses are at or above the level of saturation. This is resulting in challenges to existing operators and requires a closer look at adding new retail operators. Each new license must be considered on a case-by-case basis.

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APPENDICES

Appendix A: About the Authors / Statement of Conflicts

Beau Whitney, Cannabis Economics, Operations and Supply Chain Expert

Beau Whitney is the founder and Chief Economist at Whitney Economics, a global leader in cannabis and hemp business consulting, data, and economic research. Whitney Economics is based in Portland, Oregon.

Serving an international clientele, Beau is considered one of the leading cannabis economists in the U.S. and globally. His applications of economic principles to create actionable operational and policy recommendations have been recognized by governments, and throughout the economic, investment, and business communities. In 2022, Beau presented data and insights about cannabis and hemp economics at the United Nations.

His white papers analyzing the adult-use, medical and industrial cannabis markets have been referenced in the Wall Street Journal, Washington Post, New York Times, USA Today, the Associated Press, as well as in leading cannabis industry publications.

Beau Whitney is a member of the American Economic Association, the Oregon chapter president of the National Association for Business Economics, is a member of multiple regulatory advisory committees throughout the U.S. and participates on the Oregon Governor's Council of Economic Advisors.

Beau has provided policy recommendations at the state, national and international levels and is considered an authority on cannabis economics and the supply chain. Whitney Economics does not take a position on the issue of cannabis legalization or on pending legislation.

Statement Of Conflicts
Whitney Economics does not take a position on this issue of cannabis legalization, however there are potential conflicts while presenting economic and market analysis.

- Whitney Economics receives compensation for business and economic analysis of the cannabis industry.
- Mr. Whitney has previously held positions and licenses within the legal regulated cannabis industry.
- Whitney Economics has performed license saturation analysis for other states either on behalf of the state regulators or at the request of the cannabis industry.
- Mr. Whitney is a director for the Cannabis Advisory Group (CAG) in New Jersey, a non-profit policy think tank.
- Whitney Economics is a member of the European Industrial Hemp Association.
- Whitney Economics contributes economic data to the Federation of Industrial Hemp Organizations
- Mr. Whitney is a founder of Every Day Hemp Company, an Oregon-based manufacturer of hemp based plastic products.

Thérèse Fitzgerald, PhD, MSW, Community-Led Solutions, Founder & CEO

Community-Led Solutions (CLS) is a social impact consulting firm specializing in research and evaluation, strategy, and systems change. CLS was founded in 2022 by Thérèse Fitzgerald, PhD, MSW, a researcher, sociologist, and social worker with over 25 years of experience in education, health, and human services. We help organizations demonstrate impact, strengthen programs, address complex challenges, and build sustainable community solutions. Our firm combines rigorous research and data analytics with strategies that center equity and community insight. Drawing on a broad interdisciplinary team and strong partnerships, CLS is guided by a deep commitment to listening, understanding complex cultural dynamics, and building trust. Our approach fosters sustainability while driving systemic change for the organizations and communities we serve.

Appendix B: Methodology – TEV Calculations and Determining Saturation

Market Factors that Help Shape the License Structure

In order to ascertain the number of licenses that would be viable at each step in the cannabis value chain, there are a few items that need to be considered.

- **The Demand** – This is the amount of cannabis that has been consumed in the past and is forecasted to be consumed in the future. This was defined in terms of cannabis products, cannabis output requirements, or cannabis revenues. This data is available and tracked by Massachusetts CCC.

- **The number of consumers in an area** – The number of consumers was determined by federal surveys. It was also be derived other ways. The number of consumers in an area determined how much potential demand there is as well as how much supply will be needed.

- **The number of consumers participating in the legal regulatory marketplace** – This is defined as legal participation. Legal participation is important as it is a key public policy objective. The goal is to maximize the legal of legal consumer participation by incentivizing the consumer to participate.

- **The projected growth in the market** – This can be calculated in various ways, but it is an estimation of how much additional demand there will be for the market to support.

- **The number of current licenses issued in an area** – Knowing the number of licenses issued, will help define how many more or less are needed to support the market.

- **The average revenues per license types** - This was ascertained via surveys, via regulatory or via seed to sale data. There is a minimum threshold of economic viability in terms of revenues, particularly at the retail level.

Here is how it works. Calculating the TEV, and the point of saturation

1. The key to determining the number of viable licenses is initially knowing how much demand there is in total and how much demand there is currently supported.
2. The second key is understanding how many licenses have been issued (or are operational)
3. The third key is calculating how much it costs to operate a location in a particular area (state, county or sip code)
4. Once the costs and demand are estimated, then it comes down to access. Retailers need a minimum amount of revenue per store to remain viable, whereas consumers need access within a 30 – 40 minutes radius of where they live. The further the drive, the less likely the consumer will participate legally. The city or state regulator provides the number of licenses approved or operational.
5. The rest is a math equation. Divide the total demand by the estimated cost and the result will be the total number of licenses than an area can support

6. To determine saturation simply compare the number of theoretical licenses that an area can support with the total number of licenses that have been authorized or are operational.
7. If there have been more licenses issued or approved that the estimated number of licenses an area can support, then there is likely to be saturation. If there are fewer licenses authorized or operational than an area can support, then there is opportunity to increase licenses or to determine policies associated with adding new licenses.

There are nuances to this. That is where the analysis comes in. The TEV is simply an indicator that can be used to determine if an area is reaching the point of saturation, then each location must be examined on a case-by-case basis.

The Math: How to Calculate the Factors TEV Used in Assessing License Thresholds
Note: This methodology can be applied to the state level, county level, or zip code level. This report focused primarily on licenses at the zip code level.

How to calculate demand potential
1. Find a reliable source for demographic data. W.E. tends to use census data on population by state.
2. Determine the total number of citizens 18 years or older in each area (state, county, city, region).
3. Divide by three. This is the total number of cannabis consumers in that area. This is also known as the total addressable market.
    - The division by three is used based on the fact that most mature markets peak in the range of 33% - 37% of adult-use population have consumed cannabis in the past year (SAMSHA, 2024).

How to calculate the total sales potential
1. Determine total number of consumers in an area based on Census data and usage rates (SAMHSA, 2024; Whitney Economics, 2024);
2. Multiple by a per capita spending rate (This is the average per capita spending that was determined by analyzing average basket sizes, surveys of consumers on spending);
3. This calculates the total POTENTIAL sales (Also known at Total Addressable Market or TAM); and
4. Note: This may be periodically adjusted to adjust for general pricing declines and changes in consumer spending patterns.
    a. Example: Massachusetts in 2024 experienced flat year-over-year revenues but saw product volumes increase (see Chart 1 in the body of this report).

How to calculate the percentage of legal sales
1. Determine total sales potential.
2. Subtract total legal sales as reported by the regulator.
3. Result is the amount of illicit sales.
4. The percentage is then calculated by dividing legal sales by total sales potential.

5. The result should be a number less than one.
    a. Legal / Potential = Percentage of legal sales

Determining the total retail outlets necessary to support the market

1. Determine existing total legal sales.
2. Examine forecasted year over year (YoY) growth.
3. Determine future sales forecast. This is based on the future levels of legal participation.
4. Divide future sales forecast by the TEV ($5.3m, $4.8m, $3.6m, etc
5. This gives a rough outline to be used as guidance for further analysis.

Appendix C: Data Sources

Population Data

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Appendix D: Tables

Table 1A: Threshold of Economic Viability by County.

This table examines the TEV by county. Two counties (Middlesex and Suffolk) had labor expenses adjusted downward. This examines how much revenue a retailer would need to generate in each county in order to remain viable and sustainable. It also accounts for roughly $10k per month in additional expenses not covered in the analysis.

Massachusetts	TEV Sales	Product acquisition costs	Labor units	Ave Wages by county (wkx52)	Labor Cost	280E Taxes	Remainder	Additional Expenses	*Remainder after additional expenses*
Barnstable County	$3,200,000	$1,600,000	10	$68,536	$685,360	$336,000	$578,640	$466,525	***$112,115***
Berkshire County	$3,250,000	$1,625,000	10	$70,824	$708,240	$341,250	$575,510	$473,549	***$101,961***
Bristol County	$3,225,000	$1,612,500	10	$69,992	$699,920	$338,625	$573,955	$470,518	***$103,437***
Dukes County	$3,450,000	$1,725,000	10	$75,972	$759,720	$362,250	$603,030	$495,477	***$107,553***
Essex County	$3,650,000	$1,825,000	10	$81,276	$812,760	$383,250	$628,990	$517,645	***$111,345***
Franklin County	$2,700,000	$1,350,000	10	$55,120	$551,200	$283,500	$515,300	$410,865	***$104,435***
Hampden County	$3,075,000	$1,537,500	10	$65,468	$654,680	$322,875	$559,945	$453,051	***$106,894***
Hampshire County	$3,000,000	$1,500,000	10	$62,816	$628,160	$315,000	$556,840	$443,717	***$113,123***
Middlesex County	$4,850,000	$2,425,000	10	$115,000	$1,150,000	$509,250	$765,750	$653,580	***$112,170***
Nantucket County	$3,700,000	$1,850,000	10	$83,044	$830,440	$388,500	$631,060	$523,868	***$107,192***
Norfolk County	$4,050,000	$2,025,000	10	$92,300	$923,000	$425,250	$676,750	$562,622	***$114,128***
Plymouth County	$3,450,000	$1,725,000	10	$75,192	$751,920	$362,250	$610,830	$494,276	***$116,554***
Suffolk County	$5,300,000	$2,650,000	10	$127,500	$1,275,000	$556,500	$818,500	$704,330	***$114,170***
Worcester County	$3,500,000	$1,750,000	10	$77,428	$774,280	$367,500	$608,220	$501,219	***$107,001***

Table 2A. Additional Expenses by County

This table summarizes additional expenses that are estimated by county. Debt service assumes a loan of only $50,000 at 10% interest. This is low given most retailers spend $2.0 million to get a retail operation up and running. It also assumes rent to be a standard 3% of total revenue. This is a common benchmark for typical businesses.

Massachusetts	Additional Expenses	*Rent*	*Rent Compare*	*Payroll Taxes (FICA)*	*Health Care Insurance $7170/employee ($5898 employer only)*	*Property Insurance*	*Debt Servcice*	*State Business Taxes*	*Regulatory License*	*Bank Account*
Barnstable County	$466,525	$90,000	$96,000	$105,545.44	$58,980	$12,000	$50,000	$128,000	$10,000	$6,000
Berkshire County	$473,549	$90,000	$97,500	$109,068.96	$58,980	$12,000	$50,000	$130,000	$10,000	$6,000
Bristol County	$470,518	$90,000	$96,750	$107,787.68	$58,980	$12,000	$50,000	$129,000	$10,000	$6,000
Dukes County	$495,477	$90,000	$103,500	$116,996.88	$58,980	$12,000	$50,000	$138,000	$10,000	$6,000
Essex County	$517,645	$90,000	$109,500	$125,165.04	$58,980	$12,000	$50,000	$146,000	$10,000	$6,000
Franklin County	$410,865	$90,000	$81,000	$84,884.80	$58,980	$12,000	$50,000	$108,000	$10,000	$6,000
Hampden County	$453,051	$90,000	$92,250	$100,820.72	$58,980	$12,000	$50,000	$123,000	$10,000	$6,000
Hampshire County	$443,717	$90,000	$90,000	$96,736.64	$58,980	$12,000	$50,000	$120,000	$10,000	$6,000
Middlesex County	$653,580	$120,000	$145,500	$177,100.00	$58,980	$12,000	$50,000	$194,000	$10,000	$6,000
Nantucket County	$523,868	$90,000	$111,000	$127,887.76	$58,980	$12,000	$50,000	$148,000	$10,000	$6,000
Norfolk County	$562,622	$90,000	$121,500	$142,142.00	$58,980	$12,000	$50,000	$162,000	$10,000	$6,000
Plymouth County	$494,276	$90,000	$103,500	$115,795.68	$58,980	$12,000	$50,000	$138,000	$10,000	$6,000
Suffolk County	$704,330	$120,000	$159,000	$196,350.00	$58,980	$12,000	$50,000	$212,000	$10,000	$6,000
Worcester County	$501,219	$90,000	$105,000	$119,239.12	$58,980	$12,000	$50,000	$140,000	$10,000	$6,000

Table 3A. A Comparison of Licenses Issued in Boston versus Licenses based on TEV (Ave of $3.2M)

This table examines the number of licenses that each zip code can support based on a TEV for each zip code (an average of $3.2 million) and compares this to the number of licenses issued. A positive number means more licenses could be supported, a negative number means there are potentially too many and further analysis is required. This chart indicates that when only considering demand from residents, the market is mostly in balance.

Rank	ZIP Code	Neighborhood	Population	adult-population (0.84x)	Cannabis Consumers (.33x)	Value of market	TEV	Number of dispensaries to support local demand	Current licenses	Difference
1	02124	Dorchester	55,897	46,953.5	15,494.6	$17,818,846	*$3,213,913*	5.5	2	3.5
2	02128	East Boston	44,124	37,064.2	12,231.2	$14,065,849	*$3,150,000*	4.5	5	(0.5)
3	02135	Brighton	43,683	36,693.7	12,108.9	$13,925,267	*$3,180,000*	4.4	4	0.4
4	02130	Jamaica Plain	41,109	34,531.6	11,395.4	$13,104,727	*$3,150,000*	4.2	3	1.2
5	02136	Hyde Park	38,071	31,979.6	10,553.3	$12,136,273	*$3,060,000*	4.0	2	2.0
6	02127	South Boston	36,646	30,782.6	10,158.3	$11,682,012	*$3,180,000*	3.7	1	2.7
7	02125	Savin Hill (Dorchester)	33,069	27,778.0	9,166.7	$10,541,736	*$3,213,913*	3.3	2	1.3
8	02131	Roslindale	31,564	26,513.8	8,749.5	$10,061,972	*$3,090,000*	3.3	5	(1.7)
9	02115	Fenway	28,621	24,041.6	7,933.7	$9,123,802	*$3,210,000*	2.8	3	(0.2)
10	02118	South End	28,522	23,958.5	7,906.3	$9,092,243	*$3,270,000*	2.8	2	0.8
11	02121	Dorchester (Central)	28,298	23,770.3	7,844.2	$9,020,836	*$3,120,000*	2.9	1	1.9
12	02132	West Roxbury	27,069	22,738.0	7,503.5	$8,629,056	*$3,120,000*	2.8	3	(0.2)
13	02119	Roxbury	26,851	22,554.8	7,443.1	$8,559,562	*$3,120,000*	2.7	2	0.7
14	02126	Mattapan	25,313	21,262.9	7,016.8	$8,069,278	*$3,090,000*	2.6	2	0.6
15	02215	Fenway-Kenmore	24,054	20,205.4	6,667.8	$7,667,934	*$3,213,913*	2.4	2	0.4
16	02122	Fields Corner	23,471	19,715.6	6,506.2	$7,482,085	*$3,213,913*	2.3	3	(0.7)
17	02116	Back Bay	22,040	18,513.6	6,109.5	$7,025,911	*$3,660,000*	1.9	3	(1.1)
18	02129	Charlestown	19,994	16,795.0	5,542.3	$6,373,687	*$3,180,000*	2.0	2	0.0
19	02134	Allston	17,637	14,815.1	4,889.0	$5,622,323	*$3,180,000*	1.8	4	(2.2)
20	02120	Mission HIll	15,248	12,808.3	4,226.7	$4,860,757	*$3,210,000*	1.5	2	(0.5)
21	02114	West End	13,853	11,636.5	3,840.1	$4,416,059	*$3,270,000*	1.4	1	0.4
22	02111	Chinatown	8,067	6,776.3	2,236.2	$2,571,598	*$3,300,000*	0.8	1	(0.2)
23	02210	South Boston Waterfront	6,554	5,505.4	1,816.8	$2,089,284	*$3,240,000*	0.6	0	0.6
24	02113	North End	6,522	5,478.5	1,807.9	$2,079,083	*$3,300,000*	0.6	0	0.6
25	02108	Beacon Hill	4,178	3,509.5	1,158.1	$1,331,863	*$3,300,000*	0.4	1	(0.6)
26	02109	Downtown	3,714	3,119.8	1,029.5	$1,183,949	*$3,330,000*	0.4	4	(3.6)
27	02110	Seaport / Financial District	2,178	1,829.5	603.7	$694,303	*$3,213,913*	0.2	1	(0.8)
28	02163	Brighton (Other)	1,852	1,555.7	513.4	$590,381	*$3,213,913*	0.2	0	0.2
29	02199	Back Bay (Other)	1,253	1,052.5	347.3	$399,431	*$3,213,913*	0.1	0	0.1
Total						**$210,220,109**	***$3,213,913***	**66**	**61**	**5.0**

Table 4A. A Comparison of Licenses Issued AND ACTIVE in Boston versus Licenses based on TEV ($3.2M)

This table examines the number of licenses that each zip code can support based on a TEV by each zip code (an average of $3.2 million) and compares this to the number of licenses that are currently issued and active. A positive number means more licenses could be supported, a negative number means there are potentially too many and further analysis is required. This chart indicates that based on the number of active licenses operating, all but five zip codes are in balance and zip code 02124 and 02135 are underserved.

Rank	ZIP Code	Neighborhood	Population	adult-population (0.84x)	Cannabis Consumers (.33x)	Value of market	TEV	Number of dispensaries to support local demand	Current licenses	Difference
1	02124	Dorchester	55,897	46,953.5	15,494.6	$17,818,846	$3,213,913	5.5		5.5
2	02128	East Boston	44,124	37,064.2	12,231.2	$14,065,849	$3,150,000	4.5	6	(1.5)
3	02135	Brighton	43,683	36,693.7	12,108.9	$13,925,267	$3,180,000	4.4	1	3.4
4	02130	Jamaica Plain	41,109	34,531.6	11,395.4	$13,104,727	$3,150,000	4.2	2	2.2
5	02136	Hyde Park	38,071	31,979.6	10,553.3	$12,136,273	$3,060,000	4.0	1	3.0
6	02127	South Boston	36,646	30,782.6	10,158.3	$11,682,012	$3,180,000	3.7	1	2.7
7	02125	Savin Hill (Dorchester)	33,069	27,778.0	9,166.7	$10,541,736	$3,213,913	3.3	2	1.3
8	02131	Roslindale	31,564	26,513.8	8,749.5	$10,061,972	$3,090,000	3.3	3	0.3
9	02115	Fenway	28,621	24,041.6	7,933.7	$9,123,802	$3,210,000	2.8	1	1.8
10	02118	South End	28,522	23,958.5	7,906.3	$9,092,243	$3,270,000	2.8	1	1.8
11	02121	Dorchester (Central)	28,298	23,770.3	7,844.2	$9,020,836	$3,120,000	2.9	2	0.9
12	02132	West Roxbury	27,069	22,738.0	7,503.5	$8,629,056	$3,120,000	2.8		2.8
13	02119	Roxbury	26,851	22,554.8	7,443.1	$8,559,562	$3,120,000	2.7		2.7
14	02126	Mattapan	25,313	21,262.9	7,016.8	$8,069,278	$3,090,000	2.6	1	1.6
15	02215	Fenway-Kenmore	24,054	20,205.4	6,667.8	$7,667,934	$3,213,913	2.4	1	1.4
16	02122	Fields Corner	23,471	19,715.6	6,506.2	$7,482,085	$3,213,913	2.3	2	0.3
17	02116	Back Bay	22,040	18,513.6	6,109.5	$7,025,911	$3,660,000	1.9	1	0.9
18	02129	Charlestown	19,994	16,795.0	5,542.3	$6,373,687	$3,180,000	2.0	1	1.0
19	02134	Allston	17,637	14,815.1	4,889.0	$5,622,323	$3,180,000	1.8	3	(1.2)
20	02120	Mission HIll	15,248	12,808.3	4,226.7	$4,860,757	$3,210,000	1.5		1.5
21	02114	West End	13,853	11,636.5	3,840.1	$4,416,059	$3,270,000	1.4	1	0.4
22	02111	Chinatown	8,067	6,776.3	2,236.2	$2,571,598	$3,300,000	0.8	1	(0.2)
23	02210	South Boston Waterfront	6,554	5,505.4	1,816.8	$2,089,284	$3,240,000	0.6		0.6
24	02113	North End	6,522	5,478.5	1,807.9	$2,079,083	$3,300,000	0.6		0.6
25	02108	Beacon Hill	4,178	3,509.5	1,158.1	$1,331,863	$3,300,000	0.4		0.4
26	02109	Downtown	3,714	3,119.8	1,029.5	$1,183,949	$3,330,000	0.4	3	(2.6)
27	02110	Seaport / Financial District	2,178	1,829.5	603.7	$694,303	$3,213,913	0.2	1	(0.8)
28	02163	Brighton (Other)	1,852	1,555.7	513.4	$590,381	$3,213,913	0.2		0.2
29	02199	Back Bay (Other)	1,253	1,052.5	347.3	$399,431	$3,213,913	0.1		0.1
Total						**$210,220,109**	**$3,213,913**	**66**	**35**	**31.0**

Table 5A. A Comparison of Licenses Issued in Boston versus Licenses based on TEV ($3.2M) with Tourism and Commuter Demand

This table examines the number of licenses that each zip code can support based on a TEV of $3.2 million and compares this to the number of licenses issued. It also incorporates demand from tourism and commuter traffic to see if it had a material effect. A positive number means more licenses could be supported, a negative number means there are potentially too many and further analysis is required. This chart indicates that there are more licenses that can be issue in 10 specific zip codes (highlighted in yellow).

Rank	ZIP Code	Neighborhood	Local Population	Adult Population .84x	Commuter	Commuter .714x	cannabis consumers	Canna-Tourists	Total Consumers	Value of market	TEV	Number of dispensaries	Current licenses	Difference
1	02124	Dorchester	55,897	46,953.5	5,000.0	3,571.4	16,673.2		16,673.2	$19,174,203	$3,213,913	6.0	2	4.0
2	02128	East Boston	44,124	37,064.2	21,807.0	15,576.4	17,371.4		17,371.4	$19,977,103	$3,150,000	6.3	5	1.3
3	02135	Brighton	43,683	36,693.7	16,868.0	12,048.6	16,085.0		16,085.0	$18,497,700	$3,180,000	5.8	4	1.8
4	02130	**Jamaica Plain**	41,109	34,531.6	16,180.0	11,557.1	15,209.3	40,091	15,615.7	$18,506,665	$3,150,000	5.9	3	2.9
5	02136	Hyde Park	38,071	31,979.6	5,982.0	4,272.9	11,963.3		11,963.3	$13,757,823	$3,060,000	4.5	2	2.5
6	02127	South Boston	36,646	30,782.6	8,728.0	6,234.3	12,215.6		12,215.6	$14,047,923	$3,180,000	4.4	1	3.4
7	02125	Savin Hill (Dorchester)	33,069	27,778.0	0.0	0.0	9,166.7		9,166.7	$10,541,736	$3,213,913	3.3	2	1.3
8	02131	Roslindale	31,564	26,513.8	5,180.0	3,700.0	9,970.5		9,970.5	$11,466,122	$3,090,000	3.7	5	(1.3)
9	02115	Fenway	28,621	24,041.6	26,629.0	19,020.7	14,210.6		14,210.6	$16,342,163	$3,210,000	5.1	3	2.1
10	02118	**South End**	28,522	23,958.5	34,853.0	24,895.0	16,121.6	40,091	16,528.0	$19,555,898	$3,270,000	6.0	2	4.0
11	02121	Dorchester (Central)	28,298	23,770.3	30,288.0	21,634.3	14,983.5		14,983.5	$17,231,048	$3,120,000	5.5	1	4.5
12	02132	West Roxbury	27,069	22,738.0	6,160.0	4,400.0	8,955.5		8,955.5	$10,298,856	$3,120,000	3.3	3	0.3
13	02119	Roxbury	26,851	22,554.8	37,190.0	26,564.3	16,209.3		16,209.3	$18,640,708	$3,120,000	6.0	2	4.0
14	02126	Mattapan	25,313	21,262.9	2,621.0	1,872.1	7,634.6		7,634.6	$8,779,756	$3,090,000	2.8	2	0.8
15	02215	**Fenway-Kenmore**	24,054	20,205.4	18,940.0	13,528.6	11,132.2	40,091	11,538.6	$13,818,029	$3,213,913	4.3	2	2.3
16	02122	Fields Corner	23,471	19,715.6	0.0	0.0	6,506.2		6,506.2	$7,482,085	$3,213,913	2.3	3	(0.7)
17	02116	**Back Bay**	22,040	18,513.6	65,746.0	46,961.4	21,606.8	40,091	22,013.2	$25,863,776	$3,660,000	7.1	3	4.1
18	02129	Charlestown	19,994	16,795.0	11,094.0	7,924.3	8,157.4		8,157.4	$9,380,954	$3,180,000	2.9	2	0.9
19	02134	Allston	17,637	14,815.1	26,597.0	18,997.9	11,158.3		11,158.3	$12,832,010	$3,180,000	4.0	4	0.0
20	02120	Mission HIll	15,248	12,808.3	51,760.0	36,971.4	16,427.3		16,427.3	$18,891,415	$3,210,000	5.9	2	3.9
21	02114	West End	13,853	11,636.5	46,783.0	33,416.4	14,867.5	40,091	15,273.9	$18,113,596	$3,270,000	5.5	1	4.5
22	02111	**Chinatown**	8,067	6,776.3	12,291.0	8,779.3	5,133.3	40,091	5,133.3	$5,903,337	$3,300,000	1.8	1	0.8
23	02210	**South Boston Waterfront**	6,554	5,505.4	58,877.0	42,055.0	15,694.9	40,091	16,101.3	$19,065,159	$3,240,000	5.9	0	5.9
24	02113	**North End**	6,522	5,478.5	4,201.0	3,000.7	2,798.1	40,091	2,798.1	$3,217,854	$3,300,000	1.0	0	1.0
25	02108	**Beacon Hill**	4,178	3,509.5	4,824.0	3,445.7	2,295.2	40,091	2,701.6	$3,655,514	$3,300,000	1.1	1	0.1
26	02109	**Downtown**	3,714	3,119.8	180,805.0	129,146.4	43,647.8	40,091	44,054.2	$51,211,021	$3,330,000	15.4	4	11.4
27	02110	**Seaport / Financial District**	2,178	1,829.5	0.0	0.0	603.7	40,091	1,010.1	$1,710,305	$3,213,913	0.5	1	(0.5)
28	02163	Brighton (Other)	1,852	1,555.7	0.0	0.0	513.4		513.4	$590,381	$3,213,913	0.2	0	0.2
29	02199	Back Bay (Other)	1,253	1,052.5	0.0	0.0	347.3		347.3	$399,431	$3,213,913	0.1	0	0.1
			659,452	**553,940**	**699,404**		**347,660**	**441,000**	**351,317**	**$408,952,572**	**$3,213,913**	**127**	**61**	**65.7**

The findings of this analysis including tourism and commuter traffic increase the potential of the market to such an extent that the number of required licenses nearly double. This should be further analyzed and existing operators could be surveyed to determine how much of the existing demand is commuter based.