

Memorandum

To: Fairfax Town Council **File No.:** 38072.00001
From: Janet Coleson, Town Attorney
Amanda Charne, Assistant Town Attorney
Date: July 26, 2018
Re: Cannabis Microbusinesses

PURPOSE

At its meeting on July 18, 2018, the Town Council considered various policy issues related to cannabis regulations for the Town of Fairfax. As part of that discussion, the Town Council requested additional information regarding the "microbusiness" license under the Medicinal and Adult-Use Cannabis Regulation and Safety Act ("MAUCRSA"). This is an informational report as requested by the Town Council.

ANALYSIS:

A microbusiness is a license designation created under state law that allows a licensee to engage in multiple commercial cannabis activities under one license. Prior to MAUCRSA, there was no state regulatory process for the operation of a vertically integrated microbusiness. (BCC Cal. Code of Regs., Title 16, Division 42, Medicinal and Adult-Use Cannabis Regulation, Initial Statement of Reasons, p. 10.)

MAUCRSA is silent as to how many commercial cannabis activities an applicant must engage in to qualify for a microbusiness license. Under the Bureau of Cannabis Control's (BCC) implementing regulations, a microbusiness must engage in at least three of the following activities:

- cultivation (in an area less than 10,000 square feet),
- distribution,
- nonvolatile (Level 1) manufacturing, and/or
- retail.

Under the proposed permanent BCC regulations that were released on July 13, 2018, the BCC would recognize newly expanded subcategories for each of these activities. Specifically, proposed regulation 16 CCR § 5500(c) would recognize the following commercial cannabis activities that may be included within a microbusiness:



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- **Retailer** – a licensee that sells and/or delivers cannabis or cannabis products to retail customers.
- **Non-storefront retailer** – a cannabis retailer that provides cannabis to retail customers exclusively through delivery.
- **Distributor** – licensee that procures, sells, and transports cannabis between entities licensed under MAUCRSA. Distributors arrange for testing, check packaging and labeling, collect taxes, transport cannabis between licensees and may act as a wholesaler. Distributors may package and label cannabis (dried flower), but not manufactured cannabis products.
- **Transport Only Distributor** – a type of distributor that only transports cannabis and cannabis products between licensees or self-distribution, but does not perform the other functions of a distributor (quality assurance, testing, packaging, labeling or storing cannabis). However, transport only distributors shall not transport any cannabis goods except for immature cannabis plants and seeds to a licensed retailer or microbusiness.
- **Level 1 Manufacturer (Type 6)** – a licensee that manufacture cannabis products using nonvolatile solvents, or no solvents (i.e. mechanical methods). A Level 1 Manufacturer (Type 6 licensee) may also prepare infusions, conduct packaging and labeling of cannabis products. Under the Dept. of Public Health proposed regulations, a Type 6 licensee may also register and operate the licensed premises as a shared-use facility (proposed regulation 17 CCR 40118(a)(2)). At this time it is not clear whether the allowance for share-use facilities would also apply to a microbusiness engaging in manufacturing.
- **Cultivation** – a licensee that engages in cultivation activities. The application must include a cultivation plan showing all cultivation activities and that the total area of all activities shall be less than 10,000 square feet and provide supplemental water source information.

Although the BCC's proposed permanent microbusiness regulation recognizes certain subcategories of retail and distribution activities, it appears that a microbusiness must still engage in at least three of main categories of commercial activity (e.g. retail, distribution, cultivation and manufacturing). The BCC's Initial Statement of Reasons indicates that the intent of the regulation is to ensure that licensees are actually microbusinesses rather than using the license as a substitute for single activity licenses. (BCC Cal. Code of Regulations, Title 16, Division 42, Medicinal and Adult-Use Cannabis Regulation Initial Statement of Reasons, p. 119.) Thus, at least initially, it

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does not appear that a microbusiness licensee could choose only two categories comprising three different subcategories, such as retail, non-storefront retail, and manufacturing.

A summary document issued by the BCC also states that license types created by the Department of Food and Agriculture and the Department of Public Health are not considered qualifying commercial cannabis activities for the purposes of obtaining a microbusiness license. Thus, it appears, for example, a Type P license for manufacturers that only package or label cannabis products would not be an eligible category under the microbusiness license.

A holder of a microbusiness license may only engage in the commercial cannabis activity requested in the license application and approved by the Bureau. The regulations specify various application requirements, depending on the activities proposed. (See 15 CCR §§ 5500-5504.) If a microbusiness licensee wants to engage in additional commercial cannabis activity after the license is issued, the licensee shall submit an application to the Bureau identifying the requested changes and providing all information required for an application for the commercial cannabis activity the licensee wants to conduct. (16 CCR § 5023.)

In terms of any substantive limits on activities of a microbusiness license, the BCC regulations include or are proposed to include the following requirements:

- All cultivation, manufacturing, distribution, and retail activities performed by a licensee under a microbusiness license shall occur on the same licensed premises (see current and proposed 16 CCR 5500(d)).
- Areas of the licensed premises for manufacturing and cultivation be separated from the distribution and retail areas by a wall and all doors between the areas shall remain closed when not in use (see current 16 CCR 5500(a); proposed 16 CCR 5500(h).)
- Licensed retailers and microbusinesses shall only serve customers who are within the licensed premises or at a permissible delivery address. The sale and delivery of cannabis shall not occur through a pass-out window or tray to the exterior of the licensed premises and shall not operate as or with a drive-through. Cannabis may not be sold or delivered to a person within a motor vehicle. (current and proposed 16 CCR 5025(c).)
- Distributors and microbusinesses shall only transport and sell cannabis goods designated "For Medical Use Only" pursuant to the requirements prescribed by the State Department of Public Health in regulation, to M-designated retailers or M-designated microbusinesses. (current and proposed 16 CCR 5032.)



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- Microbusiness licensees engaging in manufacturing activities must maintain certain batch production records (current and proposed 16 CCR 5506), and those engaging in cultivation activities must maintain certain cultivation records (current and proposed 16 CCR 5505).

Beyond these specific rules, the holder of a microbusiness license must comply with all of the requirements for licensed cultivators, distributors, Level 1 manufacturers, and retailers to the extent the licensee engages in such activities. (current and proposed 16 CCR § 5500(e).) For example, the "holder of a Type 12-Microbusiness license engaged in distribution shall comply with all the rules and requirements applicable to a Type 11-Distributor license" (see current 16 CCR 5500(e)(3)).

It should be noted that the state licensing regulations do not limit the size or volume of a microbusiness.

CONCLUSION

At its last meeting the Town Council indicated that commercial cannabis manufacturing, cultivation and distribution as standalone businesses were not a good fit for Fairfax, but expressed interest in learning more about the microbusiness license. Although the microbusiness license limits cultivation to 10,000 square feet and manufacturing to nonvolatile production, the microbusiness license does not otherwise limit the scale or volume of commercial activities at a premises. In particular, a microbusiness license could potentially include the full suite of distribution activities, unless the microbusiness opted to be a Transport Only Distributor (see descriptions of distribution licenses on page 2). However, land use and zoning requirements, such as square footage limits, may, as a practical matter, constrain the size or volume of a business.

Finally, please note that the BCC's regulations were recently amended via the emergency regulations effective on June 6, 2018, and are proposed to change again under the proposed permanent regulations released for public comment on July 13, 2018. These regulations likely will continue to change as the industry matures. Accordingly, at this time, it may be more straight forward to focus on the land uses the Town wants to allow, rather than trying to base a zoning ordinance on the current version of state licensing rules.

We look forward to discussing this topic at the August 1, 2018 Town Council meeting.

cc: Garrett Toy, Town Manager

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Memorandum

To: Fairfax Town Council **File No.:** 38072.00001
From: Amanda Charne, Assistant Town Attorney
Date: August 8, 2018
Re: Cannabis Testing Laboratories

PURPOSE

At its meeting on August 1, 2018, the Town Council considered various policy issues related to cannabis regulations for the Town of Fairfax. As part of that discussion, Councilmember Ackerman requested additional information regarding "testing laboratories" under the Medicinal and Adult-Use Cannabis Regulation and Safety Act ("MAUCRSA").

ANALYSIS:

MAUCRSA provides that cannabis or cannabis products shall not be sold pursuant to a state license unless a representative sample of the cannabis or cannabis products has been tested by a licensed testing laboratory. (BPC §§ 26100(a); 26110.) For each batch tested, the licensed testing laboratory must issue a certificate of analysis to report whether the chemical profile of the sample conforms to the labeled content of compounds and that the presence of contaminants does not exceed the levels established by the Bureau of Cannabis Control (BCC). (BPC § 26100(d).)

A person that holds a state testing laboratory license is prohibited from licensure for any other activity, except testing. (BPC § 26053(b).) Testing laboratories are also specifically prohibited from distributing, selling, or dispensing cannabis or cannabis products, from the licensed premises from which the cannabis or cannabis products were acquired or received. (BPC § 26104(c).)

All testing laboratories must obtain and maintain ISO/IEC 17025 accreditation. (BPC § 26100(g); 16 CCR 5701(c).) ISO/IEC 17025 specifies the general requirements for the competence to carry out tests and/or calibrations, including samplings.

The BCC is charged with licensing and regulating testing laboratories. (BPC § 26102.) The BCC's regulations provide procedures for the following:

- (1) Ensure that testing of cannabis and cannabis products occurs prior to distribution to retailers, microbusinesses, or nonprofits licensed under Section 26070.5.

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(2) Specify how often licensees shall test cannabis and cannabis products, and that the cost of testing shall be borne by the cultivator or manufacturer.

(3) Require destruction of harvested batches whose testing samples indicate noncompliance with health and safety standards required by the BCC, unless remedial measures can bring the cannabis or cannabis products into compliance with quality assurance standards.

(4) Ensure that a testing laboratory employee takes the sample of cannabis or cannabis products from the distributor's premises for testing and that the testing laboratory employee transports the sample to the testing laboratory.

(BPC § 26104(b)(1)-(4); see proposed permanent regulations 16 CCR §§ 5304-5306, & §§ 5704-5710.)

Any presale inspection, testing transfer, or transportation of cannabis products must conform to a specified chain of custody protocol. (BPC §§ 26100(j); 26104(c).) A testing laboratory shall not acquire or receive cannabis or cannabis products except from a licensee. There is an exception that allows testing laboratories to test samples from a qualified patient or primary caregiver, so long as the testing laboratory does not certify the samples or resale or transfer. (BPC § 26104, subds. (c) & (d).)

Testing laboratories must comply with the general requirements for all licensees specified in Chapter 1 of the BCC regulations, as well as more specific requirements set forth in Chapter 6 of the BCC regulations. Chapter 6 of the BCC's proposed permanent regulations contain requirements for standard operating procedures, test methods, required testing, as well as post-testing procedures (remediation, retesting, sample retention), a laboratory quality assurance program and laboratory employee qualifications. (See Chapter 6 of the BCC's proposed regulations, available online at https://www.bcc.ca.gov/law_regs/bcc_prop_text_reg.pdf.)

CONCLUSION

While MAUCRSA and its implementing regulations detail specific testing and procedural requirements for cannabis testing laboratories, it is not readily apparent from the regulations (at least to a non-scientist) what size or types of facilities and equipment would be necessary to accommodate a cannabis testing laboratory. To that end, I have collected a few articles that may provide this information, with the caveat that these articles appear to have been created for commercial, marketing purposes, they are not be tailored to California's particular requirements, and I cannot guarantee the accuracy or completeness of the information in these articles.

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The land use concerns or disadvantages with testing laboratories generally cited by local governments include security concerns due to the presence of valuable cannabis products on-site, the potential presence of hazardous materials, and lack of tax revenue.

Many communities that have chosen to allow cannabis testing laboratories also allow testing laboratories generally. The Fairfax Zoning Ordinance currently allows laboratories generally as a permitted use in the CL and CH zones (Fairfax Muni. Code §§ 17.092.040, 17.096.040).

As a side note, the Marin Independent Journal reported on August 6, 2018 that the City of San Rafael is awarding 16 licenses to five cannabis delivery companies, eight infused product manufacturers and three distributors, but none of the four available testing laboratory licenses will be issued due to a lack of qualified applicants.¹ The newspaper also reports that Marin County is currently conducting an application review process to issue licenses for up to four medicinal cannabis delivery-only (non-storefront) retailers.

I look forward to discussing this topic at the August 15, 2018 special meeting of the Town Council.

cc: Garrett Toy, Town Manager
Janet Coleson, Town Attorney

Enclosures:

- (1) Genie Scientific Article: "What You Need to Know About Cannabis Testing Lab Setup and Training" (undated, available online at: <https://www.geniescientific.com/what-you-need-to-know-about-cannabis-testing-lab-setup-and-training>)
- (2) FormaSpace Article: "How to Start a Cannabis Testing Lab" (August 1, 2017, available online at: <https://formaspace.com/articles/laboratory-furniture/starting-a-cannabis-testing-lab/>)

¹ Brenner, Keri, Marin Independent Journal (online edition) "San Rafael picks 16 medical cannabis licensees" posted August 6, 2018, available at: <http://www.marinij.com/general-news/20180806/san-rafael-picks-16-medical-cannabis-licensees>. Note that the City of San Rafael's website indicates that only four (not five) medical non-storefront delivery licenses would be available and only two (not three) medical distribution licenses are available. (See <https://www.cityofsanrafael.org/cannabis/>, accessed August 8, 2018)

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Thanks to recent changes to attitudes and the law, cannabis is now a rapidly-growing industry. Medicinal cannabis undergoes lab testing, requiring the hiring of qualified individuals who understand lab setup (<https://caylie-morck-8b6a.squarespace.com/catalog>) as well as various testing procedures.





Common Types of Cannabis Testing

Laboratories involved in the comprehensive testing of cannabis will typically test cannabis for residual solvents, physical and microbial contamination, potency, and terpenes.

Residual Solvent Analysis

Residual solvent analysis (<http://steephill.com/blogs/33>) involves the extraction of active ingredients from cannabis via the use of solvents such as ethanol, carbon dioxide, butane, water, and other materials. Solvents play a significant role, with large volumes required in order to achieve higher purity levels and increase the efficiency of extraction.

Following extraction, further testing must be done to ensure that the highest percentage possible of solvents has been removed. Following this, the amount of residual solvent left in processed cannabis, expressed in parts per million (ppm), can be determined.

Headspace analysis is performed to determine the amount of residual solvent present. This involves the use of a gas-tight syringe to obtain a small gas sample from those in the headspace of a sealed vial of the prepared sample.

Physical Contamination

Testing for the physical and microbial contamination of cannabis requires several steps. The packaging and handling of cannabis needs to occur on clean surfaces, and all who handle it wear gloves in order to avoid physical contamination. Medicinal cannabis tested on Genie Scientific lab furniture should be packaged in a clean area, and the product should never touch the floor.

Microbial Testing

Without microbial testing (<http://cannabissafetyinstitute.org/wp-content/uploads/2015/06/Microbiological-Safety-Testing-of-Cannabis.pdf>), cannabis may pose a safety hazard. Some of the procedures involved in the microbial testing of cannabis include statistical sampling, relevant microorganism testing, and sound assay design and validation.

The level of water activity in any cannabis sample is instrumental to its microbial content. Therefore, the curing process must be both sufficient and thorough. If cannabis samples are fresh, tests for *E.coli*, *Clostridium botulinum*, and *Pseudomonas aeruginosa* will be required.

Potency Analysis

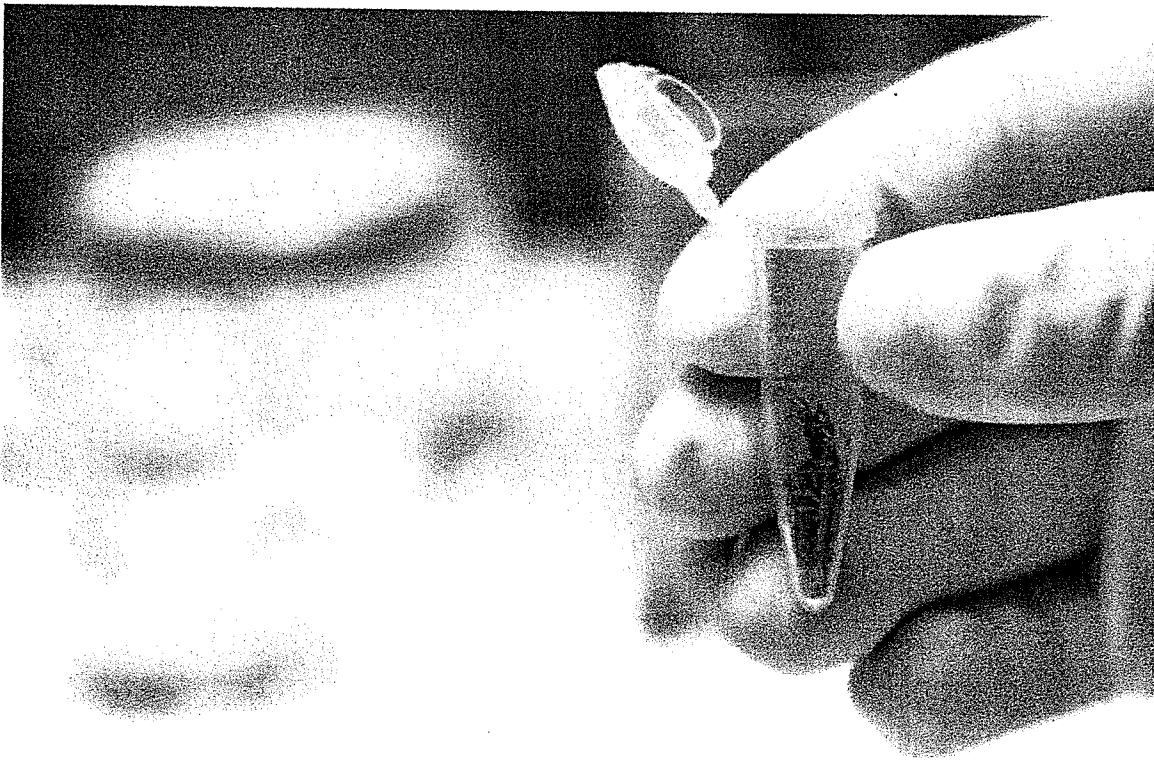
The potency of cannabis (<http://hightimes.com/grow/thca-vs-thc-how-to-read-a-lab-result/>) refers to the percentage of cannabinoids contained in the sample being tested. Depending on the state in which testing occurs, a sample's THC and CBD levels, along with its tetrahydrocannabinolic and cannabidiolic acids may be all that's required. Other labs may opt to test samples for their CBC and CBG as well. Testing for potency involves gas or liquid chromatography for a range of matrices.

Terpene Analysis

The measurement of fragrance and flavor compounds present in a cannabis sample requires terpene analysis (http://www.sigmaaldrich.com/content/dam/sigma-aldrich/docs/Sigma-Aldrich/General_Information/1/cannabis-testing.pdf). Gas and liquid chromatography is used to determine terpene content, which contributes to the sample's flavor profile.

Elements of Cannabis Testing Lab Setup

There are several tools and procedures required for the purpose of cannabis testing. When a sample is submitted to the lab for potency testing, it will typically undergo an initial visual inspection with a high-magnification dissecting microscope. This will reveal the presence of any mold or visible contaminants.



Lab Planning Should Include the Proper Equipment

Following the confirmation of a clean sample, it must be ground into fine plant material, where solutions are added for the purpose of separating the cannabinoids from it. The resulting cannabinoid solution must then be extracted. In this state, the solution can be tested with a high-pressure liquid chromatograph, which is the most widely accepted means of testing cannabis for potency.

However, gas chromatography (GC) and thin layer chromatography (TLC) can also be used for potency testing, although they will not allow cannabinoids to be measured in their naturally-occurring forms.

Mass Spectrometers

Where testing for pesticides is being conducted, mass spectrometers (<https://www.medicaljane.com/2013/02/11/lab-testing-cannabis-prescription-meds-list-dosage-information-concentration-levels-why-not-cannabis/>) will be needed, as they are able to detect a number of particles. Because the process uses a heating process similar to GC, dependable results can be had with gas chromatographs equipped with both a mass spectrometer and thermal conductivity detector.

PCR Machines

Terpene, contaminant, and strain testing can all be accomplished using real-time polymerase chain reaction. Not only does it allow for the precise amounts of bacteria, mold, yeast or fungus on a sample to be known, but it is also capable of the simultaneous quantification of DNA molecules. PCR units allow for results to be obtained in less than one hour, which is far faster than other testing methods.

Educational Requirements

Several tasks are involved with the processing of cannabis for medicinal usage. Therefore, a wide range of degrees, knowledge, and experience is required.

Analytical Chemist

Analytical chemists know their way around the lab workbench and are required to have specific training on the lab equipment involved with testing such as gas chromatographs and mass spectrometers. Analytical chemists assist and direct lab technicians in the operation of this equipment.

The individuals who test cannabis samples will need to possess knowledge of headspace, GC MS, MS/MS, and HPLC testing methods. In addition, they need to be able to ensure proper operation of instrumentation via the review of raw analytical data. Sample preparation, handling, and reporting knowledge is also required.

Analytical chemists also assist with other tasks related to lab operation, participating in cleaning, sample staging, and sample preparation. As they also typically assist with the development of new methods for testing, knowledge related to pesticides, solvents, and all aspects of potency testing will be mandatory.

In addition to the above, chemists will also be responsible for lab setup and the establishing of methods for all types of cannabis testing.

Analytical chemists will require a PhD, Master's or Bachelor's degree in chemistry or a similar field, and must have experience with testing equipment. They must be comfortable working in the fast-paced lab environment and possess good interpersonal and communication skills.

Extraction Technician

An extraction technician is responsible for the preparation of equipment and plant materials for cannabinoid extraction. They must possess experience as a lab or extraction technician, with a background in inorganic and organic chemistry. They may also be required to have oil extraction experience and be familiar with flammable storage cabinets and processes for CO₂ extraction.

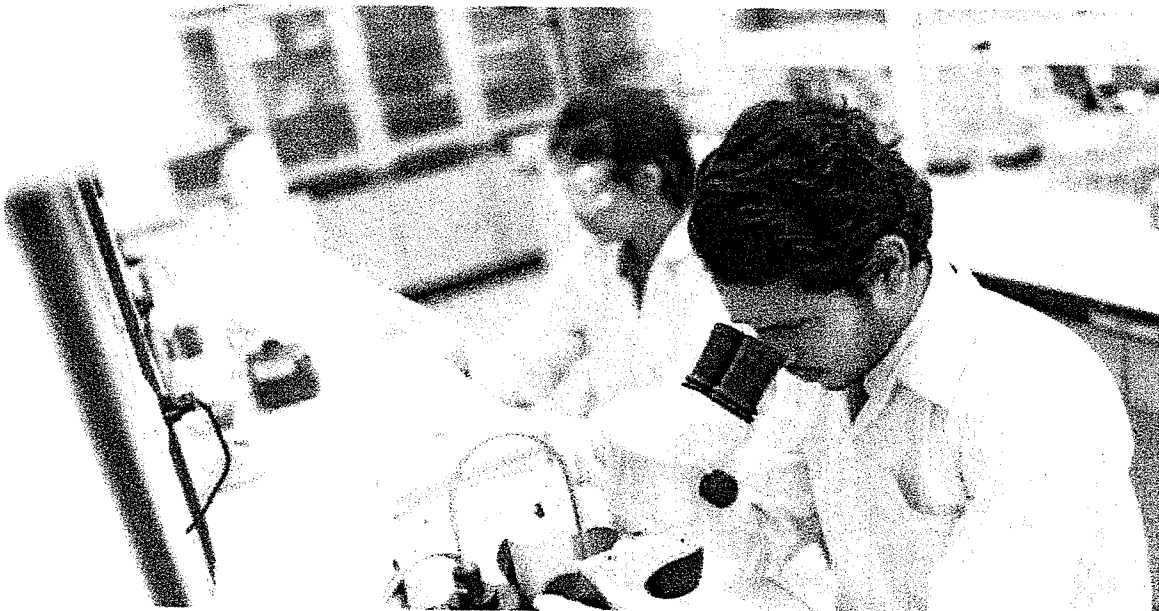
These individuals also process extracts and concentrates, as well as clean and maintain equipment and the lab itself. Extraction technicians must be able to maintain a strict and current inventory of all equipment, chemicals, and plants in the laboratory. They can also be required to know how to repair and adjust the centrifuges, microscopes, pumps, and chromatography equipment used in the lab.

The extraction technician's job goes beyond actual lab work to include the storage of equipment and supplies, clerical tasks, MSDS maintenance, and the sterilization of glassware used for testing.

Experience required for the position of extraction technician includes one or more years with extraction or concentrates in a lab setting. They must also have an understanding of the cannabis regulations and industry applications for the state they will be working in.

Education that may be preferable but not mandatory may include an Associate's or Bachelor's degree in chemistry, knowledge of medical marijuana benefits and law, and experience with extraction analysis and purification.

Multitasking will be required, as will the ability to work in an environment of fast and constant change.





Ways to Get Training for Cannabis Lab Testing

Technical institutes offering training on the instruments used in the lab are ideal locations for those who already possess experience with lab equipment and have a Bachelor's degree that focuses on chemistry. These institutes will usually provide hands-on training for equipment operation, testing methods, and troubleshooting, to name a few.

Cannabis as a legal industry (<https://caylie-morck-8b6a.squarespace.com/genie-scientific-equipment-helps-to-revolutionize-the-medical-marijuana-industry>) is, in many ways, still in its infancy. Therefore, the training programs available will vary by state, as will the teaching methods and learning materials that are distributed. Also, as more about the cannabis plant itself is learned, the content of learning materials will change, as will the procedures for proper testing and extraction, something that would-be chemists and lab technicians will want to keep in mind.

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August 1, 2017 | Laboratory Furniture

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As annual sales from the legal cannabis market grow to north of \$1 billion dollars in Washington State alone, many existing laboratory facilities are weighing their options on whether to jump into this rapidly expanding market by offering state-regulated cannabis test and certification services.



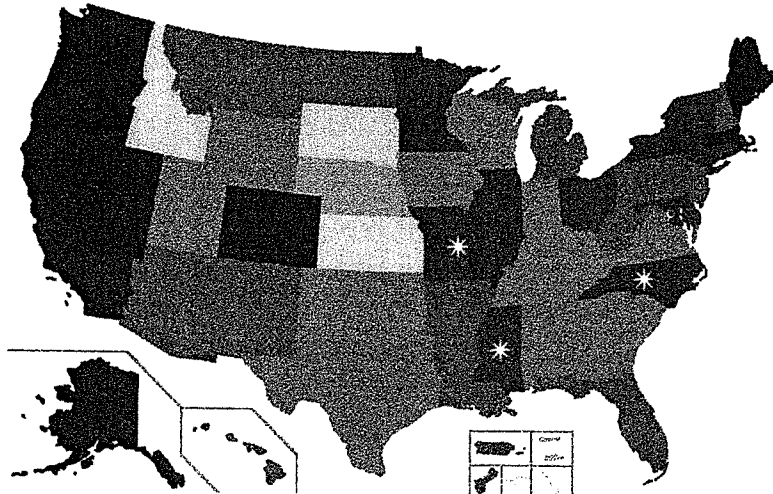
Ballot Initiatives Allowing Recreational Cannabis Use Find Favor among Voters in the Western States and New England

California voters approved the first legal sale of cannabis for medical purposes (commonly known as medical marijuana) in 1996. This ballot initiative conferred upon doctors the ability to prescribe cannabis to patients unable to find relief using traditional medications (<http://www.webmd.com/pain-management/features/medical-marijuana-uses>), including those suffering from intense pain or nausea (such as cancer patients in palliative care) or those whose chronic illnesses (such as HIV/AIDS) had led to dangerous weight loss due to lack of appetite.

Since that time, the legal cannabis market has grown rapidly.

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States up and down the West Coast (including Alaska) have enacted laws expanding the medical marijuana laws to permit sales of cannabis for purely recreational purposes. This is not just a West Coast phenomenon: voters in a couple of East Coast states (Maine and Massachusetts) recently approved ballot measures allowing retail sales of cannabis for recreational use in their jurisdictions as well.



Cannabis laws in the United States¹

-  (<https://formaspace.com/wp-content/uploads/2017/06/green-icon.png>)
 Jurisdiction with legalized cannabis.
-  (<https://formaspace.com/wp-content/uploads/2017/06/light-green-icon.png>)
 Jurisdiction with both medical and decriminalization laws.²
-  (<https://formaspace.com/wp-content/uploads/2017/06/dark-blue.png>)
 Jurisdiction with legal psychoactive medical cannabis.
-  (<https://formaspace.com/wp-content/uploads/2017/06/blue-icon.png>)
 Jurisdiction with legal non-psychoactive medical cannabis.
-  (<https://formaspace.com/wp-content/uploads/2017/06/very-light-blue.png>)
 Jurisdiction with decriminalized cannabis possession laws.
-  (<https://formaspace.com/wp-content/uploads/2017/06/white-star.png>)
 Jurisdiction with recreational cannabis sales.

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content/uploads/2017/06/light-light.png)
Jurisdiction with cannabis prohibition.

¹ Includes laws which have not yet gone into effect.

² Marked states have only legal non-psychoactive medical cannabis.

Since we last wrote about this topic (<https://formaspace.com/articles/laboratory-furniture/labs-embrace-medical-cannabis/>), Nevada has joined other Western states that permit recreational cannabis sales. Retail sales started July 1, 2017. Within days, available supplies were exhausted as customers emptied dispensary shelves of cannabis products (<https://www.nytimes.com/2017/07/13/us/nevada-legal-marijuana-shortage.html>). Nevada's Republican Governor, Brian Sandoval, called for additional emergency supplies to be brought into the state to satisfy the unexpectedly high demand.

To date, here are the states which have changed their laws to allow *recreational* cannabis sales (in addition to medical cannabis sales), along with their respective approval and implementation dates:

- **Alaska** (ballot initiative approved 2014, retail sales commenced February, 2015)
- **California** (ballot initiative approved 2016, retail sales will commence in 2018)
- **Colorado** (ballot initiative approved 2012, retail sales commenced January, 2014)
- **Maine** (ballot initiative approved 2016, retail sales commenced within 40 days)
- **Massachusetts** (approved 2016, retail sales will commence in July, 2018)
- **Nevada** (ballot initiative approved 2016, retail sales commenced July 1, 2017)
- **Oregon** (ballot initiative approved 2014, retail sales commenced July 1, 2015)

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- **Washington** (ballot initiative approved 2012, retail sales commenced over 12 months)

As Demand Grows, Tax Revenues from Legal Sales of Cannabis Products Are Helping Balance State Budgets

As the demand for the product continues to grow, there are early indications that a well-managed legal cannabis market can bring in significant tax revenue to state coffers.

Take Washington State for example. As the first state to approve both medical and recreational cannabis sales, Washington has experienced tremendous growth in cannabis sales. It's estimated that since legalization, the cumulative sales of cannabis for recreational purposes alone have already exceeded \$1 billion dollars

(<http://www.seattlepi.com/local/marijuana/article/Washington-total-marijuana-sales-pass-1-billion-8346916.php#item-39786>).

State officials estimate that taxes and licensing fees for cannabis sales will bring over \$730 million dollars in state revenue during the current two-year budget cycle

(<http://www.thenewstribune.com/news/local/marijuana/article>

Oregon, which has a much smaller population (4 million versus Washington State's 7.4 million), reportedly collected \$54 million in tax revenue from cannabis sales during the first 11 months of 2016

(<https://www.bizjournals.com/portland/news/2017/01/09/oregon-reports-big-jump-in-marijuana-business.html>).

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Colorado, which began selling recreational cannabis products in January, 2014, has benefited to the tune of more than \$500 million in additional tax revenue during its first two years of legalized cannabis sales (<https://www.usnews.com/news/best-states/colorado/articles/2017-07-20/colorado-pot-tax-revenue-surpasses-500-million>). Further driving sales growth are high-profile Coloradan businesses, which have not been shy about promoting "cannabis tourism," (<http://www.latimes.com/travel/la-tr-colorado-20160824-snap-story.html>) e.g. attracting users from neighboring states and across the country to partake in legal pot use.

(To learn more about the effect that different tax rates can have on recreational cannabis sales, visit the Tax Foundation website for an interesting analysis (<https://taxfoundation.org/marijuana-taxes-lessons-colorado-washington/>).)

Do You Have the In-House Expertise Necessary to Add Cannabis Test Services to Your Existing Laboratory Offerings?

As you look at the potential of the growing cannabis market, you may be asking yourself questions such as: "What steps do I need to take to add cannabis test services to my existing laboratory program?" or "What kind of personnel do I need to hire?"

(<https://formaspace.com/wp-content/uploads/2017/06/scientistlookingatweed.jpeg>)

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Laboratory owners and managers who are contemplating the possibility of entering the market for testing and certifying consumer cannabis products will want to develop a business plan that evaluates the pluses and minuses in this rapidly evolving marketplace.

A major consideration is domain expertise. If your existing laboratory facility already handles food and beverage testing, or pharmaceutical manufacturing, or product toxicity tests in general, you're more likely to already have the requisite laboratory experts and quality assurance technicians with the appropriate skill sets necessary to pursue opportunities in the new cannabis testing marketplace.

If, on the other hand, you are starting from scratch (by building a purpose-built laboratory) in order to enter the cannabis test and certification business, it's most likely you'll need to acquire personnel who have experience in establishing and maintaining Good Laboratory Practice (GLP) and Good Manufacturing Practice (GMP) systems — the specifics of which will be subject to the requirements set forth by the individual state markets in which you want to enter.

Certification Rules Regulating Cannabis Testing Labs Vary State by State

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One of the major disadvantages of cannabis sales being regulated by the states (rather than by the Feds) is that the rules for cannabis product testing tend to vary quite a bit from state to state.

This lack of unified Federal standards for product testing and certification is a potential disadvantage for testing laboratories, which will need to adhere to widely disparate state standards and certification procedures in order to take part in the burgeoning cannabis retail marketplace.

Another concern: it's still early days. Things are guaranteed to change.

Just as many states are only now beginning to adopt and adapt their tax rates for legal cannabis sales, many state legislators and civil service bureaucrats are still tinkering with the regulatory regimes that cover cannabis product safety and quality guidelines (including specific product testing protocols) designed to protect consumers.

What's the Typical Scope of Product Test Services Provided by Cannabis Testing Labs?

If you need guidance on where to start researching your state's testing requirements, turn to the website Leafly, which maintains an up-to-date, state-by-state guide to all the applicable laboratory certification requirements as well as mandated cannabis test procedures (<https://www.leafly.com/news/industry/leaflys-state-by-state-guide-to-cannabis-testing-regulations>).

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To give you some idea of the *typical* testing protocols, we've created a list shown below that includes representative requirements shared in common by many of the states — but be aware each state is different, and their laws and regulations are subject to change over time.

Typical Cannabis and Cannabis-based Product Certification Requirements

- Assess the chemical and microbiological composition of medical cannabis (including TCH test and CBD test to assess marijuana potency). Verify cannabinoid profiles match the product labeling.
- Test for impurities, moisture content, foreign material contamination, heavy metals, pesticide residues, plant growth regulators, microbiological contaminants, mycotoxins, terpenes, and residual solvents.
- Adhere to OECD Principles of Good Laboratory Practice and Compliance Monitoring or other relevant ISO standards; maintain internal standard operating procedures (SOPs); implement approved quality control/quality assurance (QC/QA) programs.
- Provide guidelines for certifying organic products.

Typical Grower Facility (Cultivator) Certification Requirements

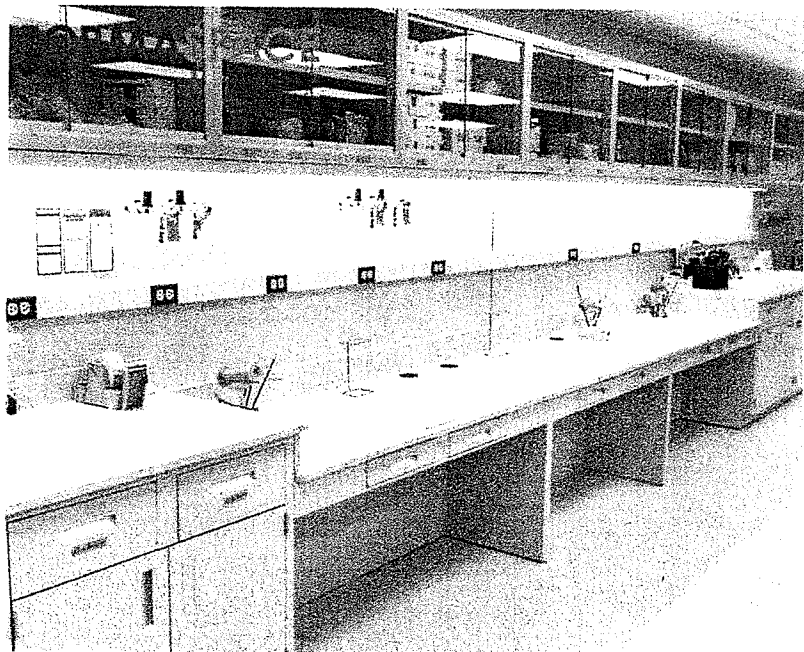
- Test cultivator's water supply for contamination.

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- Test cultivator's soil for contamination.
- Perform unannounced testing of the product as well as soil and plant samples.

Overview of Lab Equipment Needed to Perform Common Cannabis Test Services, Including Certifying Product Potency (THC Test)

If you already own or manage a testing laboratory performing pharmaceutical or food-grade testing procedures, you may be able to take on new contracts in the cannabis test and certification markets without having to make expensive investments in new lab equipment.



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On the other hand, if you are creating a new laboratory from scratch, you'll need to come up to speed quickly on the requisite equipment needed to perform specific tasks, such as THC tests for cannabis potency.

Here are three of the key cannabis test procedures and the corresponding lab equipment required to perform these tests in your laboratory:

Test 1. Cannabinoid Potency: High Pressure Liquid Chromatography (HPLC)

High Pressure Liquid Chromatography (HPLC) is the preferred approach for testing cannabis potency (THC test, CBD test, etc.). This is because the HPLC process works at room temperature. This is in contrast to other methods, such as Gas Chromatography (GC), which require adding significant heat to test samples (which can cause them to deteriorate before they can be measured accurately).

Test 2. Pesticide Contamination: Mass Spectrometer (MS)

Unlike tests for cannabinoid potency done at room temperature, tests for unwanted pesticide contamination are performed at a high temperature using a Mass Spectrometer (MS) – or a Gas Chromatography system with a built-in Mass Spectrometer.

Test 3. Identify Strains as well as Presence of Mold, Fungus, Bacteria, and Terpenes: Real-Time Polymerase Chain Reaction (PCR)

More and more regulators and consumers want to know the exact strain of cannabis product offered for sale, and whether it matches the information provided by the cultivator. Using real-time polymerase chain reaction (PCR)

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testing, cannabis test laboratories can identify individual cannabis strains as well as quantify levels of unwanted mold, fungus, bacteria, terpenes, and yeast found in each sample.

Don't Overlook the Benefits of Creating a Dedicated, Efficient Workspace for Performing State-Regulated Cannabis Testing Services

As the cannabis market grows and the need for laboratory testing increases, maintaining an organized and hygienic laboratory will be a key indicator of a successful, profitable operation.

Given the sensitivities surrounding the cannabis marketplace, there will likely be increased scrutiny on all aspects of the business for years to come.

Consequently, it will be in the best interests of each and every cannabis test laboratory to maintain scrupulously clean, well-organized facilities – particularly due to the likelihood of heightened inspections and scrutiny by state regulators.

This is where Formaspace, with our long-standing expertise in creating highly efficient, organized laboratory workspaces can help.

Did you know Formaspace is already helping laboratories create or modify their facilities in order to become certified for cannabis testing?

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(<https://formaspace.com/wp-content/uploads/2017/08/mmlabtesting.jpg>)

It's true. In fact, our first cannabis test lab customer opened for business in Nevada (<http://mmlabtesting.com/>).

Check out our full line of laboratory benches designed for sample processing (<https://formaspace.com/laboratory-furniture/sample-processing-lab-benches/>) as well as our full line of heavy-duty instrumentation workstations (<https://formaspace.com/laboratory-furniture/instrumentation-tables/>) built to take care of your heavy (and expensive) High Pressure Liquid Chromatography and Mass Spectrometry equipment.

You'll work smarter and more comfortably with Formaspace laboratory furniture because it's designed to provide you with optimal ergonomic comfort (<https://formaspace.com/articles/office-furniture/benefits-of-ergonomics-workplace/>) – thanks to our power-on-demand, height-adjustable work surfaces that let you select a working height that fits your body type at the touch of a button. And our furniture is also designed to last: it's backed by a full 12-year, no-questions-asked guarantee (<https://formaspace.com/support/guarantee/>).

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Not only can we provide custom built furniture created by our craftsmen here in our factory headquarters in Austin Texas, we can also provide you with consulting services to help you design your laboratory facility so that you achieve efficiency by creating a place to work that is attractive, efficient, and – most importantly – profitable for your bottom line.

To learn more, contact us today
(https://formaspace.com/about/contact-us/#design_consultant) by filling out the quick form below. Our Formaspace Design Consultants are ready to help you today.

Related Articles

 pharmacist and patient

How Pharmaceutical Industry can Improve Health Literacy
(<https://formaspace.com/articles/health-care/lack-of-basic-health-illiteracy/>)

Whether you are a patient or an employer providing healthcare benefits, you may feel that the quality of our healthcare ...

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Source: California Cannabis Testing Laboratories

Frequently Asked Questions

What is a Cannabis Testing Laboratory (Type 8)?

A Cannabis Testing Laboratory (Type 8) is a facility or entity that offers or performs tests of cannabis goods.

Does a Testing Laboratory (Type 8) have an M-licensee or A-licensee designation?

Neither. A Testing Laboratory (Type 8) does not have an M-licensee or A-licensee designation.

Do Testing Laboratories (Type 8) need to obtain any accreditation?

Yes, Testing Laboratories (Type 8) are required to obtain and maintain ISO/IEC 17025 accreditation.

Can a Testing laboratory operate without a ISO/IEC 17025 accreditation?

If a Testing Laboratory meets all other licensure requirements, it can be issued a provisional license while it obtains the ISO/IEC 17025 accreditation.

What is the role of Testing Laboratories?

The Testing Laboratories role is to collect samples of each cannabis goods batch for testing from the premises of the distributor.

What do Testing Laboratories test for?

- Cannabinoids
- Foreign material
- Heavy metals
- Microbial impurities
- Mycotoxins
- Moisture content and water activity
- Residual pesticides
- Residual solvents and processing chemicals
- Terpenoids
- Homogeneity

Are Testing Laboratories required to document the handling, storage, transportation, and destruction of samples?

Yes, Testing Laboratories are required to document the chain of custody for the handling, storage, transportation, and destruction of samples.

Are Testing Laboratories required to create a certificate for each sample it analyzes?

Yes, for each primary sample, the Testing Laboratory must produce a certificate of analysis.

Are cannabis products required to meet the testing requirement criteria before it can be sold to a customer?

Yes, cannabis products are required to meet the testing requirement standards before sale.

Can a person that holds a testing laboratory license also hold a license for another cannabis activity?

No, a person that holds a testing laboratory license cannot hold a license for another cannabis activity.

Can a testing laboratory employ individuals who are also employed by another licensee?

Yes, only if the licensee is also another testing laboratory.

MEDICAL CANNABIS

Pilot Licensing Process

CITY OF SAN RAFAEL

WHAT ARE WE LICENSING?

The City of San Rafael is creating a pilot operator licensing program for medicinal cannabis operators. This is a new program for us, so we are starting small and evaluating along the way. To start, San Rafael will be offering a limited amount of medicinal licenses in the following categories:

- *Infused Product Manufacturers: 8 licenses available (State License Type N)*
- *Delivery Non-storefront: 4 licenses available (State License Type 9)*
- *Cannabis Testing Labs: 4 licenses available (State License Type 8)*
- *Distribution: 2 licenses available (State License Type 11)*

HOW DO WE CHOOSE?

We are looking for strong business acumen with a capable and passionate team.
We want to help create a local ecosystem of small craft purveyors, who
exemplify the artisan quality Marin County is known for.

05/2018

SAN RAFAEL MEDICAL CANNABIS OPERATOR LICENSING PROGRAM



WHAT ARE WE EVALUATING?

Business Executive Summary (20 POINTS - MAXIMUM)

Think business plan meets executive summary. We want to learn about your mission and vision, your organizational structure, market analysis, sales and financial projections.

Safety & Security (20 POINTS - MAXIMUM)

We realize you may not have a location yet, but we are looking for a general understanding of how safety and security will work with your business. Compliance track and trace standards, cash management strategies, odor control, burglary and employee loss prevention.

Patient & Benefit Education (20 POINTS - MAXIMUM)

There is a lot to learn about medical cannabis for patients, how will you educate them? What type of data security and patient privacy methods will you employ?

Local Enterprise (10 POINTS - MAXIMUM)

There is a sliding point scale for local businesses in the North Bay, specifically the counties of Marin, Sonoma and Napa.

Qualifications of Principals (20 POINTS - MAXIMUM)

This is where you get to break down how awesome your team is! Tell us about your management team's experience and expertise.

Community Benefits (10 POINTS - MAXIMUM)

Share what unique attributes your business will bring to the community.

APPLICATION INTAKE

Online application window opens

6/1/2018*

Similar to the State of California's online cannabis licensing system, you will be able to apply, upload supporting documents, and pay the non-refundable application fee online.

Live Scan Background checks for applicants must be scheduled with the San Rafael Police Department by email: 236@srpd.org

* 6/1/2018 start date is our goal, pending any unforeseen configuration delays with the online application system, we should make this start date. Thank you for your patience.

IMPORTANT DATES

Online application window open from

6/1 - 6/15

Schedule Background
Check Appointment
with San Rafael Police
Department

Prescreen - Background check review

6/18 - 6/20

Committee Review & Ranking

6/19 - 6/22

Operator Interviews - Final Selection

6/25 - 6/29

APPLICATION COST & DETAILS

\$3600 non-refundable application fee

Application Review Panel includes:

Economic Development Director

Economic Development Coordinator

Police Chief

Fire Chief

Community Development Director

Department of Public Works Representative

License application ranking evaluation points:

- Business Executive Summary (20 POINTS - MAXIMUM)
- Safety and Security Plan (20 POINTS - MAXIMUM)
- Patient Benefits & Education (20 POINTS - MAXIMUM)
- Local Enterprise Preference (10 POINTS - MAXIMUM)
- Qualifications of Principals (20 POINTS - MAXIMUM)
- Community Benefits (10 POINTS - MAXIMUM)

An application is required to receive a total of 85 points to move forward. The Committee will rank all the applications and will issue a written decision for each application. The Committee shall serve a copy of its written decision on each applicant by email.

THANK YOU

We look forward to learning more about you.

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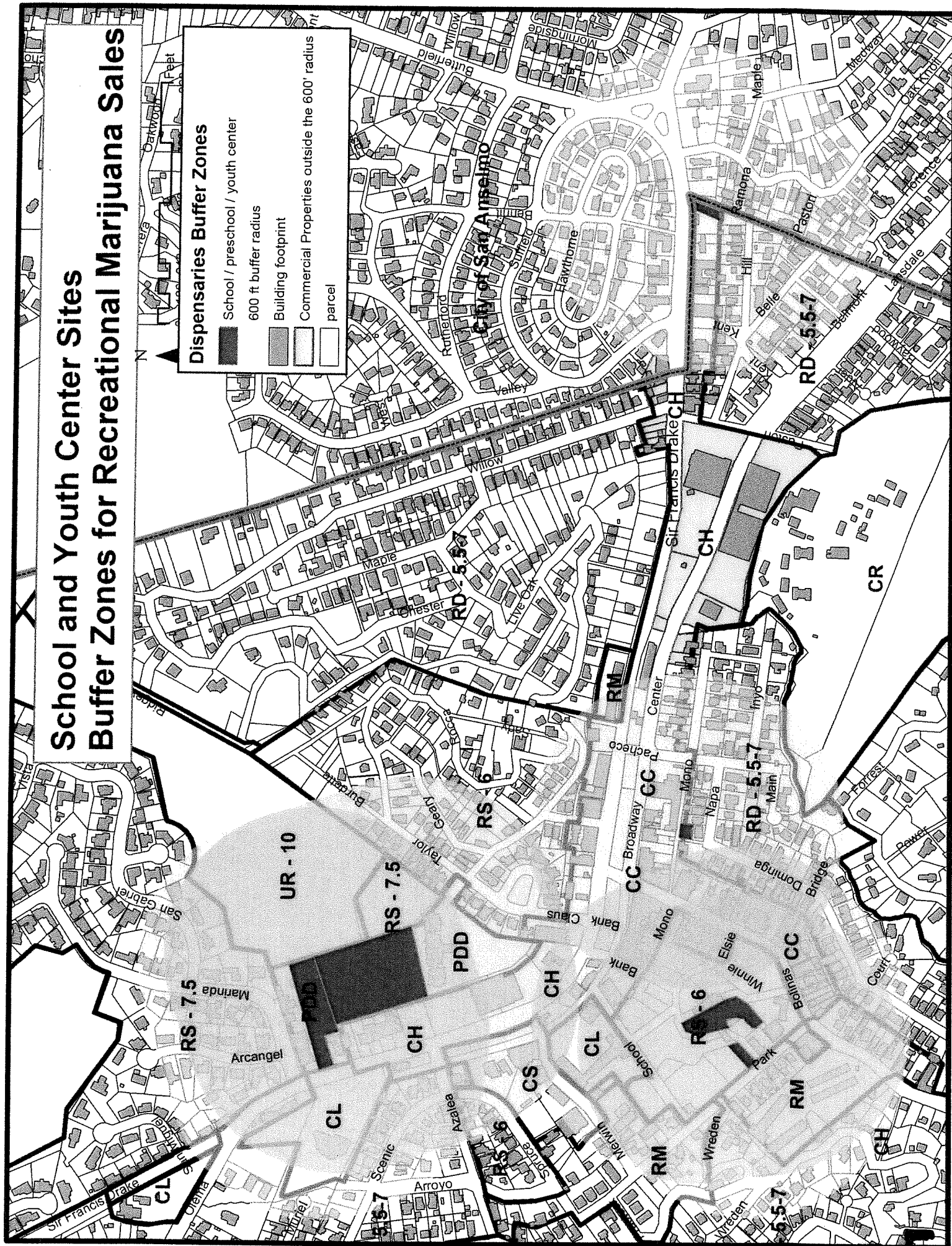
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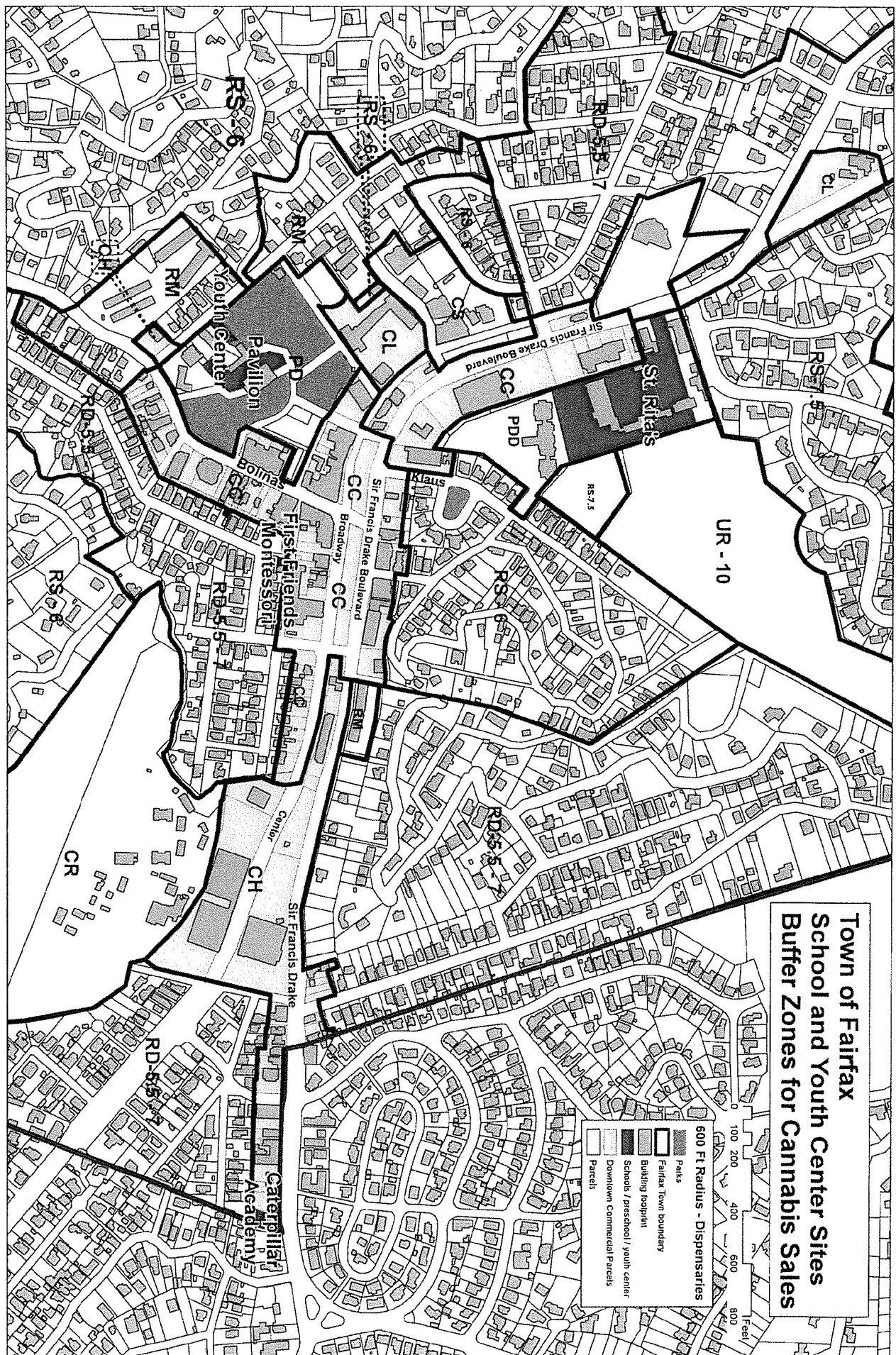
cityofsanrafael.org/cannabis

School and Youth Center Sites Buffer Zones for Recreational Marijuana Sales

Dispensaries Buffer Zones

- School / preschool / youth center
- 600 ft buffer radius
- Building footprint
- Commercial Properties outside the 600' radius
- parcel





Potential Location Criteria for Cannabis Businesses

The following criteria/finding categories might be used to assist identification of potential areas that might be appropriate for cannabis businesses:

Location

The location may only within the following commercial zoning districts:

- CC (Central Commercial)
- CH (Highway Commercial)
- CL (Light Commercial)

The location will not cause spillover effects into nearby residential areas.

The location is conducive to dissuading loitering and other undesirable activities.

The location is adequately separated, either by distance or other physical separator, from areas identified by State regulations as other a school, day care center, or youth center, or from locations known to be popular with minors, and from religious institutions.

Circulation

The site (and design within the site) is conducive to efficient flow of traffic. The site and immediate environs can accommodate anticipated business traffic without undue congestion.

Parking is available onsite on in the immediate vicinity adequate to accommodate business traffic.

The site can adequately accommodate delivery-related traffic onsite.

Customers using alternative transportation (including transit, bicycle, and pedestrian) can safely and conveniently access the site.

Design

The design of the business is harmonious with its surroundings and minimize visibility.

The size of the business is limited to a specific size (i.e., set a square foot limit).

All business shall be conducted indoors, with the exception of immature plants, which shall be located in an unobtrusive secured area.

Security elements/features consistent with State requirements is unobtrusively incorporated in the overall design.