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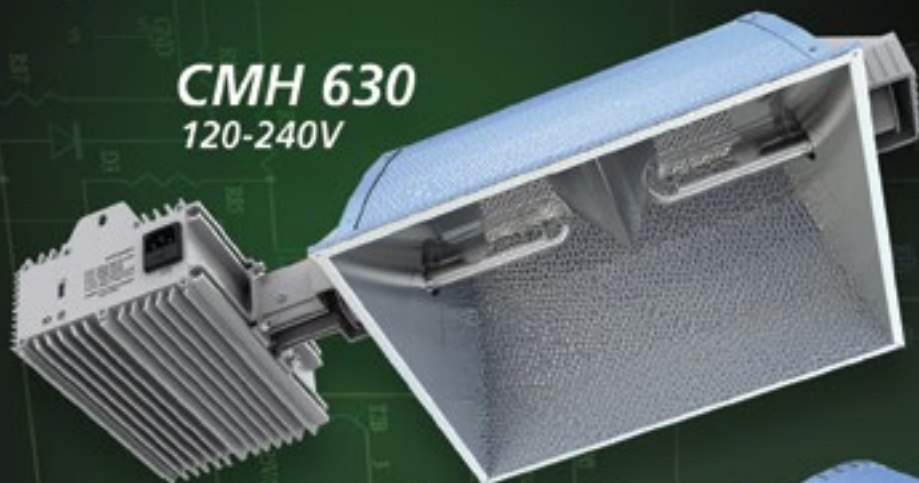
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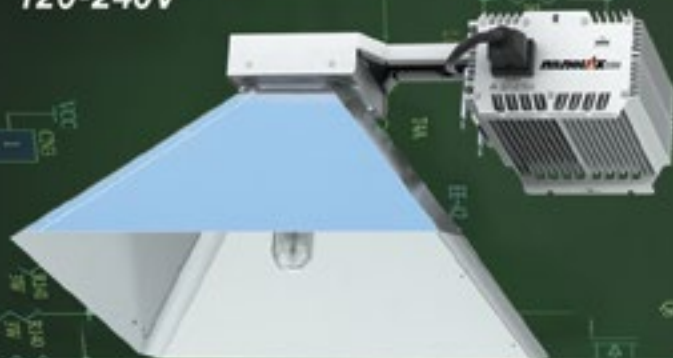
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120-240V



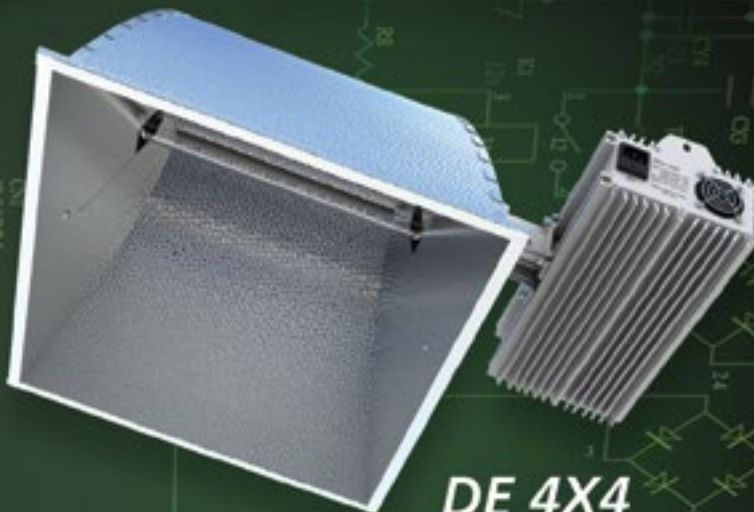
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**DE 4X4**  
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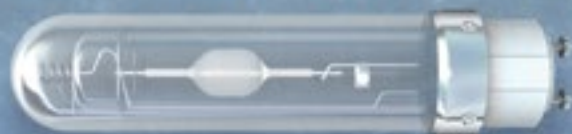
MaxPar has combined a "DE" 400V 2100 $\mu$ mol arc tube with a standard E25 Mogul base lamp envelope which can be used in conventional fixtures.

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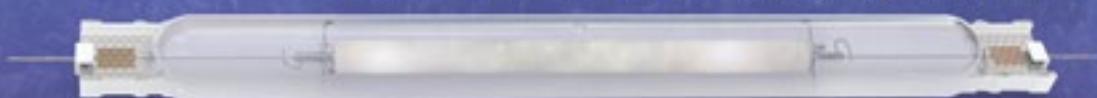
### **DE-MH**

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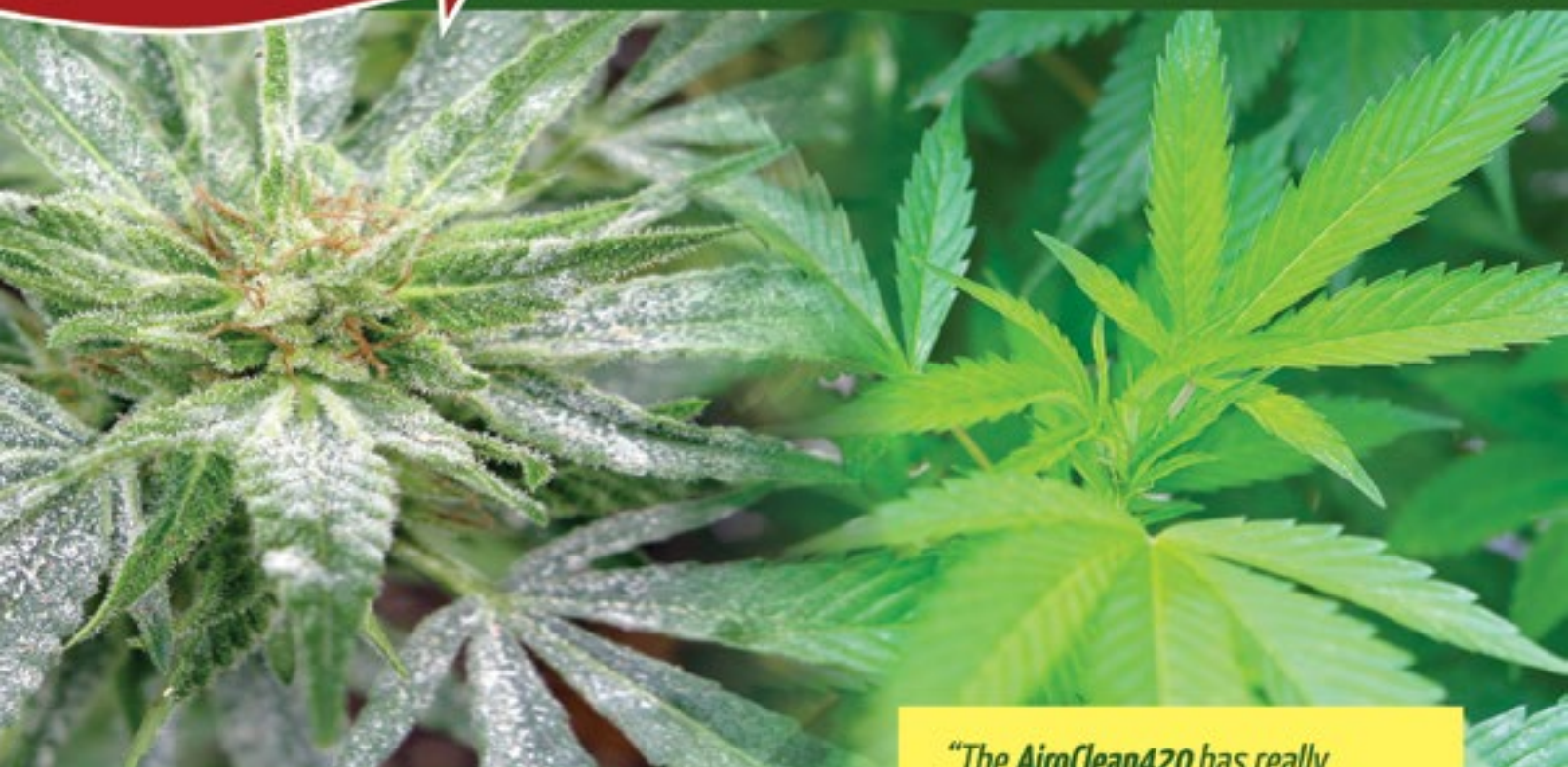
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# features

## **66** **MARYLAND**

Highly anticipated East Coast market draws industry veterans from around the country

## **72** **HMBLDT**

With attention-grabbing packaging and a mainstream marketing plan, hmbldt is poised to make a major impact in the California market

## **80** **CYBERSECURITY**

MJ Freeway crash highlights the need for cybersecurity in the cannabis industry, leaving many businesses scrambling to stay open

## **88** **PUERTO RICO**

With its status as a U.S. territory, Puerto Rico could be one of the top medical markets in terms of ROI



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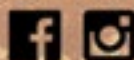
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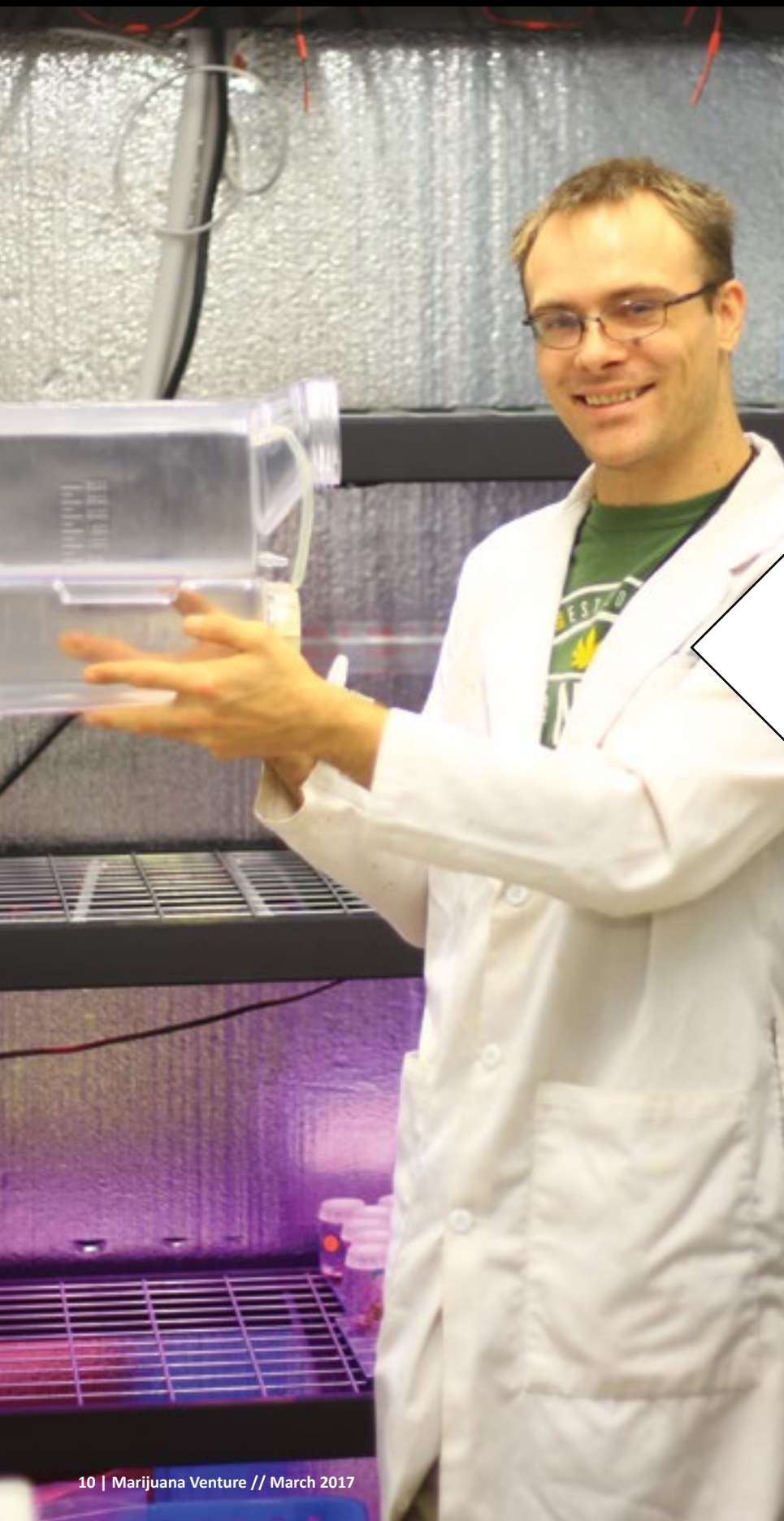
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## 94 QUALIFYING CONDITIONS

How much of an impact do regulations have on medical marijuana businesses? **Cannabiz Media** takes a deeper look into the numbers

## 110 OUTLAW CANNABIS

Scott Edson's indoor and outdoor grow operations gives him a leg up and leads to an interesting discovery about THC levels

## 116 FOR SALE

The \$50 Million Question: How much are some of the top revenue-generating businesses in the industry worth?

**ABOUT THE COVER:** Naomi Edson poses in one of the grow rooms of Outlaw Cannabis Company, which produces both indoor and outdoor crops. *Photo by Gary Delp.*



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## LEGAL PAGES

- IPOs could make Wall Street an unusual supporter of marijuana legalization.
- Landlords and tenants must pay special attention to leases for cannabis companies.
- California rules put an emphasis on environmental protections.
- Operators must consider energy efficiency, despite contrary regulations.

## OPINIONS

- 24 | Message from the Publisher

# mission

Marijuana Venture's goal is to provide the best information possible to the legal, licensed, commercial marijuana business. Our belief is that a great business publication will help professionals in the industry create more efficient and profitable businesses.





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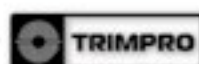
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# MARIJUANA VENTURE Staff



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Publisher

Greg founded Topics Entertainment in 1990 and grew it to be the largest privately held consumer software company. After graduating from Bellevue High School in 1975, he enlisted in the Navy. He was honorably discharged after serving from 1975 to 1979. He has four kids and enjoys skiing, hiking, scuba diving, sailing, biking and foreign travel.

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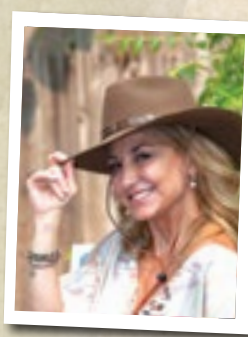


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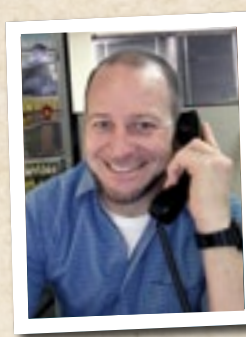


**Lisa Smith**

Sales Manager

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[Lisa@MarijuanaVenture.com](mailto:Lisa@MarijuanaVenture.com)



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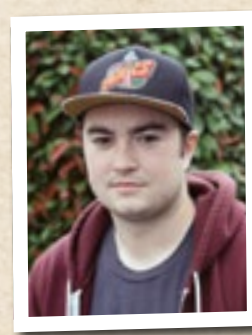
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Marketing Intern

Born and raised in Seattle, Brandon loves his city, community and family. He is also an avid Seattle sports fan and local music enthusiast who's driven by new challenges and new experiences. But please, don't get him started on beer and wine. He thinks he's an expert or something.





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# Expert contributors

Marijuana Venture seeks out well-respected experts in their fields to contribute content and guidance for cannabis industry business owners and managers.



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**DANIEL KLITTICH** is a graduate from University of California, Davis, holding a master's degree and a Ph.D. in entomology. His research focuses on the utility of silicon fertilizers to control pests, as well as the impacts fertility programs have on crop quality and yield. He is now a research agronomist with Redox Chemicals LLC on the California Coast.



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# The value of a good attorney

Legal advice is like preventative medicine



As Marijuana Venture's long-term readers already know, this magazine has blazed a trail when it comes to disseminating valuable business information for the cannabis industry.

At times, it's caused some irate responses from people who disagree with my point of view. However, to me that's a sign that we're saying things that need to be said and starting discussions that might be long overdue.

One of my basic themes has been that a lot of the people in this industry jumped in because they thought that growing marijuana in their basements or garages qualified them as "master growers." Therefore, some entrepreneurs were in for a nasty surprise when it came to the job of managing a big commercial grow operation.

The production and sale of legal marijuana is not a skill acquired from reading High Times or Weed World. Instead, like all other forms of legal commerce, launching a successful legal marijuana business requires real skills and a team of savvy business people, including lawyers and accountants.

In this issue, we've included the 2017 Cannabis Industry Legal Guide, a booklet that lists most of the law firms and attorneys in the U.S. who practice marijuana business law — an important resource for anybody operating in this highly complicated space.

Obviously, with the cannabis industry growing as fast as it is, there will be firms we missed, and we apologize in advance for anyone we overlooked. But we wanted to publish the guide because, in our view, good legal advice is crucial in this industry. It's also the reason we've made legal columns a centerpiece of Marijuana Venture since the first issue.

When a problem pops up in your pur-

suit of marijuana riches — and they will pop up — it will probably be the first time you've encountered that issue. The value of having trusted and experienced counsel is that they have likely run into and helped others address the same type of problem in the past. They've cut their teeth from the same scenarios.

Having a lawyer on your side should not be viewed as optional. I say this from experience, having spent 20-plus years owning and running the largest privately owned consumer software company in the U.S. I negotiated hundreds of licensing deals with some of the biggest names in consumer media programming, including National Geographic, Scholastic, Playboy, Disney and PBS. And I can say from experience that there were numerous times in

which a quick review by one of our attorneys saved me from missing a key point or omission in a contract that could potentially have caused problems down the road.

In my opinion, attorneys are best viewed as preventiva

medicine rather than a cure. In other words, spending a few hundred dollars in advance to have a lawyer look at a contract or agreement before you sign it could save you tens of thousands and a protracted lawsuit down the road. It's really that simple.

Three years of publishing this business magazine and meeting with dozens of folks in the industry have taught me that the expansion of the legal marijuana market is fraught with potential problems and land mines. However, most are clearly marked and easy to see if you're looking and know what the warning signs are.

That's what good attorneys do: They spot the problems before the cow dung hits the fan, so to speak. They protect you, the client, from all those things you might not have thought of.

**GREG JAMES**  
PUBLISHER

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A class in session at the CEA Learning Center West in Dyersville, Iowa.

## Hands-on workshops deliver value, education to growers

DYERSVILLE, IOWA — One of the scariest parts about starting a cultivation business is investing in growing technologies without first seeing them in action. Growers Supply's CEA Hands-on Workshops were developed to allow potential customers to spend three days at the company's 5,000-square-foot indoor facility in Connecticut or the 6,000-square-foot greenhouse in Iowa to receive first-hand experience with hydroponic and aquaponic systems.

"I really think that there is a lot that the cannabis industry can learn from traditional horticulture, particularly the commercial practices," says Jon Kozlowski, a Growers Supply sales manager who has been heavily involved with the workshops.

The three-day events bring growers of a wide variety of crops together with university educators and commercial farmers in a classroom setting.

"It's really cool to see the dynamics in the groups, and of course, on top of all of this, throw in the cannabis producer and we get really cool groups of people attending," Kozlowski says.

Another valuable part of the learning experience is receiving feedback from past attendees returning to discuss what happened after they invested in a hydroponic or aquaponic system.

"That's not always a totally positive experience," he says. "But we want them to share what they struggled with on top of their successes. Hydroponics isn't a turn-key solution where you plug it into the wall and come back six weeks later to find lettuce, tomatoes or cannabis plants. It's still farming and there's still the challenges of being a farmer."

Since the workshops alternate between the Iowa and Connecticut learning centers during the winter, spring and fall months, the class sizes rarely exceed more than

50 people. The next CEA Hand-on Workshop, on March 21-23 at the CEA Learning Center West in Dyersville, Iowa, is accepting registrations now.

"The message that we want to get across is that there are commercial systems and commercial growing strategies and hydroponics is one of them," Kozlowski says. "We are in an industry now that cannabis is starting to feel some of the growing pains and more competition. To have a successful business and to put together a successful business plan, you have to look at your operating costs, you have to look at your expenses and you have to be more competitive."

After the workshop is over, attendees receive a credit equal to the cost of the course that is redeemable toward any purchase from Growers Supply.

More information: [www.growerssupply.com/techcenter](http://www.growerssupply.com/techcenter).

### MORE EVENTS

**March 5-7:** Coming to the Sheraton Marina in San Diego for its third year is the **California Cannabis Business Expo**. The March 5-7 show, sponsored by the





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Marijuana Investors Summit and produced by MJIC Media, expects more than 150 exhibitors and 3,000 attendees. Cultivation, the science and medicine of cannabis, compliant business management, processing, edibles, manufactured products and the Marijuana Investor Summit are listed as the show's educational courses. Organizers have announced a job fair and an entrepreneur demo day for the event.

More information: [calcanbizexpo.com](http://calcanbizexpo.com).

**March 15:** Fisher Phillips invites business owners to attend **Don't Go Up in Smoke: 2nd Annual Workplace Law Seminar for Canna-Businesses** on March 15 at the Georgetown Ballroom in Seattle, Washington. Attorneys from Fisher Phillips offices in Oregon, California and Washington will join several other attorneys and businesses operating in legal cannabis to discuss legal issues such as pay practices, handling employees who behave poorly, protecting trade secrets and avoiding employee-related government investigations. Tickets are available now for \$45.

More information: [rsingh@fisherphillips.com](mailto:rsingh@fisherphillips.com).

**March 20-22:** The **Cannabis 2017 Cultivation Conference** is coming to the Oakland Marriott City Center in Oakland, California on March 20-22. The event combines educational programs for cultivation and business management techniques with an exhibitor floor for vendors.

More information: [www.cannabiscultivationconference.com](http://www.cannabiscultivationconference.com).

**March 20-22:** Returning to Tel Aviv-Yafo, Israel on March 20-22, **CannaTech** brings together international leaders in government policy, science, medicine, agriculture, research, finance and entrepreneurship for two days of networking. The event will feature several TED-style presentations on multiple facets of cannabis medicine and business. VIP attendees can add one extra day to their itineraries for an inside look at the Israel home-grown experience and an intimate tour of the holy lands.

More information: [www.canna-tech.co](http://www.canna-tech.co).

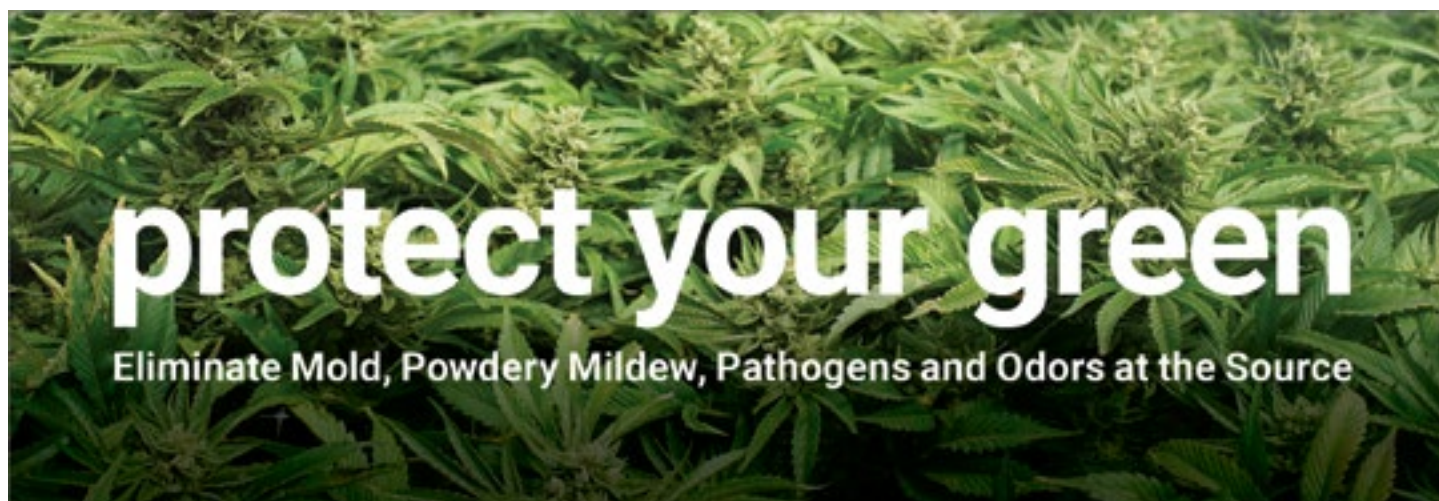
**March 28-29:** MedMen and IMN present the inaugural **Institutional Capital Cannabis Conference**, or IC3, on March 28-29 at the Hayes Mansion in San Jose, California. The show's organizers say the event was created to address the needs of the institutional and accredited investor looking to diversify his or her portfolio with cannabis as an alternative class. The event has nearly both days filled with educational tracks, speakers and discussions. Tickets are available now.

More information: [imn.org](http://imn.org).

**March 31-April 1:** The fourth annual **NoCo Hemp Expo** opens March 31 at the Ranch Events Complex in Loveland, Colorado. The event focuses specifically on the industrial hemp industry and brings hemp businesses and professionals from around the globe together under one roof. Speakers will address a variety of aspects about hemp laws and business opportunities.

More information: [nocohempexpo.com](http://nocohempexpo.com).

**April 3-7:** The University of Arizona's Controlled Environment Agriculture



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Center will host the **Greenhouse Crop Production & Engineering Design Short Course** on campus in Tucson, Arizona on April 3-7. The course does not discuss cannabis cultivation, but focuses on the best information in controlled environment agriculture. It includes presentations from industry experts, hands-on education and training workshops, plus a commercial greenhouse tour. Webinar options are available for those who cannot attend the course in person.

More information: [ceac.arizona.edu/public-courses](http://ceac.arizona.edu/public-courses).

**April 10-12:** The International Cannabis Business Conference crosses the Atlantic to bring **ICBC Berlin** on April 10-12 at the Maritim ProArte Hotel Berlin. Considered to be one of the leading European nations for the cannabis industry, Germany's progressive medical marijuana regulations will soon allow licensed companies to begin cultivating medical marijuana. The Berlin show plans on servicing those soon-to-launch companies with educational tracks, vendor booths

and A-list speakers like Steve DeAngelo and U.S. Congressman Dana Rohrabacher. Tickets are on sale now.

More information: [internationalcbc.com/icbc-berlin](http://internationalcbc.com/icbc-berlin).

**April 12-13:** Organizers at the Impe-rious Expo are set to host the **Cannabis Business Expo** on April 12-13 at the Phoenix Convention Center in Arizona. The show plans to promote the legal medical cannabis industry in Arizona by hosting a lineup of speakers discussing the latest issues in the state, educational tracks, an exhibitor's hall and by providing discussion forums for industry professionals to network. Tickets for the show are available now.

More information: [imperiousexpo.com](http://imperiousexpo.com).

**April 21-22:** The first conference to offer Continued Medical Education (CME) credits for health care professionals interested in medical cannabis will be at the David L. Lawrence Convention Center in Pittsburgh, Pennsylvania on April 21-22. The **World Medical Marijuana Busi-**

**ness Conference & Expo** is a 22.5-credit CME course that provides information to health care professionals to implement medical cannabis into their practices. The educational content has been curated to apply to several medical states. The course, hosted by Compassionate Certification Centers, also includes a 200-booth vendor section, a cocktail mixer and a chance to meet with former NFL star Ricky Williams.

More information: [www.compassionatecertificationcenters.com](http://www.compassionatecertificationcenters.com).

**April 21-23:** The Sheraton Centre Toronto Hotel hosts **O'Cannabiz** on April 21-23 in Ontario, Canada. The event addresses Canada's decriminalization of marijuana from a business perspective. Organizers plan to prepare attendees for the new marketplace through panels and discussions with forward-thinking industry leaders. The first day of the show provides attendees with a crash course of the industry, while more complex topics are addressed during the following days. Each day of the show includes breakfast,

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More information: [ocannabiz.com](http://ocannabiz.com).

**May 3-4:** The fifth annual **Indoor Ag-Con** is to be held on May 3-4 at the Las Vegas Convention Center in Nevada. This year the show has adopted a steampunk theme to celebrate the merging of old and new technologies accessible to commercial marijuana producers. The two-day conference focuses heavily on indoor agriculture and the vendors, speakers and educational tracks share the same emphasis. Tickets and exhibitor packages are available now.

More information: [indoor.ag](http://indoor.ag).

**May 16-19:** The spring **Marijuana Business Conference and Expo** will be at the Gaylord National Harbor Hotel in Washington, D.C. on May 16-19. The business crash course is scheduled for the opening day, while the MJBizCon Mixer will be May 17. The spring event also features new networking opportunities, three days of educational tracks, roundtables and seminars, and access to a variety of

exhibitors. While the fall Marijuana Business Conference is held annually in Las Vegas, the spring show moves around the country. In previous years, it has been in Chicago and Orlando, Florida.

More information: [mjbizconference.com](http://mjbizconference.com).

**June 3-4:** Maximum Yield Inc. is set to debut its next line of indoor grow events, starting with **GrowX** on June 3-4 at the San Jose McEnery Convention Center in San Jose, California. After 15 years of hosting indoor gardening shows, Maximum Yield plans to include a medical cannabis component along with the latest in products and technology.

More information: [mygrowx.com](http://mygrowx.com).

**June 12-14:** The **NCIA Cannabis Business Summit** returns to Oakland, California on June 12-14. Show organizers expect a record turnout at the Marriott hotel.

The fourth annual event will have more than 250 exhibitors and at least 4,000 business executives and buyers. The show is open to the general public; however, exhibitor space is reserved for NCIA mem-

bers. Ticket information and the show's agenda have yet to be announced.

More information: [cannabisbusiness-summit.com](http://cannabisbusiness-summit.com).

**June 14-16:** The **Cannabis World Congress and Business Expo** heads back to the Javits Convention Center for its fourth year in New York City on June 14-16. The event provides B2B networking, educational seminars and the latest in technological solutions for New England and New York. Show organizers have booked industry service providers from accounting to vaporizer manufacturers.

More information: [www.cwcbexpo.com](http://www.cwcbexpo.com).

**June 21-22:** Last year, Marijuana Venture launched the **Interchange** trade show with two successful events in the Seattle area. The purpose behind the event is to get growers and processors in the same room as retail owners and buyers for two days of one-on-one meetings.

In 2017, Marijuana Venture is again planning two Interchange buyers markets at the Renton Pavilion in Renton,



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Interchange, Fall 2016

Washington. The first will be June 21-22. It will be limited to 50 retailers and 50 growers/processors. The events sell out fast, so interested parties should contact Marijuana Venture at 425-656-3621 or email Greg James at [gjames@topics-ent.com](mailto:gjames@topics-ent.com).

The first Interchange buyers market in June 2016 featured about 25 growers and 25 retailers. It was deliberately kept small in order for the staff of

Marijuana Venture to gauge the interest level and to work out any glitches. We learned a lot from that first event (most of it good), and immediately booked the Renton Pavilion for a second event in the fall. The show in November was expanded to 40 retailers and 35 grower/processors. As with the earlier show, the fall event was a huge success, and both sides of the business (retailers and producer/processors) commented that they

got a lot of work done and made many new connections.

By Marijuana Venture's estimates based on feedback, total sales and commitments exceeded \$10 million at the Fall 2016 Interchange, and several growers sold their entire crop in two days of meetings.

More information: [mboehm@topics-ent.com](mailto:mboehm@topics-ent.com).

**July 15-18: Cultivate'17** The largest commercial cultivation show in the U.S. returns to the Greater Columbus Convention Center in Columbus, Ohio on July 15-18. The show gathers the largest players in commercial agriculture under one roof to share innovations in technology and network. Organizers welcome cannabis cultivators to attend and take advantage of the wealth of ideas and trade secrets utilized in Big Ag.

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More information: [cultivate17.org](http://cultivate17.org).

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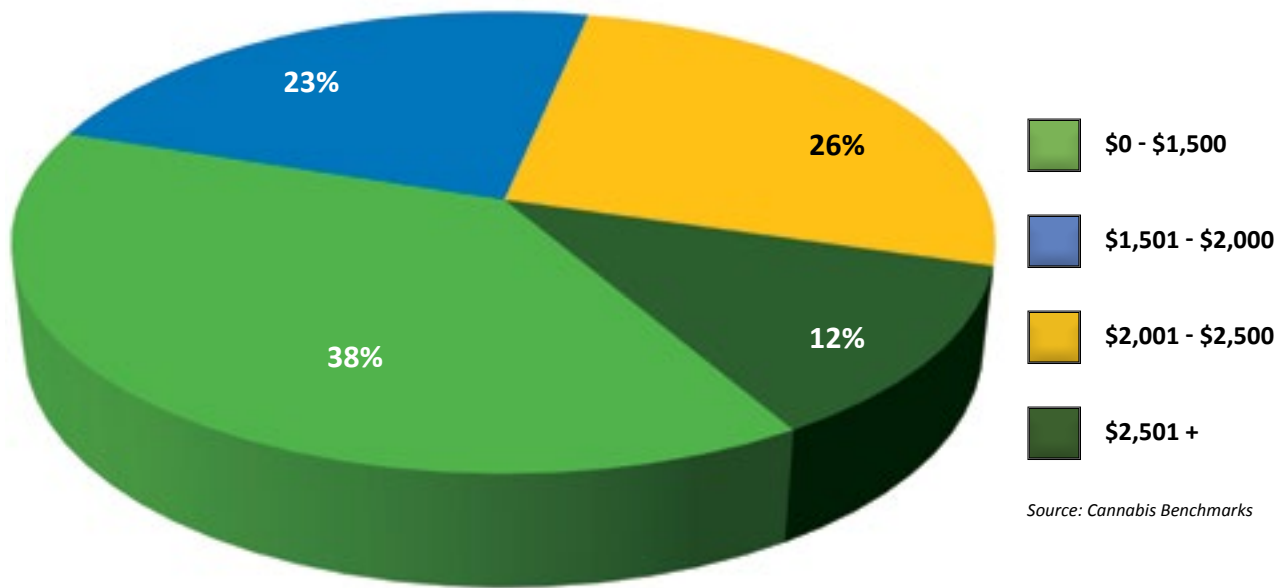


# MARKET WATCH

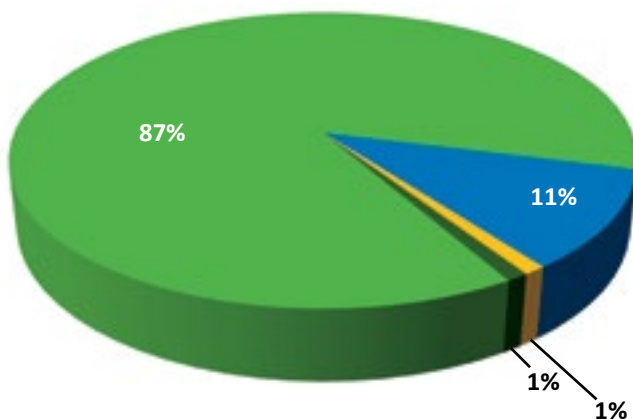
A look at business metrics from the legal cannabis market, with information provided by FrontRunnerData.com and CannabisBenchmarks.com

National spot pricing by grow type

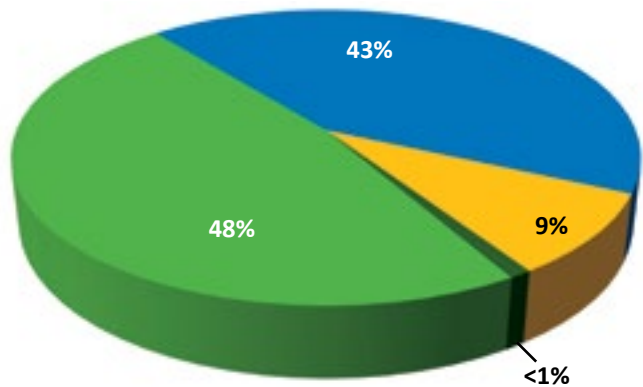
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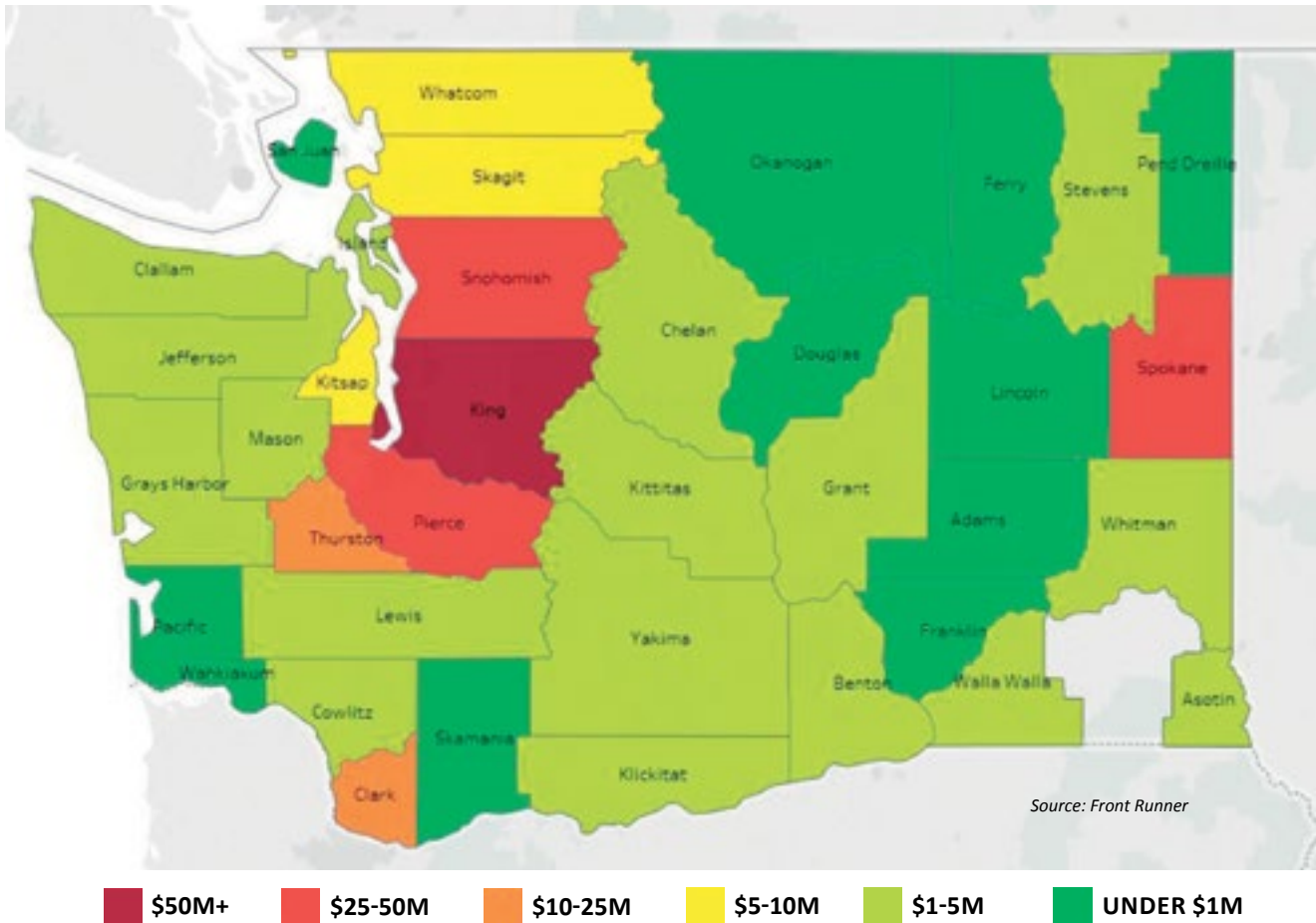


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# MARKET WATCH

## Marijuana excise tax revenue generated by county in Washington (2016)



## Marijuana taxes exceed the state's own estimates

By Greg James

How often do you hear about government underestimating something like taxes or the amount of money required to complete a project? If you answered “never,” you probably think like most people.

As crazy as it sounds, when it comes to the tax revenue generated by legal marijuana in Washington State, everyone has been wrong; the revenue has far exceeded initial estimates. According to a Jan. 22 story in The Seattle Times, taxes from cannabis sales were originally estimated to be \$374 million for the 2016-17 budget period, which ends in June. However, according to the latest revenue numbers from the Washington Office of Financial Management, the state is actually on track to collect nearly \$472 million in marijuana

taxes for the period. That's nearly \$100 million more than forecast!

It gets better: For the 2018-19 budget, taxes were originally projected at \$695 million and has now been revised to \$730 million.

Meanwhile, with a much smaller sample size and still developing market, Oregon has also seen higher-than-projected marijuana tax revenue. According to the Oregon Department of Revenue, the state collected \$60.2 million worth of marijuana taxes in 2016 — about six times more than originally estimated. Colorado's boom has also continued with more than \$1 billion worth of cannabis sold in 2016.

When you combine the tax revenue with lowered enforcement costs (police), job creation in both rural and urban areas and all the other fiscal benefits, it seems quite likely that cannabis will have a multi-billion-dollar impact on the Pacific Northwest alone. That's revenue that can go toward education, Medicaid, substance abuse treatment and other social programs and infrastructure.



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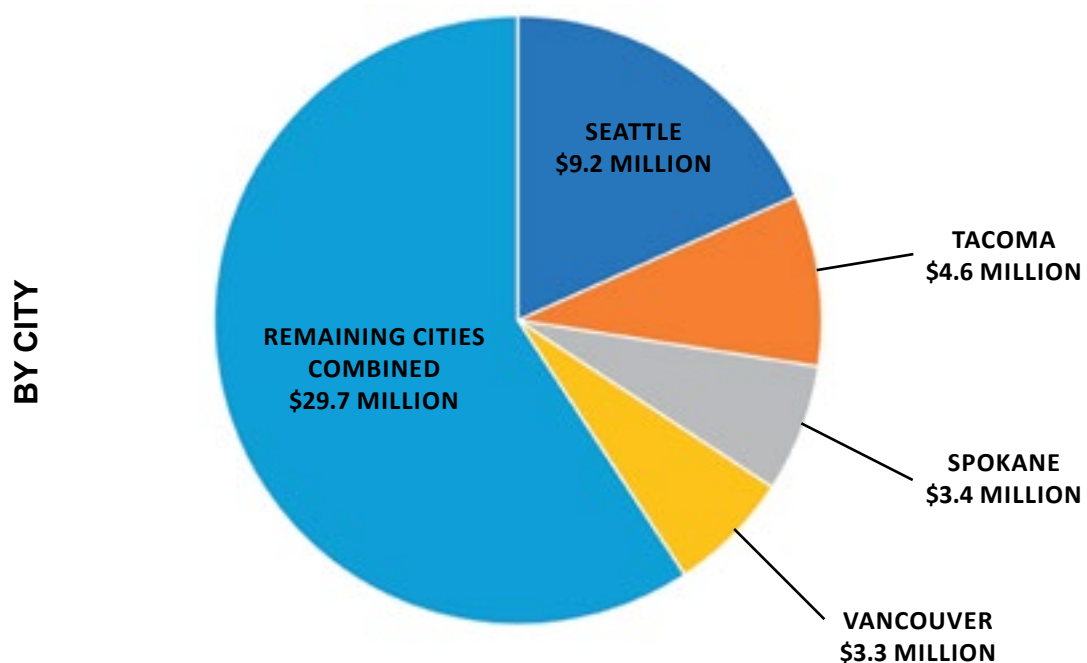
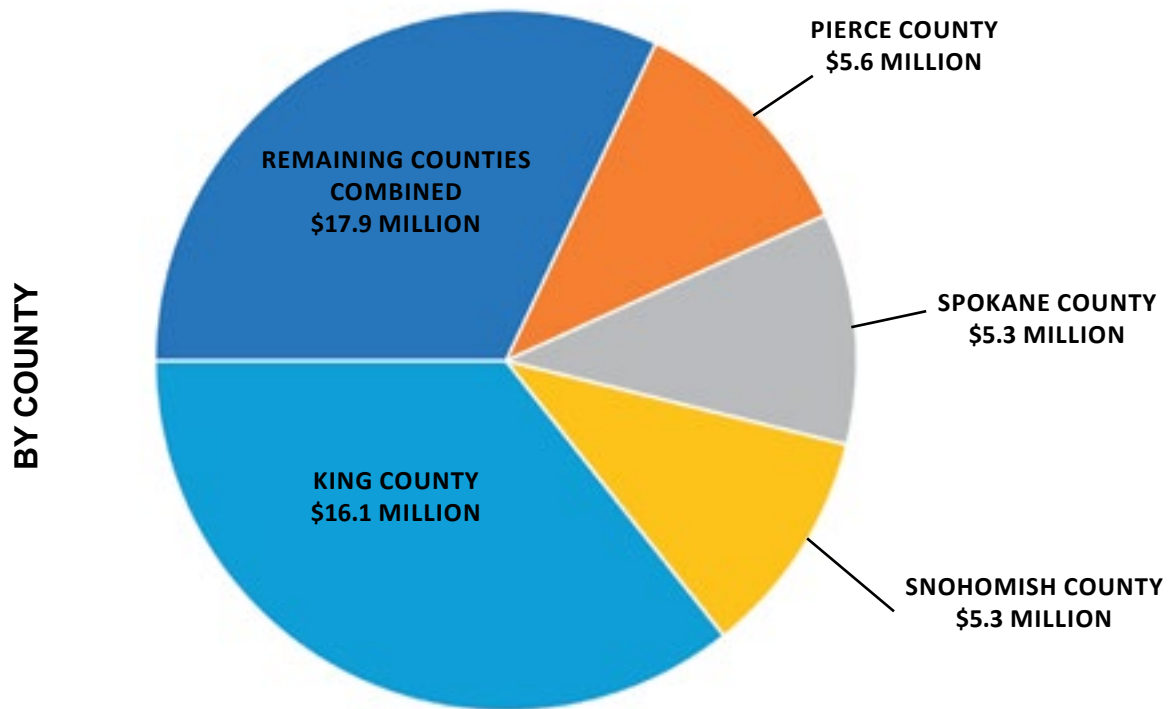


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# MARKET WATCH

Marijuana sales taxes collected in Washington (2016)







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At Khush Kush, where the growing philosophy is to keep it simple, slabs of coco coir are used not only as a growing medium, but to hold the plant, allowing the company to make only a single transfer through the growth cycle.

# WHAT'S IN YOUR GROW?

*A look at the equipment, supplies and processes deemed indispensable by commercial cannabis growers*

By BRIAN BECKLEY

## **KHUSH KUSH BELLINGHAM, WASHINGTON**

For a man in his 20s, Sandip “Sunny” Saini seemed to have everything a guy his age could want. He was living in Connecticut and working as an NBA researcher/producer for television sports giant ESPN. Life was pretty good.

“It was literally the dream job,” he says.

But when voters in Washington legalized recreational marijuana in 2012, Saini saw an opportunity.

“My parents and myself didn’t have any experience in the industry at all,” he says, but they could see the possibilities in getting in on the ground floor of a burgeoning industry.

His parents were in the retail business, with his father, Surgit Singh, owning a convenience store in Bellingham, so the family originally hoped for a retail license. While they did not win the retail lottery, they did receive a license for a Tier 3 production facility and decided to try their hands at farming. With that, Khush Kush was formed.

Saini, an East Indian immigrant who moved to Seattle in 1995, named the company after the Hindi and Punjabi word for “happy.” The name had a nice ring to it and the focus on happiness was a foundation for the company.

Saini, now 31, and head grower Jeremy Bevin set out to build a similar grow operation focused on simplicity. The company officially began production in April 2016 with the goal of producing pesticide-free, bou-



tique-quality cannabis at its indoor grow.

#### THE BUILDING

Bevlin says the pair designed Khush Kush's building to include the best parts of traditional greenhouse agriculture inside their 9,200-square-foot warehouse space. Khush Kush uses two main rooms, one for veg and another for flowering.

Inside, the rooms resemble a tomato hothouse, with rolling greenhouse tables and plants laid out in 10 rows linked by drip irrigation system. The wheeled tables help maximize space and the irrigation helps cut down on employee costs.

"All the water is automated," Bevlin says, adding that it uses a simple waterfall pump to raise the water into PVC pipes that link to a drip emitter to keep the plants hydrated using basic household timers.

#### THE MEDIUM

Khush Kush's setup is a soilless hydroponic growing system, but the use of coco coir slabs and cubes as a growing medium help keep the roots saturated in nutrients.

Coco coir is produced from the husks

of coconuts and can hold eight times its weight in water. It's often recommended for the type of drip irrigation system used at Khush Kush.

Bevlin uses the coco coir not just as the medium, but in large slabs to hold the plant, instead of using pots. Khush Kush's trellis system features snap-on netting to help keep the plants growing strong, instead of strapping them to posts. The trellis also allows the growers to add layers as the plants grow.

"We're moving away from the hobby/basement grow style," Bevlin says.

The Khush Kush growers only move the plants once, allowing them to root in coco coir cubes before moving them to the slabs for vegetation and then flowering.

"We tried to take out all the labor," Bevlin says.

#### THE LIGHTS

Bevlin notes that Khush Kush is not doing anything "super groundbreaking" with its lighting rigs, though it uses ePapillon double-ended high-pressure sodium bulbs with reflector hoods to maximize growth. It's a product he says he took from traditional commercial

agriculture and applied to cannabis.

"It has a brighter spectrum," he says. "The penetration into the canopy is a lot deeper."

To counteract the heat generated by the lights, Khush Kush runs an air conditioner to keep temperatures in the grow and flower rooms between 74 degrees and 84 degrees.

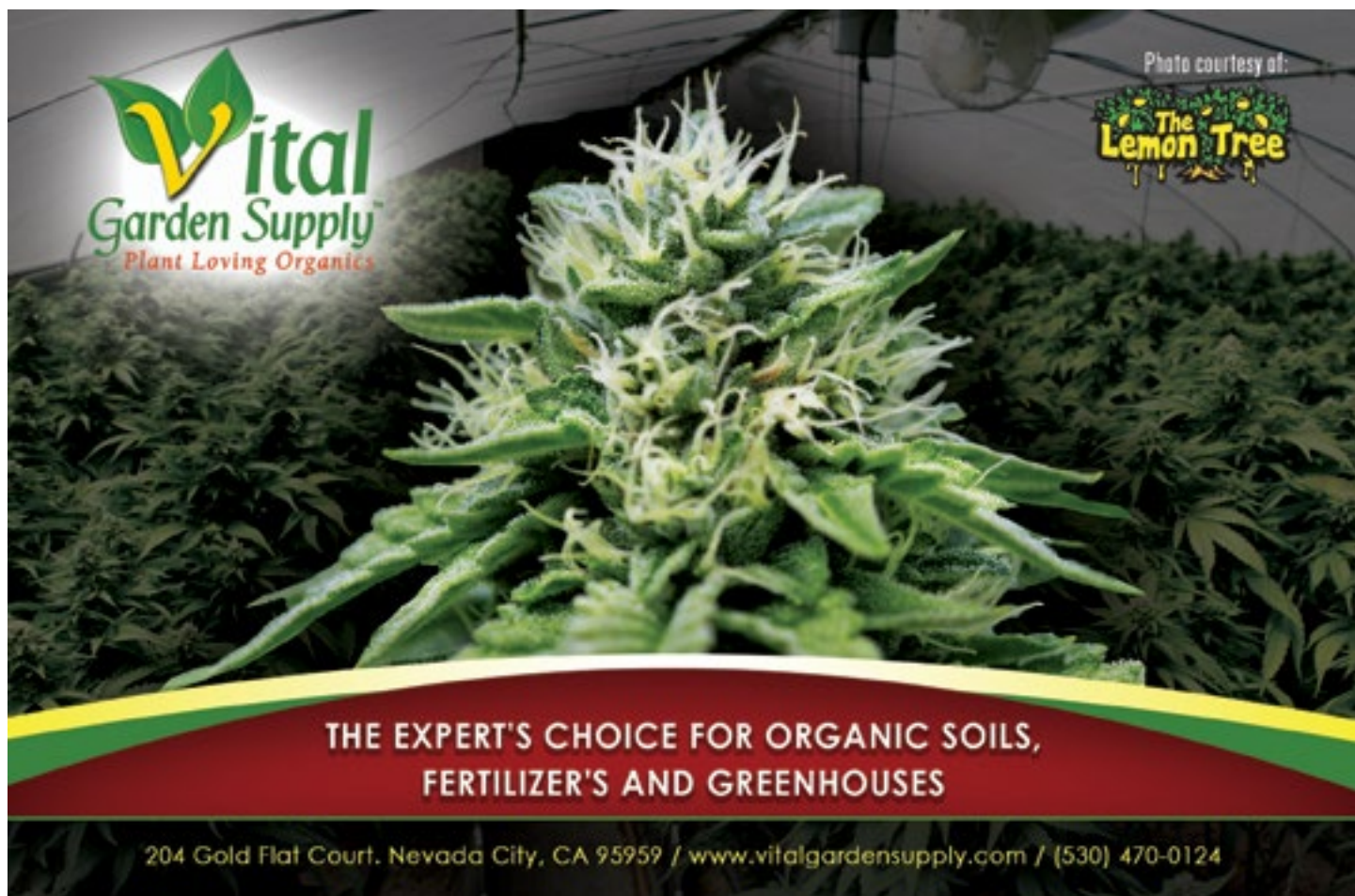
Bevlin tries to group strains that grow well together based on feeding habits. For example, Bevlin says the Chem Dog, Chem 4 and Chem 91 strains all have similar traits and grow well together, again helping to maximize space and nutrients.

#### THE PHILOSOPHY

Everything at Khush Kush, including the build-out of the grow operation itself, is focused on the company's philosophy of keeping things "as simple as possible" while producing great results, according to Saini.

By taking cues from what works in commercial agriculture, Saini and Bevlin's basic automation and simple irrigation systems allow them to focus on the product.

"You can make it as complicated as



The advertisement features a large, healthy cannabis plant in the center, growing in a greenhouse. The plant has green leaves and white, frosty buds. In the top left corner, there is a logo for "Vital Garden Supply" with a green leaf icon and the tagline "Plant Loving Organics". In the top right corner, there is a small logo for "The Lemon Tree" with the text "Photo courtesy of:" above it. At the bottom, there is a red banner with white text that reads "THE EXPERT'S CHOICE FOR ORGANIC SOILS, FERTILIZER'S AND GREENHOUSES". Below the banner, there is a line of text providing the address "204 Gold Flat Court, Nevada City, CA 95959", the website "www.vitalgardensupply.com", and the phone number "(530) 470-0124".

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you want or keep it simple and save yourself some headaches,” Bevin says. “Make it energy efficient and maximize work space.”

For Saini, keeping it simple will allow the company to continue growing with the goal of becoming one of the top producers in the state and positioning itself for the day when the brand will be allowed to go national.

“The simpler you can make it, the longer you’re going to last,” Saini says, adding, “Anything I do, I want to be the best at it.”

So after everything — leaving the dream job, moving home, starting a new company with his family and then getting his first product to market — is Saini still living up to his company’s name? Is he, in fact, happy?

“I’m extremely happy,” he says. “I’m glad I had the opportunity to do this.”

Head grower Jeremy Bevin checks on the plants in Khush Kush’s 9,200-square-foot Tier 3 facility in Bellingham, Washington.

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# FRANCIS BACZEK

---

Arizona chef brings cooking skills to the cannabis industry,  
but spends more time with a calculator than an oven

By PATRICK WAGNER

**C**hef Francis Baczek's first venture into cooking with marijuana gave no indication that he might later have a career in the field.

"I didn't really do much cooking with cannabis until I started in this industry," he says. "I made some brownies when I was younger, but I never got into it. I didn't know it was such a science."

But after more than two decades working in a kitchen, Baczek knew more than enough about the culinary arts to cross over to the cannabis industry and take a position as an edibles chef for Uncle Herb's in Payson, Arizona.

"I'm a patient myself and Uncle Herb's is the dispensary that I went to," Baczek says. "I threw it out there one day that if they ever needed a chef, I know my way around a kitchen. They offered me the job and once I got into it I realized that it's only 20% about cooking."

In addition to a commercial kitchen, Uncle Herb's features an extraction lab and its own cultivation facility.

Baczek already knew that cleanliness was going to be a major factor in any kitchen, but what he didn't see coming was the impending need to polish up on his arithmetic.

"Everything we do in this dispensary is like craft beer, where you have to reformulate every time because the oil is a little different — maybe a little stronger or it has more terpenes in it, things like that," he says. "Juggling that means using

more math than anyone would suspect in the cannabis industry."

Outside of the cannabis industry, the title of chef has a somewhat universal, straightforward meaning. But in a vertically integrated, tightly regulated medical marijuana business, the word doesn't quite encompass Baczek's responsibilities at Uncle Herb's, where he needs to coordinate with lab technicians and analyze test results on a regular basis, along with his regular kitchen duties.

"Basically, I do all the formulations and the actual making of the medicine myself," Baczek says.

Relying heavily on the formulas de-

rived from lab tests, Baczek uses cannabis oil for its accuracy and its natural flexibility as a cooking agent. Baczek says after the oil has been infused into a different agent, like cannabutter, then he can be certain that each Big Foot Bites chocolate bar — his personal favorite — has exactly 100 milligrams of THC.

Uncle Herb's menu includes some of the more traditional fare like chocolates, cookies and hard candies, along with gluten-free, vegan and low-sugar options for patients at the 45 dispensaries that carry Uncle Herb's products.

The brownie, however, is not listed among them.





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# SHANEL LINDSAY

---

Former Boston attorney makes tenacious, decade-long journey to improve medical cannabis products

By PATRICK WAGNER

**B**efore becoming an inventor and one of the authors of Massachusetts' adult-use initiative, Shanel Lindsay was a successful attorney and a medical marijuana patient.

By making her own edibles and topicals to treat pain and inflammation caused by an ovarian cyst, she quickly discovered that "activating cannabis as an accurate medicine was almost impossible."

Lindsay knew there had to be a better way to access the plant's medicinal qualities, so she spent the better part of 10 years trying to find it.

"I was frustrated by the fact that I couldn't know what the dose was or even if I had done it correctly," she says. "I was basically stabbing in the dark. I was still having these frustrations about whether I was doing this the right way and then medical marijuana comes to Massachusetts and I get access to a laboratory."

In 2013, after medical cannabis legislation passed in Massachusetts, Lindsay began conducting her own lab research, confirming her suspicions that only a limited percentage of the plant's potential was being utilized through conventional methods. Her research became the basis of the cannabis biotech company she founded, Ardent Cannabis, and its flagship product, the Nova Decarboxylator.

The Nova is a device that removes the innate carboxyl chains in cannabis, converting inactive THCA into THC and allowing the plant's full potential to be unlocked. It was a claim that initially

drew a lot of skepticism.

"It was hard to convince people that they were doing it wrong for 20-plus years," she says. "But the science would speak for itself."

At first, Lindsay says Ardent had few investors beyond her mother; organic fundraising efforts built her first 100 Nova units. Forming Ardent and bringing the Nova to fruition required Lindsay to leave

her career as an attorney behind.

But with Massachusetts' recently approved adult-use initiative, her company saw tremendous growth in 2016. Ardent has now sold more than 2,500 Nova units and is looking to expand.

"This is all about increasing access to cannabis," she says. "If this wasn't my business, I would be doing this anyways. It's the medicine I use."





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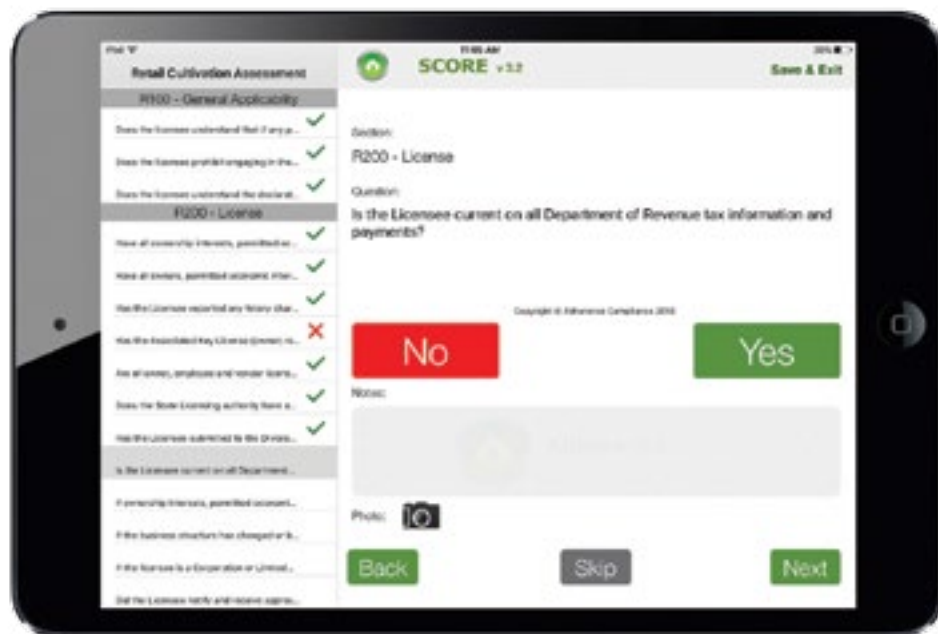


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### Adherence SCORE app

Adherence Compliance in January released an update of its Adherence SCORE App, which the company describes as “the world’s best cannabis compliance management software available.”

Version 3.3 of the app improves security and usability of previous versions

of the app, which was initially released in 2014. The app allows owners and operators of cannabis businesses to access databases of federal, state and local compliance libraries.

Adherence Compliance partnered with the law firm Offit Kurman to review the libraries for applicability and thoroughness.

Through the app, business owners can monitor and report on internal compliance, conduct periodic risk assessments and access compliance reports. The program asks for a location and then follows with a series of questions. It runs the answers through an algorithm that delivers a score on a scale of 1 to 100. A compliance score of 90 or higher indicates a very low risk of the business being shut down, while a score of less than 80 means the business is at a high risk of closure.

“We know exactly where marijuana businesses fail,” Adherence Compliance founder and CEO Steve Owens says.

The Adherence SCORE App is available exclusively for iOS through the Apple Store. It contains compliance information for Colorado, Washington, California, Nevada, Illinois, Maryland and Massachusetts. More states are expected to be available this year, including Oregon, Pennsylvania and Maine.

The cost of the service is \$150 per month per operational license with multi-license discounts available. There is also a \$200 per month per state option for Adherence resellers.

More information: [adherence-corp.com](http://adherence-corp.com).

### Fritsch Pulverisette

Noted German grinding and milling machine maker Fritsch is making a move into the cannabis space, promoting its line of Pulverisette cutting mills to producers and manufacturers as a way to provide consistent, reproducible grinds of flowers and leaves at a rate of about one pound per minute, up to approximately 50 pounds per hour.

The company promises that unlike closed-batch systems like a blender, the company’s P-14 and P-19 continuous milling systems do not exert any heat load on the plant material, so no terpenes or cannabinoids are lost.

In addition, all interior cutting surfaces are stainless steel and the cutting chamber opens completely to allow easy access for cleaning.

More information: [www.fritsch-us.com](http://www.fritsch-us.com).







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## NutriBrix

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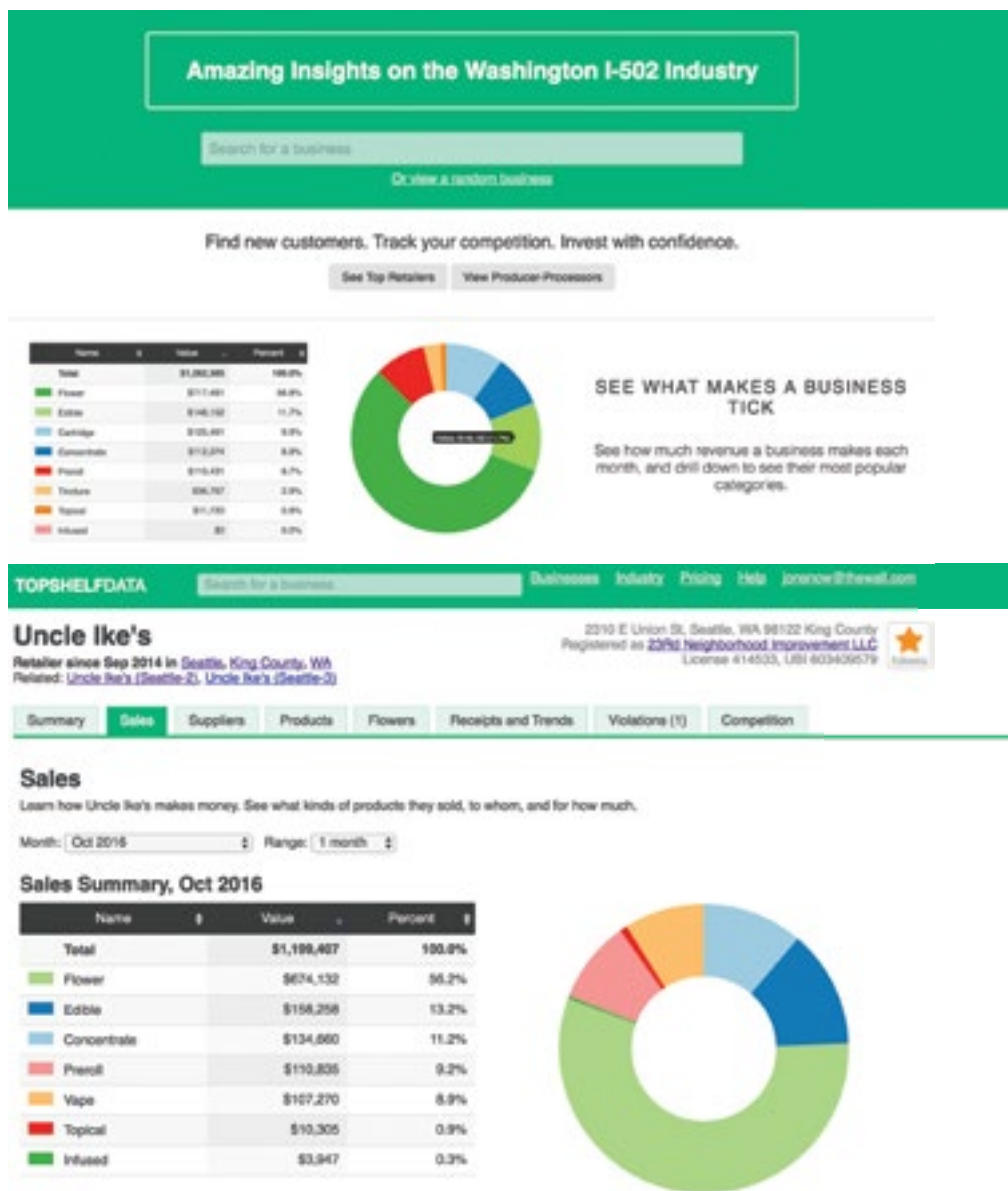
The product is not a nutrient itself, but allows plants to absorb higher levels of nutrients, producing taller, heavier plants in the same footprint with the same amounts of water and light.

NutriBrix has been shown to produce denser and longer root zones, with higher levels of brix, the measurement of sugar in an aqueous solution. Extended root zones and high brix levels are associated with increased nutrient density, shorter harvest times and increased yields.

According to the company, NutriBrix has shown a 75-125% increase in yield as well as increases in THC and CBD levels.

The NutriBrix solution can be used in any application that requires water, from soil to aquaponics to everything in between. It is a supplement that is added to a regular watering routine, which will not otherwise change.

More information: [www.nutribrix.com](http://www.nutribrix.com).



## Top Shelf Data

Top Shelf Data is the latest entrant in the business information category of the cannabis industry, providing in-depth, web-based data and analytics of Washington's marijuana market.

The company was founded by a pair of tech entrepreneurs who have previously built multiple companies in the market research space.

Key features of Top Shelf Data include: viewing, sorting and filtering products by their THC content; price-per-gram reports that give both producers and retailers tools to negotiate prices; popular strains; rule violations; linking business pages to their logo, website, social media and more.

The basic site is free to use and features historical data from a year ago. The upgraded Starter and Professional plans unlock the latest public data and deeper industry insights for \$49 and \$99 a month, respectively.

For major industry players, government agencies and large-scale investors, there's the Enterprise package that starts at \$499 a month and allows users to order customized reports, specifically tailored data dumps and more specialized features.

The company's goal is "to create insights that you can't afford to miss, at a price that everyone can afford to pay."

More information: [www.topshelfdata.com](http://www.topshelfdata.com).



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### Simple Marijuana Menu

Grassworks Digital's Simple Marijuana Menu program offers retail stores the chance to maintain and update an on-

line menu of available product through the store's point-of-sale system.

The program can save store owners and operators time with automated

menus, instead of constantly updating a menu by hand as products are added or sold out. The Simple Marijuana Menu works with the POS to automatically maintain an up-to-date menu that can be integrated with a store's digital menu and websites like KushGuide or Leafly.

In addition, the Simple Marijuana Menu has an online ordering system to allow customers to place an order with a shop that will be ready for pick-up when they arrive.

It is designed to work with multiple POS systems, including GreenBits, Bio-TrackTHC and Corona. The system is available in Washington and Oregon, with plans to expand nationally. The menu comes in two versions, a \$149 plan that handles only menus and a full-service plan for \$349 that includes the ability for customers to order ahead.

More information: [www.simplemarijuanamenu.com](http://www.simplemarijuanamenu.com).

### Black Tie Couriers

Black Tie Couriers of Seattle was one of the first businesses in Washington to receive a transport license and began legally moving marijuana around the state in early January, allowing producers and processors to focus on their business instead of shipping their product to store shelves.

Based on the distribution model used in the beverage industry, Black Tie Couriers promises a "discreet, safe and legal way to transport business-to-business" in the Evergreen State, co-owners Sal and Vince Packard say. The company uses unmarked cargo vans that are customized to meet additional state transportation regulations to move cannabis products, including useable marijuana, concentrates, infused products and even live plants from any licensed business in the state to another.

The company plans to provide Tier 1 and Tier 2 producer/processors with a way to compete with larger grows by reducing transportation needs and costs.

"Our goal is to support these small- and mid-size players by providing this delivery service and help them expand

their business," Sal Packard says.

"Our mission is to give our customers the peace of mind knowing their products are moving from point A to point B with the utmost care and professionalism," Vince Packard adds.

Black Tie Couriers will set up standard routes so businesses can know

where they will be each day and plan accordingly. The company also use a tamper-evident, single-use locking system on all its transports for tracking purposes. Its vans meet all state regulations for the transport of marijuana.

More information: [www.blacktielcouriers.com](http://www.blacktielcouriers.com).





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Small enough to fit on a lapel or shirt pocket, the SAN-0001 monitor uses non-dispersive infrared (NDIR) CO2 sensing technology to provide long life, accuracy and stability for daily use. Free data logging software is included.

More information: [www.co2meter.com](http://www.co2meter.com).



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accommodate growth of most plant material. They can also be removed and reapplied easily if needed during growth.

Stretch Ties are biodegradable, made in the USA and come in multiple colors. They are available in small numbers for home growers or bulk rates for commercial operations.

More information: [www.stretchtie.com](http://www.stretchtie.com).







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# MARI-LAND



Companies from across the U.S. look to cash in on Maryland's long-delayed medical marijuana infrastructure

By PATRICK WAGNER

**A**fter more than three years of delays, Maryland finally granted first-stage approval for 102 dispensary licenses in December 2016, initiating a 12-month countdown for potential licensees to be ready for operation.

If all goes as scheduled — and so far, nothing about Maryland's medical cannabis program has — dispensaries could be serving patients before the end of 2017.

In the past, many business owners from Western states have avoided the East Coast's rigid and expensive medical marijuana programs, but Maryland's patient-friendly regulations have brought a

larger number of cannabis industry veterans into the mix.

Two entrepreneurs lending their expertise to the upstart program are brothers Mike and Rich Kwezell, co-owners of the Colorado-based retail chain Strawberry Fields. The Kwezells were approached by a company in Maryland to partner on a dispensary.

Mike Kwezell says he thinks it was smart for Maryland to establish fairly progressive rules and qualifying conditions in comparison to highly limited programs in New York and New England.

“By creating much broader access to medicine, from an economics standpoint, it's going to let these shops pay their rent and make payroll because they have enough people to prescribe to,” he says.

In August 2016, the state granted first-stage approval for 15 cultivation licenses and 15 processing licenses; seven of those companies were approved for all three license types: Curio Dispensary BC, Doctors Orders Maryland, Holistic Industries, Kind Therapeutics, Maryland Compas-





sionate Care & Wellness, MaryMed and Temescal Wellness of Maryland.

MaryMed is a subsidiary of Vireo Health, LLC, which operates vertically integrated companies within the highly restrictive programs of New York and Minnesota.

“When we look at the regulations in Maryland we think they are sensible, patient-friendly regulations and we think it’s going to be a great market ... also in terms of economic opportunities for license holders,” says Ari Hoffnang, CEO of Vir-



eo Health New York.

And unlike the Vireo Health operations in Minnesota and New York, MaryMed will be able to provide patients with smokable flower.

“I think being subject to very rigorous regulations in Minnesota and New York helped us gain a lot of experience in compliance and in developing expertise in all phases of the supply chain,” Hoffnang says. “I think that we will be able to leverage that experience to serve the patients in Maryland.”



Specifically, Hoffnang says Maryland’s wide array of qualifying conditions and the scope of products allowed are strengths of the program.

Maryland patients will be allowed to possess up to a 30-day supply of cannabis products; dried flower is limited to 120 grams, while infused products are limited to 36 grams. Edibles are prohibited. Maryland will also allow reciprocity for out-of-state medical patients — a noteworthy point considering the number of top hospitals in the region.





Leif Olsen, co-founder of Kind Love in Colorado, says Maryland's liberal approach should allow for more of a retail model as opposed to other states' staunch pharmaceutical models.

"We think the market in Maryland goes with our economic perspective and our humanitarian perspective," Hoffnung says.

"It's definitely a hybrid of what we've seen before on the East Coast, but it's more relaxed like in Colorado," says Leif Olsen, managing partner at Denver-based Good to Great Management, which was hired by one company to help secure a license. Olsen also co-founded Kind Love in Colorado. "I'm from the D.C. Metro area. I was born and raised in the Virginia Commonwealth and Maryland has always seemed to be a little bit more liberal and open, so it's not a surprise to me that they've allowed more opportunities and more of a retail model."

Olsen says the inclusions of qualifying conditions such as "severe, debilitating or chronic pain" will help produce a broader patient base.

"They've created a fair program that is going to allow for a large number of patients, which seems to be the challenge in some markets like Illinois and Florida,"

Olsen says.

However, real estate continues to be one of the industry's biggest barriers. Several businesses requested not to be included in this article due to concerns that landlords would either void the deal or increase the asking price.

"We call that the 'M-factor,'" Kwesell says. "You call a plumber because your toilet is leaking and that's \$100, but if you let them know it's a marijuana facility then the price goes up significantly. So, from a purchasing and negotiating standpoint — and as with anything really — we try to play our cards as tightly as possible."

The reluctance to share details until they have been finalized was shared by numerous Maryland licensees with ties to cannabis businesses outside of the state.

Hoffnung says MaryMed has already secured a cultivation facility in central Maryland and its processing facility is set to open on the state's eastern shore in August; the location of its dispensary arm has yet to be announced.

"We want to make sure that we are in an appropriate location where we are accessible to patients but also welcomed by the community, as we have been in the past and hope we will be in Maryland,"

Unlike Vireo Health in New York, MaryMed is allowed to sell smokable flower to patients and on the wholesale market.





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Making its first steps out of Colorado, Strawberry Fields is set to take the company name and identity to Maryland's medical populace in late 2017.



Chuck Schmitt, head cultivator at Vireo Health, examines flowers at the company's cultivation center in New York.

## IN MARYLAND, FROM AN ECONOMIC PERSPECTIVE, THE REAL OPPORTUNITY IS WHOLESALE

Hoffnung says. “But in Maryland, from an economic perspective, the real opportunity is wholesale. There will be around 100 dispensaries and we hope to be able to offer our products to dispensaries throughout the state. That is something we are looking forward to.”

In addition to finalizing a physical location for the MaryMed dispensary, Hoffnung notes that the overall brand identity of the company has yet to be decided. Its parent company, Vireo Health, puts a heavy emphasis on the medical side of marijuana in its New York dispensaries. Meanwhile, Kwesell says the Maryland version of Strawberry Fields will be “just like we do in Colorado,” which serves both medical patients and recreational users.

Although patients will not have access to medical cannabis until late 2017 or early 2018, Hoffnung believes Maryland’s geographic location could make it one of the most important markets in the country.

“We are intrigued by the fact that Maryland borders Washington, D.C., so we are close to many federal agencies, such as the National Institute of Health, the Food and Drug Administration and others,” he says. “We look forward to establishing working relationships with those federal agencies in some capacity. There are also excellent hospitals and academic institutions. Maryland has a great public university system, such as the University of Maryland, and there are great private universities, such as Johns Hopkins.

“We think that from a human capital perspective and from a talent perspective, Maryland is a great place to build a business.”



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# The Complete Package

California startup  
explodes onto the  
cannabis scene with  
innovative products and  
eye-catching box design

By GREG JAMES





When I first saw the hmbldt product offerings, I was blown away. It's a line of cannabis products that seem to have that special "look" that tells you instantly it's going to be a big success. As with many great products — think Apple, Haagen Dazs, Vitamin Water or Grey Goose Vodka — there's an instant recognition that the packaging is a cut above the competition.

Derek McCarty, hmbldt's head of marketing, was happy to talk about the company's philosophy and its recent explosive growth.

"We launched in September, and in a

little over four months signed up over 130 retailers in California," McCarty says.

He explains that the company took a different approach than most producers in the cannabis space; hmbldt concluded that in an increasingly complex world, consumers often gravitate to products that are less cluttered and confusing.

"We took the health and wellness world to cannabis, and created bespoke packaging that communicates wellness," McCarty says. "We also placed the emphasis on an experience that is predictable, consistent and repeatable."

In other words, hmbldt is a business that wants to take the least desirable as-

pects of the cannabis industry — its unpredictable and sometimes intimidating nature — and make it friendly and approachable. In traditional consumer products, this type of thinking would be called reverse engineering or taking a consumer-centric approach. It's a simple concept, but one that often eludes those in the industry who don't have experience beyond cannabis culture.

In the case of the hmbldt line, reverse engineering meant leaving behind strains and plant phenotypes and creating targeted blends of cannabinoids and terpenes that are designed to deliver specific effects: Sleep, Bliss, Calm and Relief. The idea is





as simple as it is brilliant: For consumers, the effect they're looking for is clearly spelled out on the package. Because hmbldt is engineering the formulas, the source material is carefully controlled. The guess work and worrying about consistency are removed and replaced with the type of predictability you'd expect with a traditional consumer product.

When it comes to sourcing its cannabis, the company works with a small number of local family farms in Humboldt County. Each farm is required to grow in a sustainable manner



Left: Hmbldt branded its packages by color and effect in lieu of using ambiguous strain names. Above: Hmbldt's vaporizer was recently listed as one of Time Magazine's 25 Best Inventions of 2016.





**“WE PLACED  
THE EMPHASIS  
ON AN EXPERIENCE  
THAT IS PREDICTABLE,  
CONSISTENT AND  
REPEATABLE**



and adhere to strict company guidelines.

McCarty is quick to point out the benefits of working with local family farms.

“We know all the suppliers we work with and that ensures a really consistent product line,” he says. “Predictability is something we’re fanatical about, and we know from experience that this industry has not always had a good reputation in that respect.”

Hmbltd is a company that has achieved something elusive in the legal cannabis space — an instantly recognizable product line, a strong “line look,” fabulous packaging and loyal customers. The combination has led to fast growth and a rapidly expanding retail base that bodes well for the prospect of hmbltd becoming one of the first true mainstream brands in cannabis.



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# The CRASH Heard Round the Industry

A person wearing a dark hoodie is seen from the side, looking at a laptop screen. The screen is bright and shows a white background. The person's face is not visible. The background is dark, and the overall mood is mysterious and focused.

Cybersecurity is suddenly at the forefront of the cannabis industry as MJ Freeway customers suffer from the company's shutdown.

By BRIAN BECKLEY  
and SUE VORENBERG



The morning of Jan. 9 dawned like any other for marijuana retail workers in Colorado and around the nation.

But when a manager of one shop near Denver tried to help customers pick out their medical and recreational cannabis like she had since the store opened in 2009, she learned that hackers had taken down the MJ Freeway servers the day before, making it impossible to access the seed-to-sale tracking and point-of-sale systems and preventing her, and others like her at more than 1,000 dispensaries from processing transactions.

"It was chaotic to say the least," said the manager, who did not want to draw negative attention to her shop and spoke to Marijuana Venture on condition of anonymity.

As customers began arriving to buy products, including medical patients in need of their supplies, the store had to turn them away because it was unable to process their requests.

With no way to sell or track products, the dispensary was forced to make a difficult decision.

"We had to close for the weekend," said the manager, adding that the company offered vouchers for free future pre-rolls to customers who found themselves locked out due to the computer failure.

Her story was not an unusual one, as bud-tenders and shop owners from around the country took to social media to announce closures or lengthy delays in the wake of the system's failure as many stores were forced to use old-school methods of paper and pen to track orders.





According to MJ Freeway, the attack corrupted its main and back-up servers, taking them offline for several days and causing the company to update its system and make amends with clients.

Despite the attack's impact on cannabis businesses, MJ Freeway officials say no customer data was released during the hack.

"It was corruption of our files — both the files that can run the system and our data files," said Jeanette Ward, director of data and marketing for MJ Freeway. "We know there was no extraction of data — our data is encrypted — so our customer data was safe. But it was corrupted, and now we're helping to piece it all back together bit by bit."

Police are investigating the incident, but as of mid-February, there were no arrests and officials were still trying to determine exactly how the attack occurred. But they do know it wasn't a standard denial-of-service attack that some hackers use to take a website down, Ward said.

"The attack was sophisticated

and thorough," Ward said. "We had very good security. We had multiple redundant backups in different geographical locations, and we had them with two different companies. But we've added even more security now."

In addition to the business-based software, MJ Freeway also sells a system for states and municipalities called Leaf Data Systems, which last year won the contract for the state of Nevada. The Leaf system, however, was not affected, though according to reports, it was included as part of the initial attack.

Most people wouldn't think about the cannabis industry being a prime target for hackers, but the threats are very real, said Michael Bowers, a software consultant and cybersecurity expert at CAM Business Solutions.

"There's a lot of money involved, and you have an outside black market with people who are losing money and want to take down the infrastructure of legal cannabis," Bowers said. "Then there are competitors who are trying to grab a piece of the market, and they may also have a target on your business. And beyond that, there may be individuals out there who want to take your system down and ransom it, since the industry is so cash heavy."

In the wake of the crisis, MJ Freeway employees worked around the clock trying to salvage pieces of clients' data, officials said. The company hired temporary workers to help customers manage their data until the system could be fixed and brought in tax help for clients, because of the time of year that the problem occurred.





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According to MJ Freeway, no customer data was released during the hack.

MJ Freeway also conducted a security review of its system and moved all hosting solely to Amazon Web Services, which Ward said has a reputation of having the best security features and services available.

"We've added all the security features there, and we no longer let one person work alone on the system," she said. "When somebody is working now, somebody else has to be logged on and watching. We also got rid of generic passcodes. We've taken all these measures to the Nth degree."

Bowers agreed that Amazon Web Services has a great virtual environment for companies, but those using it should be aware that those security features aren't automatic.

"What Amazon doesn't do is consult for you," Bowers said. "They provide the service, but it's up to you to use it."

Some of the security features of the service add 30% to 40% percent to the overall expense, but considering the cost of potential downtime to a business, they're often worth it, Bowers said.

"Amazon's Zerto feature, for instance, allows site replication (a full backup to the cloud)," Bowers said. "You could have a meteor hit the Western hemisphere, and if you have your data duplicated elsewhere like that, you won't lose anything. But it's not cheap, which is why most people won't use it by default. You have to ask yourself what risks you're willing to take."

End users like growers or retail stores can also add their own backup servers on site for extra protection, ensuring they'll have a copy even if their major software providers have issues.

"You can encrypt your own hard drive backup at your facility, and bolt it to the desk to make sure no intruder can get it," Bowers said.

Bowers also said managing employee access and passwords can be a critical area to which most businesses don't give much thought.

"Say you have somebody about to be fired, or you have an employee who gets into identity theft," Bowers said. "One way to protect against that is to make sure employees each have their own login, rather than having everybody use the same account, so you know who did what in the system."

Wireless passwords are another area to keep a close eye on. Most systems will let businesses make individual wireless accounts for each employee, based on their username and password, which makes it easier to see what each employee is doing.

In addition, guest passwords for clients should be firewalled off from the rest of the system, to prevent any potential access to company data, Bowers said.

"These are all things that can minimize downtime, headaches, loss of resources and can create accountability," Bowers said. "And most aren't particularly expensive."

After speaking to her technical team, Ward said MJ Freeway staff members also had some hard-learned advice for others in the industry.

They suggested three main priorities when selecting a software provider: Make

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MJ Freeway also recommended setting employee user permissions only to areas that they need to access for work, keeping a log of employee activity on the system and allowing access to company servers only from authorized devices.

MJ Freeway does all of that now, Ward added.

Despite the disaster, most of MJ Freeway's clients have so far stayed with the company, she said.

"We haven't lost a lot of customers," Ward said. "We have very low churn generally, and our churn for January was actually lower than our regular churn."

While that may be the case, there's no doubt the crash could have a major impact on MJ Freeway's success — and could lead to a rush of new business for dozens of competitors in the traceability space. Not all dispensaries — including the one in Colorado — could wait for MJ Freeway to make repairs. The Colorado

dispensary opted to switch to a competing point-of-sale system to avoid downtime.

"We didn't have the ability to stay closed for a month," the manager said, adding that after switching traceability providers, the retailer reopened the Tuesday after the attack.

But as of early February, the dispensary was still unable to access member information, sales data and customer tracking from the MJ Freeway system.

MJ Freeway was able to get its system back online by Jan. 16 and is crediting all customers for the month of January, but the company is still working on retrieving the data that was corrupted. Some files may be permanently lost.

"It's tough on our clients," Ward acknowledged.

"It doesn't feel good," she said. "All we want to do now is make it right for our customers."

Part two of this series will be published in the April issue of Marijuana Venture, digging deeper into the subjects of traceability providers, hacking and the impact of the MJ Freeway shutdown.

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# Sun shines bright on Puerto Rico's cannabis industry

Territory status provides significant investment  
potential compared to stateside businesses

---

By LAUREN RUDICK

**S**ales of medical cannabis have begun in Puerto Rico, and businesses and investors may expect to receive the highest rate of return among all cannabis markets in the United States.

In early January, nearly two years after outgoing Governor Alejandro Padilla legalized medical cannabis by executive order, 23 businesses have obtained licenses to grow, process, transport and sell medical cannabis and three dispensaries have opened for business in the cities of Barceloneta, San Juan and Toa Baja.

Licenses will be rewarded on a rolling basis until the commonwealth determines patient needs have been met. Reportedly, more than 250,000 patients will qualify for medical cannabis.

Since the program was initially enacted under Regulation 155 in 2015, it's undergone considerable changes. Regulation 155 established a maximum of 1,500 plants for seed-to-sale; precluded people who were previously accused or convicted of a crime involving drugs from applying to be — or even working for — a licensee; mandated Puerto Rico residency for applicants; required applicants to post a surety bond; and subjected licensees to permanent, burdensome product-tracking requirements, among other regulations.

Last summer, Regulation 155 was repealed in favor of Regulation 8766, which, among other things, removed the cap on plant limits in favor of licensing based on square footage; eliminated prohibitions against applicants with drug convictions





A look inside PRICH Biotech's 420,000-square-foot grow facility in eastern Puerto Rico.

and allows their participation five years after having served a full sentence (and entirely removed bans against those merely accused of drug crimes); introduced the “primary resident” concept that requires residents to maintain a controlling stake, but allows foreign investors to participate; removed the surety bond requirement and instead required applicants to show the financial capacity for 12 months of continued operations; and required licensees to maintain a less onerous temporary tracking system.

Puerto Rico has adopted different aspects of licensing schemes that have worked in the states. Similar to New York and Pennsylvania, Puerto Rico’s medical products will not include flower and are limited to topicals, pills, transdermal patches, oils and oral drops. Like Nevada, Puerto Rico will offer reciprocity by honoring the home state medical cannabis identification cards of tourists.

Puerto Rico also requires strict laboratory testing and employs a variety of license types depending on canopy size.

Investment activity in Puerto Rico has been robust — and for good reason. Puerto Rico is a territory of the U.S., not a “state.” Thus, federal taxes do not apply to income received or generated by individuals and businesses operating there. Puerto Rican

corporations are treated as “foreign corporations” for federal tax purposes. For medical cannabis businesses, this means that IRC Section 280E does not apply. In other words, while cannabis businesses in the states grapple with the inability to deduct ordinary business expenses, create separate companies for non-plant touching components of their businesses and pay nearly 70% in taxes, medical cannabis businesses in Puerto Rico businesses will pay zero federal taxes.

Sweeter still, in 2008 the government

passed the Economic Incentives Act for the Development of Puerto Rico, a series of additional tax incentives designed to bolster profitability for Puerto Rican businesses. These incentives include significant credits on local hiring, research and development, manufacturing and recycling; favorable tax rates on industrial development income (4%) or on income for pioneer or novelty products manufactured in the commonwealth (0-1%); special deductions for acquisition and installation of machinery and equipment; cash

Tourism currently dominates the Puerto Rican economy, but investors are looking at cannabis operations as the next big boost for the island.





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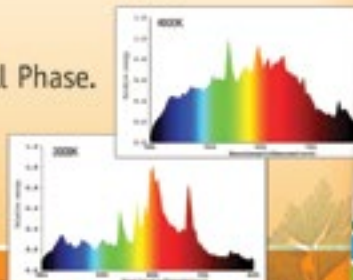
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San Juan

There are currently three dispensaries open in Puerto Rico, with more on the way.

Toa Baja

incentives and/or refunds associated with job creation, retention and training; reimbursements associated with quality control and certification initiatives; additional incentives for projects of “strategic importance” to Puerto Rico (such as providing high quality jobs, technological know-how or new technology); and incentives to offset costs associated with solar energy.

Prominent brands operating in other states have been quick to cash in on these incentives. Both Colorado’s Julian Marley Juju Royal Brand and Ottawa’s CannaRoyalty Corp. entered into respective licensing deals with Natural Ventures PR, LLC, which operates a 100,000-square-foot cultivation facility and a 30,000-square-foot manufacturing facility in San Juan.

Accepting a government proposal, Natural Ventures further committed to hiring single mothers first, followed by military veterans, then the commonwealth’s general population. Reportedly, Natural Ventures’ deal with CannaRoyalty provides a 2.5% royalty on the company’s net profits and a 10% referral royalty on revenue generated by

CannaRoyalty branded products over 10 years.

As licenses are awarded in Puerto Rico, the need for education and unity among participants is paramount. Francis Aparicio, co-founder of Regenerative Group, LLC and the youngest member of the Puerto Rico Cannabis Industry Association’s board of directors, seeks to unite licensees and ancillary businesses to launch a variety of educational platforms, simplify the licensing and reciprocity processes, loosen advertising and marketing restrictions, and lobby in Puerto Rico’s Congress and Senate. Also, San Juan’s popular smoke shop Monticello has been transformed by its owner, Gaby Pagan, into a cannabis information center. Provided with a “safe” and “judgment-free” space to learn, customers of all ages leave Monticello with an education on modern

tools, resources, and compliant consumption methods. Ms. Pagan has also founded Growth Leaders, a service group with representation in San Juan, Los Angeles and Miami, whose mission is to connect Puerto Rican entrepreneurs with potential business partners and build a network of local creative talent.

With sales beginning barely six months since regulations were adopted, Puerto Rico’s medical cannabis program has been among the fastest to market and stands to provide medical cannabis businesses with the fastest path to profit.

*Lauren Rudick represents investors and startup organizations in all aspects of business and intellectual property law, specializing in cannabis, media and technology. Her law firm, Hiller, PC ([www.hillercp.com](http://www.hillercp.com)), is a white-shoe boutique firm.*

Toa Baja, Puerto Rico



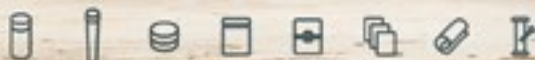
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# Qualifying Conditions and the Business of Medical Marijuana

An in-depth look at how qualifying conditions allowed by each state's medical programs impact the number of patients and the valuation of medical cannabis businesses

**C**annabiz Media has found many commonalities and differences in the states that have approved medical marijuana through its analysis of qualifying medical conditions. Once a ballot measure is approved or a governor signs a bill making medical marijuana legal in a state, the real work begins to craft and refine the qualifying conditions and regulations that define the medical marijuana economy within that state.

These regulations significantly affect cultivation, production, dispensary and other supply-chain license valuations.

## OVERVIEW

In total, 57 qualifying medical conditions have been approved for marijuana treatment across the 26 states tracked by Cannabiz Media, plus the District of Columbia, where patients can legally purchase, grow and/or use medical mar-

ijuana. These conditions cover diseases and symptoms as well as complications the illnesses and/or their treatments caused. For example, patients in most of these states may be treated with medical marijuana for diseases such as cancer and HIV/AIDS as well as for symptoms of chronic pain and/or side effects of treatment such as nausea.

On average, 0.86% of the populations in these medical marijuana-approved states are accessing, or registered to access, medical marijuana to treat their conditions. The estimated use of medical marijuana, based upon registration data and the number of recommendations issued by medical doctors, ranges from nearly 2% in states such as California, Colorado, Oregon and Washington to lower than 0.1% in states such as Delaware, Illinois, Minnesota, New Hampshire, New Jersey and New York.



# A snapshot of the Cannabiz Media Licensing Reference Guide

The team at Cannabiz Media has compiled and maintains the most comprehensive database for U.S. marijuana licensing information, with up-to-date data on more than 12,000 licensees.

Using what it learned during the research, the company recently released the Marijuana Licensing Reference Guide 2017 Edition with the goal of helping those in the marijuana economy gain a greater understanding of the factors that could affect license value, including the conditions for which medical marijuana has been approved in the states that have legalized its use.

This excerpt is from Chapter 3 of The Marijuana Licensing Reference Guide and focuses on the different conditions approved by each medical marijuana state. However, in the volatile cannabis regulatory environment, some of the rules have already changed since the guide went to print.

Several states have expanded their list of approved medical conditions while others legalized recreational use:

- With the addition of Florida, Minnesota and Montana, 18 states now approve medical marijuana for PTSD ;
- New Jersey has approved an additional condition, Nail Patella Syndrome; and
- Four additional states legalized recreational use this past November: California, Nevada, Maine and Massachusetts.

Cannabiz Media plans to update the Cannabiz Media Database of Marijuana Licenses as well as The Marijuana Licensing Reference Guide as more information becomes available.

**Ed Keating**  
**Cannabis Media**  
**Vice President Government Affairs**

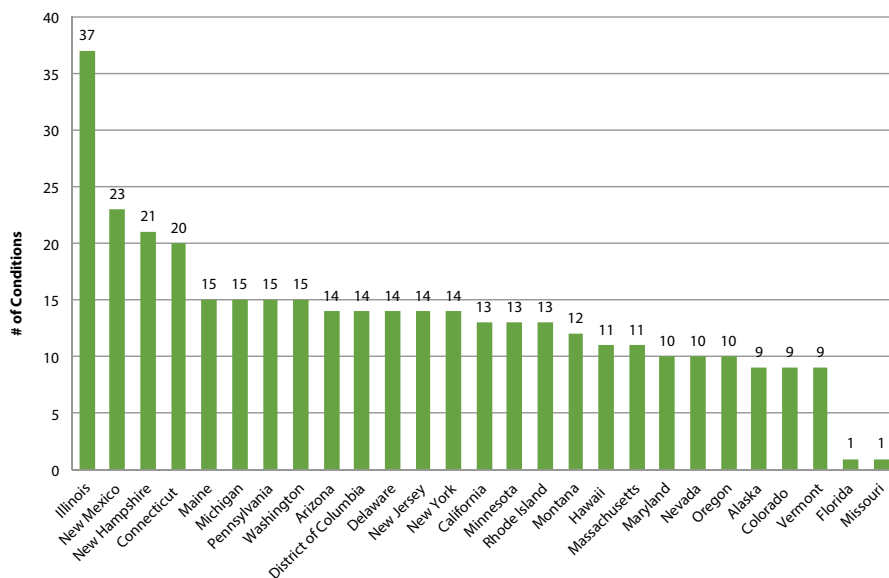


Exhibit 1: A state-by-state look at how many qualifying conditions are allowed.

Not all states require registration in order for patients to legally purchase and/or use medical marijuana.

Usage estimates are sometimes derived from voluntary reports by medical professionals on the number of patients for which recommendations have been provided or on other data available.

Based on Cannabiz Media's research data, the quantity and quality of qualifying medical conditions play a significant role in the value of a medical marijuana license for cultivation, production, and/or dispensing as discussed in these key observations:

- Fifty-seven qualifying conditions (including any condition for which a medical doctor expects to have improved outcomes with marijuana treatment, as permitted in five states) have been approved for marijuana treatment across the 26 states and the District of Columbia tracked by Cannabiz Media where patients can legally use medical marijuana.

- Four qualifying conditions account for a vast majority of the medical marijuana recommendations being made: chronic pain, muscle spasticity, spinal cord injuries and post-traumatic stress disorder (PTSD). These four conditions may, by their inclusion or exclusion, directly affect the value of cultivation, production and dispensary licenses within a state.

- Of these four key qualifying conditions, the majority of patients across the country (59%) receive medical marijuana authorizations for chronic pain.

## QUALIFYING CONDITIONS

In total, 57 qualifying conditions have been approved for marijuana treatment across the 26 states and the District of Columbia tracked by Cannabiz Media where patients can legally access medical marijuana.

Nationwide, there is a wide range in the scope of approved conditions. Illinois qualifies the greatest number of conditions, at 37, while Alaska, Colorado and Vermont approve only nine and Florida and Missouri approve only one (epilepsy). On average, most states cover 12 to 15 conditions. In some states, the process for getting an additional condition approved is relatively easy — as easy as sending a request to the program administration. In Connecticut, for example, any person can submit a petition, though there is no guarantee of approval. In other states, the task of getting additional conditions approved is onerous and requires various panels to research and forward requests until they make their way through the state legislature and onto the governor's desk. Some states, such as New Jersey, are just now putting their new condition approval processes in place.

One might think that a larger number of qualifying conditions would encourage a larger number of medical marijuana patients, registrants and/or doctor recommendations and thus a larger consumer market. However, Cannabiz Media found that a number of variables in addition to the number of conditions approved will impact the total number of medical marijuana patients in a state, as well as the



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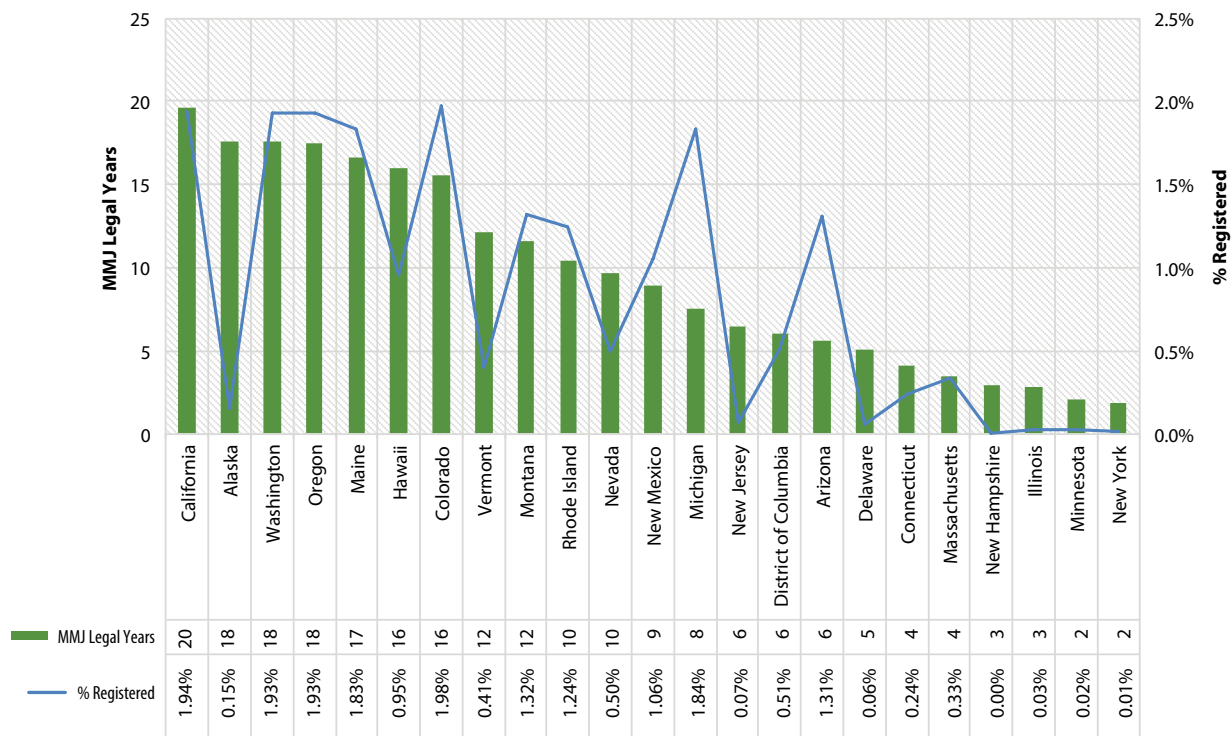


Exhibit 2: Medical marijuana patients as a percentage of population and length of time that medical marijuana has been legal in each state. **Note:** The graph only shows states that have active dispensaries and/or self-cultivation programs.

potential sales and profitability of a cultivator, producer or dispensary license.

Along with the quantity of conditions approved, a license valuation must also account for:

- Maturity of the cultivator, producer, dispensary license program;
- Which specific conditions the state has approved;
- Relative likelihood that additional specific conditions will be approved; and
- How many approved medical professionals are writing recommendations for medical marijuana to their patients.

This list does not include all variables to be considered in the valuation of a license. It is merely a list of some of the variables that are most closely associated with the impact that the quantity and quality of qualifying medical conditions can have on the value of cannabis business licenses within a particular state.

If only the quantity of approved conditions were taken into account, Illinois, which covers 37 conditions (far more than any other state), should have the highest number of medical marijuana patients. This, however, is not the case.

Exhibit 2 shows the number of condi-

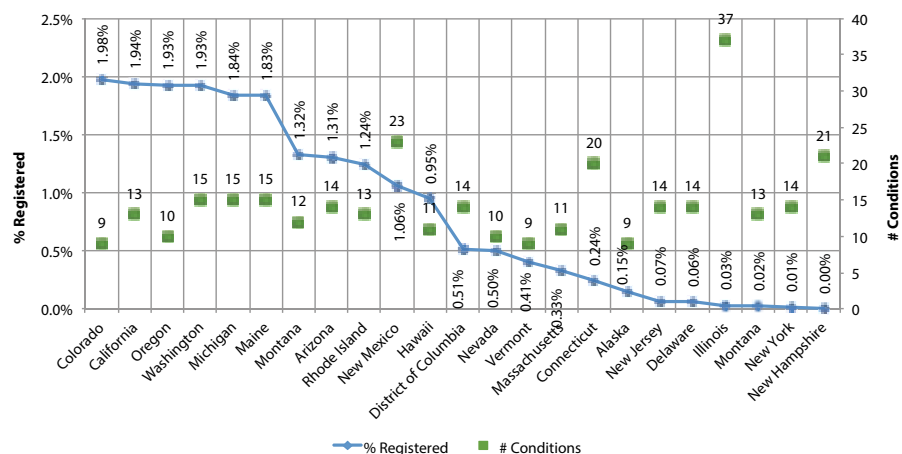


Exhibit 3: Correlation between the number of conditions and the percentage of state population that is registered as medical marijuana patients.

tions covered by each state compared to the number of medical marijuana patients in each state (as a percentage of each state's total population) and the duration of the medical marijuana dispensary program.

Despite covering 37 conditions, just 0.03% of Illinois residents are registered medical marijuana patients. Conversely, only nine conditions are approved in

Colorado for medical use, but 1.98% of the state's population are medical marijuana registrants.

Part of the explanation, of course, is that Illinois has a relatively young medical marijuana program. Its first dispensary didn't open until November 2015, while medical programs in other states started being implemented in 1996.

Most states cover 12 to 15 conditions.

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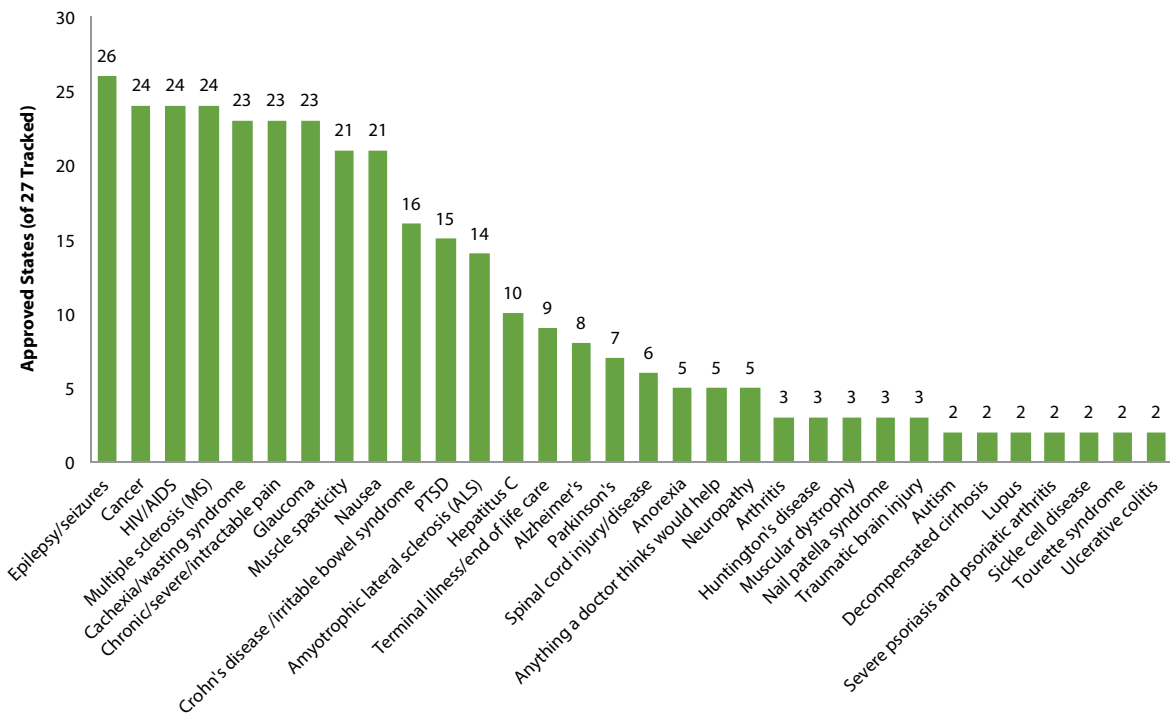


Exhibit 4: The number of states that cover each qualifying condition.

Outliers such as Illinois (on the high side) and Vermont (on the low side) exist, but the number of medical marijuana registrants does not increase or decrease proportionately with the number of conditions covered by these outlier states.

#### TOP FOUR CONDITIONS

Chronic pain, muscle spasticity, spinal cord injuries and PTSD account for a vast majority of the medical marijuana recommendations being made. These four conditions may, by their inclusion or exclusion, directly affect the value of cannabis business licenses within a state. Across the states where medical marijuana is legal, 57 conditions could qualify patients for medical marijuana recommendations. Exhibit 4 provides the details of states that cover each qualifying condition.

It would appear that conditions covered in more states would generate a higher number of registrants for those conditions. However, that's not the case. Exhibit 5 shows the percentage of medical marijuana registrants across the country for each condition (of those states that report the data).

Despite the fact that cancer, multiple sclerosis, epilepsy/seizure conditions and HIV/AIDS are the most widely approved conditions among all of the states, each

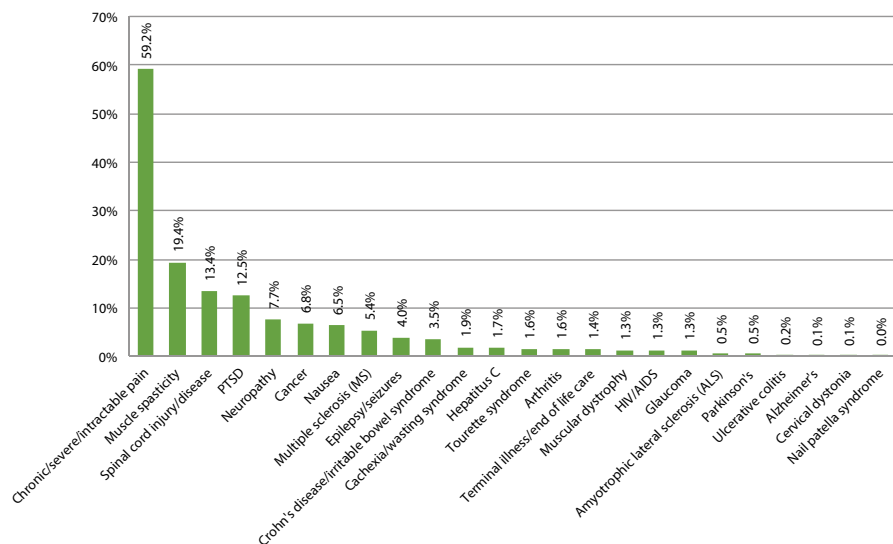


Exhibit 5: Percentage of patients citing each qualifying condition. Note: Totals exceed 100% as some patients have been certified for multiple conditions.

covered in at least 24 states, none are the most common conditions for which people get medical marijuana approvals. In fact, none of them are even in the top five. Instead, they rank sixth, eighth, ninth and 17th, respectively.

Comparing the number of conditions covered to the number of medical marijuana registrants by condition in Exhibit 6 shows that four approved qualifying

conditions account for the most medical marijuana patients across the country.

As Exhibit 6 shows on the following page, 59.2% of all medical marijuana registrants across the country received their medical marijuana recommendations to treat chronic, severe or intractable pain (approved in 23 states). Another 19.4% of medical marijuana patients are registered for muscle spasticity (21 states)



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and 13.4% are registered for spinal cord injury or disease (six states). Rounding out the top four conditions is PTSD (15 states), with 12.5% of registrants. In other words, one condition accounts for the vast majority of all patients and four conditions account for nearly all applicants. The other conditions make up a very small fraction of all medical marijuana registrants across the country.

Based on the data, it's clear that states that don't cover chronic pain could be limiting the size of the market and the value of marijuana licenses in those states.

It's important to note that just because a state has approved certain conditions doesn't mean patients are actually getting recommendations for those conditions. Consumer demand might be prevalent, but doctors are the gating factor in all states where recreational marijuana is illegal. Many doctors are, for numerous reasons, reluctant to recommend medical marijuana for their patients. Not least among these reasons is that marijuana, in any form, is still a Schedule 1 controlled substance in the eyes of the United States government.

In five of the states Cannabiz Media tracked in this report, one of the approved

conditions is, to paraphrase, any condition for which the doctor believes medical marijuana would be beneficial to the patient. These states are: California, Maryland, Massachusetts, New Hampshire and

## “ONE CONDITION ACCOUNTS FOR THE VAST MAJORITY OF ALL PATIENTS

Washington, D.C. Despite this latitude, most doctors appear unwilling to go off of the list of specific approved conditions.

In many states, some doctors appear to limit the number of medical marijuana recommendations they will make for fear of being labelled a “pot doctor” and meriting additional attention from state, fed-

eral and medical board authorities. The possibility of losing their license (or their malpractice insurance) is often a compelling argument against fully embracing the potential medicinal value of cannabis for their patients.

Only Alaska, Colorado, Washington, Oregon and Washington, D.C., have legalized marijuana for recreational use (California, Nevada, Maine and Massachusetts have legalized recreational marijuana, but the rules have yet to be fully implemented following the 2016 election). If doctors or regulations prevent people from accessing medical marijuana, then dispensary sales will be negatively impacted, as will the value of licenses in that state.

Doctors do not write prescriptions for medical marijuana in any states; instead, most states have doctors write a medical recommendation or a certification for medical marijuana treatment. Nevertheless, patients may find many doctors unwilling to provide such documentation until the federal government changes the classification of marijuana.

For example, Connecticut is one of only two states that have approved all of the top



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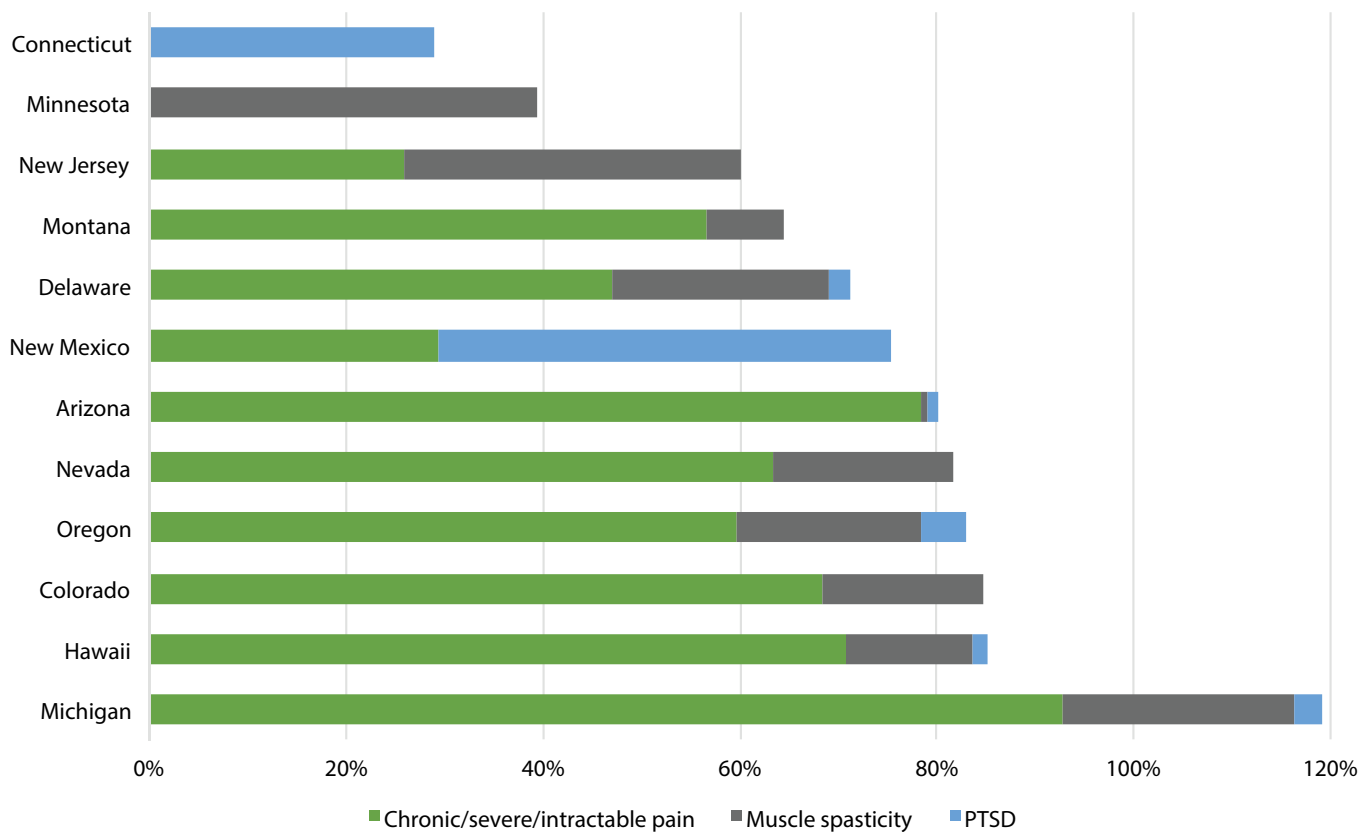


Exhibit 6: Three noteworthy qualifying conditions across 12 states with medical marijuana.

four qualifying conditions, but only 0.24% of the state's population is certified to receive medical marijuana. New Mexico is the other state that has approved all of the top conditions and 1.05% of its population is accessing medical marijuana. Factors contributing to the difference are likely to be that Connecticut's medical marijuana program was made legal in May 2012, while New Mexico legalized medical marijuana in July 2007. Further, Connecticut only recently added chronic pain as an approved condition.

Over time, we may see that the longer a medical marijuana program is in place, the more willing doctors are to provide recommendations to their patients. And, as in Connecticut, the longer a program is in place, the more likely skeptical legislatures and governors will add additional conditions.

It is important to note that even states that have legalized recreational marijuana often continue to maintain medical marijuana programs (sometimes providing patients with exemptions from sales tax, the ability to possess or purchase more cannabis than a recreational user, etc.). In some of these states, the num-

ber of patients registered in the medical marijuana program will decline simply because there are alternative venues for procurement available. For example, the number of estimated registered patients in Alaska decreased from 1,857 in October 2014 to 1,132 in March 2016, likely as a result of the legalization of recreational marijuana in the state in November 2014.

Therefore, the data should not be analyzed in isolation. Many other factors other than the breadth and width of approved medical conditions affect the value of a medical marijuana license.

#### CHRONIC PAIN

The majority of registrants across the country received medical marijuana recommendations for chronic pain. However, the value of a license is not completely linked to whether or not a state has approved medical marijuana for that condition.

Upon first glance at the data, it would appear that states must approve chronic pain in order for marijuana licenses within those states to be highly valuable. However, a closer look reveals that license value isn't all about chronic pain. Exhibit 6 shows the breakdown of registrations for

several conditions within those 12 states that report this information.

As discussed previously, chronic, severe and intractable pain is the most common condition for which registrants receive medical marijuana certifications, followed by muscle spasticity, spinal cord injury/disease and PTSD, respectively.

In Arizona, almost 79% of all patients are certified for chronic pain. In Michigan, that number reaches almost 93%. In several other states, however, where chronic pain is an approved condition, far fewer patients receive certifications for it. Both Minnesota and New Jersey are examples, where chronic pain accounts for 0.0% and 25.8% of registered patients, respectively. Instead, more people in both of these states receive medical marijuana certifications for muscle spasticity, which accounts for 39.3% and 34.4% of patient registrations.

In both cases, a large percentage of the consumer population (based on registration penetration levels from other states) isn't being served.

Considering that only 0.02% of the Minnesota population and 0.07% of the New Jersey population are registered to

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obtain medical marijuana, it's interesting to consider how actually providing certifications for chronic pain would positively affect the number of registrants in both states. However, both markets are relatively new (Minnesota legalized medical marijuana in May 2014 and New Jersey did so in January 2010, but didn't open its first dispensary until December 2012) and it is possible that doctor and patient familiarity and comfort with medical marijuana in general, and its use for chronic pain and other conditions, will increase overall usage.

In New Mexico, most registrants receive certifications for PTSD (45.9%) despite the fact that chronic pain (29.3%) is an approved condition in the state. While New Mexico does have 1.06% of its population registered to receive medical marijuana, the market could be much larger if the number of people certified for chronic pain increased.

### CONCLUSIONS

Looking at the available data related to approved qualifying conditions, states that are likely to have more valuable marijuana licenses are those that cover the top four conditions (or at least one of them), have large populations that increase the market size, and have greater than the average penetration rate of 0.85%, which shows traction and room for growth.

However, the value of medical marijuana licenses may decrease over time in states that have legalized recreational cannabis.

## VALUATION CONSIDERATIONS


1 Age of population in a given state and a propensity of that population to suffer from approved conditions.

2 Length of time legislation and registration/dispensary programs have been up and running in a state.

3 Propensity of a state to approve additional medical conditions (such as chronic pain, PTSD, insomnia, depression, anxiety, opioid addiction, etc.).

4 If the federal government legalizes medical marijuana, will doctors then begin prescribing it rather than recommending it or certifying a patient for its use? And if so, will pharmacies begin carrying medical marijuana products? Will health insurance companies then be required to cover medical marijuana as a prescription drug? Currently, no state requires health insurance companies to cover the cost of medical marijuana.

5 What impact will recreational marijuana have on medical marijuana?



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# LEGAL OUTLAWS

By embracing both indoor and outdoor production techniques, Scott Edson gains a unique perspective on their pros and cons

Story by GREG JAMES | Photos by GARY DELP

**S**cott Edson likes the outlaw image and he's unafraid to state the obvious.

"In a way, we're all outlaws in the marijuana business," he says with a wry smile.

Edson learned his skills in the medical marijuana industry, having grown cannabis since the mid-1990s. His early forays into marijuana cultivation taught him that a successful business is based on a number of factors, including tight control over quality, good employees and a loyal reseller base.

To Edson, taking that same focus to the legal, recreational business was a no-brainer and when the opportunity came to expand from the quasi-legal medical market to the state-licensed recreational market, he went all-in and founded Outlaw Cannabis Company.

## LOCATION

The first order of business for most marijuana cultivators is securing a good location. For Edson, it was no different. After nosing around central Washington, he found an old fruit warehouse in the sleepy town of Monitor.

Located just off Highway 97 and next to the Wenatchee River, Monitor can be described as a "blink town." – if you blink as you drive by, you're bound to miss it. With a population barely over 300, Edson liked the laid-back style of the local residents and their open attitude toward new businesses. Its location next to the highway was another big plus, making it a relatively short drive to the larger markets in Seattle, Wenatchee and Yakima.

Once his location was secured, Edson

Scott and Naomi Edson pose for a photo in Outlaw Cannabis's indoor grow facility, located in the tiny town of Monitor, Washington.





negotiated the often arduous licensing process.

“Yes, it was a hassle,” the entrepreneur says. “But in the end, and with the assistance of an attorney, the system worked and we managed to get through it relatively unscathed.”

#### **INDOOR/OUTDOOR**

Outlaw Cannabis Company operates differently than most commercial mar-

ijuana companies in that the business is equally divided between indoor and outdoor cannabis production.

Unlike most growers who stake their claim with one style, Edson is convinced that doing both has big advantages.

“We can have the best of both worlds doing indoor and outdoor,” he says. “We’re producing for two different markets and at two different price points. Our indoor production is created as a top-shelf

product, and our outdoor is marketed at a lower price point and targeted toward the budget-conscious consumer.”

As any farmer knows, weather can wreak havoc on the best-laid plans and cannabis is not immune to Mother Nature.

In Edson’s words, the price of marijuana is controlled by two things, weather and the police; “Without the police as a factor, weather becomes a big concern,” he says.

Washington’s fall weather in 2016 was





The Outlaw Cannabis team of Bob Dixon, Paul Bibbee and Scott Edson have discovered that their outdoor plants typically have higher THC levels than their indoor plants.

## THERE IS A CONSISTENCY & PREDICTABILITY TO INDOOR THAT YOU CAN TAKE TO THE BANK

The indoor facility has plants arranged in neat rows that appear as solid hedges. Rather than spacing a smaller number of large plants, the grow technique focuses on creating the maximum yield from each square foot. The result is a lot of small- to medium-sized plants packed closely together that effectively grow into one solid wall of bud. It's a very impressive sight, and at first glance, resembles a well-manicured laurel hedge that might be found in the back garden of an expensive suburban home. With a mass of healthy colas exploding from the top of the hedge, the technique likely achieves the goal of maximum production per square foot, something Edson has spent many years perfecting.

### POTENCY

Running a facility that produces both indoor and outdoor cannabis has enabled Edson to make observations that might otherwise be hard for a traditional, one-style grower. For example, according to Edson, outdoor bud produced under natural sunlight will usually produce flower with higher THC levels than indoor.

"We grew Snow Dizzle outdoors under natural sunlight and indoor under HPS this past year, and the outdoor had 25% THC on average, while the indoor was usually around 20%," Edson says. "Furthermore, our sun-grown Black Jack tested at 35%, which turned out to be our highest strength flower this year."

To Edson, most of the wholesale/retail pricing difference between indoor and outdoor flower comes down to appearance.

"Obviously indoor has a more uniform look and is grown in a manner that tends to produce predictable results," he says.

far cooler and cloudier than the previous two years, driving down the state's total production of outdoor cannabis.

But for Outlaw Cannabis, with its 50/50 mix of indoor and outdoor, the bad weather barely impacted its yield. Edson sold both his indoor and early-flowering outdoor crop for strong prices.

In Edson's opinion, even with higher production costs, flower produced indoors results in a higher return on invest-

ment than sun-grown cannabis.

"It might cost more to produce, but there is a consistency and predictability to indoor that you can take to the bank," Edson says.

Anyone who has toured modern grow facilities knows that one thing they all have in common is that they have very little in common. Outlaw Cannabis Company, as an outlier with both indoor and outdoor crops, is also a great study in cultivation styles.





Clockwise from top: Naomi Edson trims an Outlaw-grown flower; Paul Bibbee works in the company's lab; and Scott Edson displays some of the company's top-shelf product; an aerial photo of Outlaw Cannabis Company, where the outdoor crop grows on the roof of the warehouse and near the parking lot (courtesy of Outlaw Cannabis Company).

"Outdoor is less easy to control and subject to events like bad weather. However, based on our results, I'd have to say that on average, if you have two of the same strain, and grow one under artificial light and the other under the sun, the one grown under natural sunlight will end up with higher THC levels."

#### RETAIL SALES

For the time being, Outlaw Cannabis Company plans to stick with a highly focused sales strategy that centers on doing more business with fewer retail partners.

"We'd rather do a lot of business with a few good select partners than try to spread out all over and dilute our product line," Edson says.

In 2016, Outlaw Cannabis grew many tried-and-proven strains, including Orange Kush, Blue Dream, Dutch Treat, Banana Kush, Tangerine, Girl Scout Cookies, Sour Diesel, Blood Diamond, Black Jack, Juicy Fruit and dozens of others.

With about a dozen loyal retailers, Out-

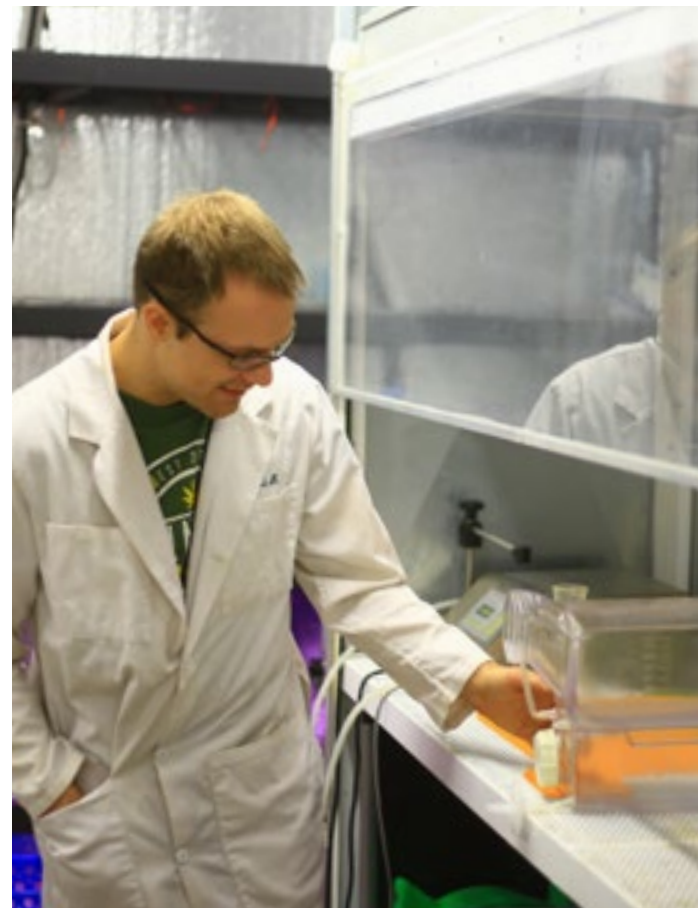
law Cannabis Company has managed to create a model that works for both sides of the retail equation; Edson has a reliable and manageable number of retail partners who get a predictable supplier who values their business and performs accordingly.

#### FUTURE PLANS

For now, Outlaw Cannabis Company has a business model that is working well. Keeping the operation manageable and focusing on producing both indoor and outdoor flower in one central location has been a formula for success.

With a small and dedicated staff, reliable retail partners and cultivation methods that emphasize productivity and economy, Scott Edson has managed to create and expand a profitable business. His future plans call for more of the same, and while he anticipates growth, it will only occur when the time is right and at his pace.

"Growth without a good plan can be a fatal mistake," Edson says, "and we're not about to screw up this well-oiled machine."







Washington's top two retail stores join forces to offer a blockbuster investment deal, but is the eight-figure price tag worth the money?

By BRIAN BECKLEY

**W**hen the news broke in mid-January that Washington's top two revenue generators in the retail marijuana market were looking to sell their stores, it sent ripples of surprise through the state's cannabis industry.

But to some, the bigger shock was the asking price for the six shops and licenses: \$50 million.

Since the market opened in 2014, no two stores have produced more revenue than Ramsey Hamide's Main Street Marijuana in Vancouver and Ian Eisenberg's Uncle Ike's Pot Shop in Seattle. Together, by the end of January 2017, the two flagship stores had generated a total of more than \$67 million in sales.

But is that enough to justify the asking price of \$50 million?

#### THE BIG TICKET

Eisenberg and Hamide are friends who get together from time to time to talk business. Over dinner one evening, the two marijuana moguls began discussing the value of their shops. Both had been approached in the past about selling their businesses and are willing to listen to offers.

"Everything's for sale at the right price," Eisenberg said.

Recognizing that together, their businesses represent a massive chunk of Wash-

ington state's recreational cannabis market, it made sense to join forces. Uncle Ike's and Main Street are the top-grossing marijuana retail stores in the two largest markets in the Pacific Northwest — the Seattle metropolitan area has nearly 4 million residents, while the greater Portland region has more than 2 million.

"We just kind of both kicked the can around to try and come up with a valuation of our businesses," Hamide said.

The final asking price of \$50 million includes six stores and licenses, all intellectual property associated with the Main Street and Uncle Ike's brands and all customer data.

"We both built pretty good brands," agreed Eisenberg.

Because Eisenberg owns the Union Street property on which his primary store is located, he would retain ownership of the property, but lease it to the buyer.

# ILLION

## QUESTION

Both said they felt the eight-figure price tag was not only fair, but actually a value for a buyer looking to get into the marijuana game in Washington, considering that the amount of revenue generated through the stores easily surpasses the asking price.

“This is about as cheap of a valuation as you’re going to get,” Hamide said.

According to Hamide, the price-earnings ratio, or P/E, is about five times the asking price, adding to the overall value of the sale. Because of that, the pair is only listening to “really legitimate inquires” but are still generating what Hamide called a “tremendous amount of interest.”

Main Street Marijuana’s flagship location has generated more revenue than any retailer in the state, earning about \$35.7 million in total cannabis sales since becoming one of the first eight stores to open in Washington’s rec market. Hamide’s store regularly finishes at the top of monthly revenue lists as well, earning \$1.3 million in January 2017 — about \$200,000 more than the number two retailer, Clear Choice Cannabis in Tacoma.

According to Top Shelf Data, Main Street’s December year-over-year sales were up 6.9%.

The numbers at Hamide’s other two

stores are not as impressive, though neither has been open nearly as long as the main shop. The second Main Street Marijuana in Vancouver generated \$531,931 in sales in January for a running total of nearly \$3.9

million since opening. The third store, located in Longview, collected \$299,113 in revenue in January for a total of \$2.3 million.

Meanwhile, Uncle Ike’s primary store



A CCTV shot from inside Main Street Marijuana on a typical summer Saturday.





Uncle Ike's, on the corner of 23rd Avenue and East Union Street, could be described as Seattle's biggest marijuana landmark.

has earned more than \$31 million in revenue since it opened and is also routinely among the top revenue generators each month, finishing third in January with \$818,570 in sales.

According to Top Shelf Data, Uncle Ike's December revenue number was down 30.5% year over year, presumably due to increased competition, as well as street construction that Eisenberg said has had a short-term impact on business.

Eisenberg has two other Seattle stores — Capitol Hill and White Center — that have made about \$1.5 million combined since opening in the fall of 2016.

Hamide and Eisenberg both expect the businesses to continue growing in 2017, with Eisenberg projecting a 25% growth in revenue this year and Hamide aiming higher at more than 30%.

#### **BUT IS IT WORTH THE MONEY?**

Ron Seigneur, a managing partner at Seigneur Gustafson LLP, a CPA firm in Denver that works in the cannabis space, said the overall valuation of these busi-

## **THERE ARE SO MANY PEOPLE WHO WANT TO BE IN THIS BUSINESS**

nesses depends on the landscape in the state's regulatory and license environment, as well as how big and profitable they are.

Traditional valuations aside, investors have been throwing "silly money" at marijuana-related companies, Seigneur said.

While \$50 million may seem like a lot, it may actually end up being a value to gain "more than a foothold" in an urban market like Seattle, particularly given the top-line revenues the businesses are generating.

"From a valuation perspective, it defies logic," Seigneur said of the asking price.

"But there are so many people who want to be in this business."

Dani Espinda of Rhodes & Associates, PLLC, a CPA firm based outside Seattle, says she has a handful of clients also looking to get out of the business who are offering their licenses and properties for sale.

Espinda says valuations for cannabis businesses are particularly difficult because there is no history in the industry from which to draw.

"All the normal counters we use to value businesses aren't there," she says. "It's such a new industry."

Espinda says in her experience, the prices of marijuana businesses rely heavily on supply and demand, with sellers setting prices they think the market will bear, usually with coaching from attorneys. She said she does not advise clients on prices and does not do valuations on their businesses.

Seigneur likened the burgeoning marijuana market to a similar run on California vineyards in previous years, when investors were trying to find the next big thing and bought up grape-growing land just to



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get into the business.

Throw in a brand like Uncle Ike's, which he said he knew even in Colorado, with an “iconic presence and a great location” and investors may be willing to pull the trigger on the sale. Seigneur said he views the value of these businesses from an investment perspective instead of a “fair market value,” since the industry is still growing in leaps and bounds.

Without knowing specific details of each store, Seigneur said a \$50 million asking price is “not unreasonable” and could wind up being an excellent investment based on the two main stores’ \$67 million in sales.

However, the Trump Administration represents an “amazing wild card” for anyone considering a major investment in the marijuana business.

While President Obama allowed individual states to proceed with marijuana legalization, President Trump's selection of staunch prohibitionist Jeff Sessions as attorney general has cast an uneasy light over the fastest growing industry in America.

“Who knows what the future holds?” Seigneur asked.

Hamide and Eisenberg said the new administration did not influence their decision at all and they both believe in the future of the cannabis industry. Neither is particularly eager to get out of the business, but see opportunities to sell while the market is hot.

They're also looking at new possibilities within the industry.

Hamide, for example, said he is looking at national opportunities with a particular interest in tribal cannabis. He is working with the Paiute tribe outside Las Vegas on a new 20,000-square-foot retail store. Having created about 100 jobs with Main Street Marijuana in Washington, he's setting his sights on an even bigger impact, particularly among Native American populations.

“I want to create 100,000 jobs nationwide,” he said.

Eisenberg said he is concerned that rule changes being considered in Olympia would open Washington to out-of-state money that could change the marketplace from one of smaller, mom-and-pop operations to larger, corporate entities — a change he sees as ending “a part of the system I like.”

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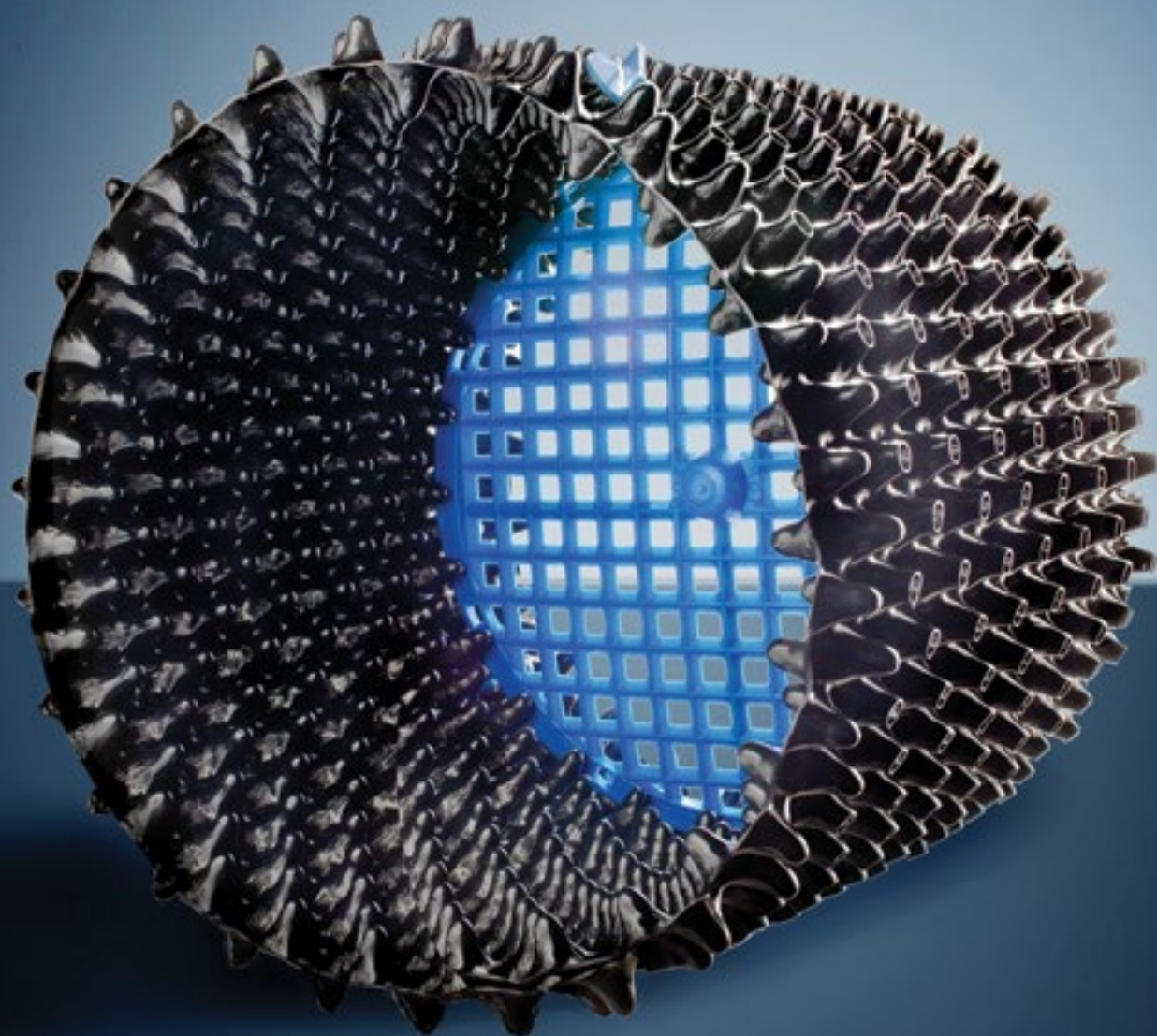
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Ramsey Hamide, pictured right, with Adam Hamide and Jason Keller, has turned Main Street Marijuana into the highest revenue-producer in the state, available now as part of a \$50 million package.  
*Photo by John Zhang.*

#### ON THE MARKET

While Uncle Ike's and Main Street are clearly the two marquee brands for sale in Washington's cannabis industry, they're not the only businesses that can be bought for the right price.

Espinda said disillusionment is one of the reasons some of her clients are looking to

sell. She's seen three general reasons people are looking to get out of the business: a partnership is not working out; the business is more work than expected; or the return on investment is not what was expected.

Espinda also said there is a significant investment required to start a cannabis business, especially for producers and processors, and many startups have had their capital buckle under the pressure.

"I think a lot of them were undercapitalized," she said, adding that the regulatory aspect is stringent and constantly changing, leaving some entrepreneurs "just fried" by the time they are even ready to open.

State regulations may also hamper the sale of the Uncle Ike's and Main Street businesses as state law limits individuals to a total of three licenses, although Eisenberg and Hamide said they are working with lawyers to make sure any sale of the entire group would be done legally.

While they would be willing to discuss the sale of individual stores, they are more interested in unloading the full lot to someone looking to expand or make a splash in the Washington market.

"Any real buyer will want all of them," Eisenberg said.



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# WHY ARE THERE SO MANY FERTILIZERS?

With countless nutrient manufacturers marketing products for the cannabis industry, separating facts from wild claims can be challenging, particularly for growers who don't have a background in plant sciences

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By DANIEL S. KLITTICH, PH.D.

**T**he number of brands and products on the fertilizer market for the marijuana industry is staggering. From labeling gimmicks to secret stimulants in tiny bottles, they all claim to make your buds the best they have ever been.

Flipping through any publication provides dozens of fertilizer options, but why? Why is there such a diversity of products? Why do we pay a premium for these “specialty” fertilizers?

The answer lies in the decades of growing cannabis where the “grower” really had very little background in plant agriculture and more of a background in consumption. This led to a marketplace where the buyer knew almost nothing about the fertilizer products they were buying and simply took the marketing information at face value. Combine this with the financial ability to pay inflated prices, and the result is the fertilizer market you see today.

So what makes premium cannabis fertilizer any better than run-of-the-mill Miracle-Gro that can be purchased inexpensively at Home Depot? This article will break down the essential points of a fertility program and address what you should consider when building a nutrition program.

## BACKGROUND

A little perspective to start: Most large-scale agriculture growers buy their fertilizers from an agricultural chemical supplier. These products come in as either raw materials that are mixed on the property or in a specified blend developed by the supplier. There isn't enough time or space here to talk in depth about what these raw materials are, but there are many textbooks written on this subject. Basically, the raw materials are soluble salts (such as calcium thiosulphate, potassium chloride, zinc sulfate, ammonium nitrate, etc.) that contain the nutritional elements needed by plants.

With dozens of options available, it's important to choose the right salt to deliver the nutrient needed. Fertilizers can be applied in a granular form or dissolved in water and injected through irrigation systems. The application method depends on the crop being produced and the infrastructure in place to





Choosing the right fertilizers in the right amounts can improve root growth at every stage of the plant's life.

grow it. Most fertility programs are designed specifically for the plant and soil, based on a soil test and the known crop requirements. Programs are then adjusted in terms of fertilizer make-up, timing and amount applied depending on the results with the crop in the previous growing cycles.

#### ORGANIC VS. CONVENTIONAL

It is important to briefly address the issue of organic versus conventional fertility programs. This question really comes down to personal beliefs and the market in which you wish to sell. Organic products generally have lower concentrations of available nutrition, but over time can break down to provide the nutrients needed. Conventional products are cheaper per unit of nutrition, but if used in excess can limit soil microbial activity and structure. Both options, when done right, can produce a quality product.

On a side note, production ag is learning that the principles of soil stewardship — which form the basis of the organic movement — really can benefit the crop. This has led to the use of conventional fertilizers along with organic methods, such as composting and no-till, to produce great results. From a pure yield and quality standpoint, conventional versus organic does not matter. The chief factor is that the fertility program meets the needs of the plants throughout the growing cycle.

#### SIX KEYS

Designing and implementing a quality fertilizer program comes down to several key considerations:

- Growing media: From a nutrient standpoint, growing in soil or a soilless media are very different. Soils are comprised of minerals that can inherently provide some of the nutrients needed. Soil also acts as a buffer that holds onto nutrients and mediates pH. Soil testing should be conducted to know what elements are available in the soil and what needs to be added. Soil testing will also let growers know if their soils have other issues such as high salinity or poor organic matter content.

Growing in soilless medias or hydroponics requires continuous availability of all nutrients and closer monitoring to ensure that nutrients are at the proper levels. This is important at not just an electrical conductivity (EC) or total parts-per-million (PPM) level, but also at the individual nutrient level if long-term water recirculation is being used. At certain growth stages, plants can use up all of one nutrient in the solution. This may not be reflected in a major jump in EC or total PPM if the nutrient is a minor component, such as zinc or boron, but can lead to severe deficiency symptoms. Furthermore, due to the inert nature of soilless culture, swings in pH and nutrient depletion can be fast; thus, close monitoring is essential.

- Crop requirements: Plants use different nutrients at different rates. This is where fertilizer formulation comes into play. A good formulation will have a balance between all the nutrients contained in the product, so that total PPM or EC is indicative of the actual total nutrient availability. This, however, is very difficult to achieve in practice because the plant's nutrient requirements change throughout the growth cycle. Formulations for rooting, vegetation and bloom exist in the marketplace to help meet the specific nutrient needs of the plants at these critical steps in the growing process.

- Timing: Timing of application is essential to provide the plant with the nutrition it needs when it needs it. There are critical points in the plant's development when the yield of the crop will not be acceptable if nutrition is lacking. For example, during early bud development, if complete nutrition is not provided, the bud will not differentiate as many reproductive structures, thus limiting the crop's yield. This is true from cherries to broccoli to marijuana.

- Product support: It is inevitable that you will encounter an issue while using a product when it is essential to have a knowledgeable person available via phone or email to solve your issue quickly.

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Whether using organic or conventional fertilizers, the most important factor is to meet the needs of the plant throughout the growth cycle.

growing operation in Humboldt County, California will have very different requirements than a hydroponic greenhouse in Denver, Colorado. These guidelines will help develop a nutrient program that can be perfected for specific growing conditions. Learning from each crop cycle and adjusting accordingly will produce a better crop and help growers learn what each component affects.

Fertility, however, is only a small part of the growing practice. Deficits in pest control practices, watering, cultivar choice, climate monitoring and control, soil salinity and water quality all need to be managed to produce a marketable crop. It is very common for nutrient deficiency symptoms to occur due to some other problem not related to the fertility program. For example, high salts in the soil can cause burnt tips and an over-saturated soil can cause yellowing of the leaves. A balanced, well-maintained production system is required for a quality crop.

The use of a fertilizer tailored for the needs of the crop is important for top production. Also, a product that meets the different requirements at each growth stages (rooting, vegetative, bloom, etc.) will provide even better results.

This is not a buyer's guide with comparative tests, so it's not meant to offer specific product recommendations; as stated earlier, growing conditions are unique and the products that work for one grower may not be the same as the next person. Keeping records and making improvements when needed will allow growers to maximize their yield and consistently produce a quality product.

*Daniel Klittich is a graduate from University of California, Davis, holding a master's degree and a Ph.D. in entomology. His research focuses on the utility of silicon fertilizers to control pests, as well as the impacts fertility programs have on crop quality and yield. He is now a research agronomist with Redox Chemicals LLC on the California Coast.*

have good support from that company and are using a quality product. There are companies that will design custom blends for your growing conditions.

- **Price:** The price of a product does not indicate its quality or value. These come from the formulation and inputs used to make the product. When selecting a fertilizer, make sure the price of the program is within your budget, but do not assume that a high price necessarily indicates a good product. Conversely, low price also does not mean poor quality. The value of the product is in the formulation expertise, and the cost is in the container and shipping. The raw material cost of most products is well below \$10 per gallon of concentrate.

- **Recordkeeping:** It is essential to keep records of rates, timings and products used to be able to replicate the practice in the future or adjust it to make improvements. This is true for other production factors as well. Good growers have an idea of what went wrong or right. Great growers know exactly what was different and can fix or replicate it the next time around.

### MIRACLE-GRO

So back to the question of how Scotts Miracle-Gro stacks up against "premium marijuana fertilizers." Miracle-Gro is a line of nutrient formulations that is designed to push green bedding plants with lots of flowers and/or vegetables grown in the soil.

The package offers simple instructions for mixing and application rates. There are several different formulations of Miracle-Gro tailored for vegetables, tomatoes, orchids and more. Will they grow a cannabis plant? The answer is yes. Plants don't read labels, and the majority of needs for a rose bush or a tomato are the same as what a marijuana plant requires. For growers with a couple plants looking for an easy, cheap product, Miracle-Gro will work. However, for those trying to grow a quality product in large numbers, Miracle-Gro is not the best choice.

First, Miracle-Gro does not come in large enough quantities to support a commercial growing operation. And just as Miracle-Gro knows bedding plants and roses require different formulations for peak performance, the same is true for cannabis. It also does not perform well in water culture, because it is designed for use in soil. It is not a complete source of all nutrients and it will not maintain stable water pH.

Miracle-Gro is great at what it is designed to do, but is not the best choice for producing a quality marijuana crop.

### CONCLUSION

Following these guidelines will help to make your fertility program shine. Specific products or rates were not suggested in this article because each growing condition is very different. An outdoor, in-ground



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# HYDRO





# PONICS

Seven tips for those considering getting  
their feet wet

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By BRIAN BECKLEY

**D**espite all the various styles, setups and secrets used to grow cannabis, one of the primary choices for growers revolves around whether or not to use soil.

While soil can be a more forgiving medium, many growers and some cannabis aficionados swear that hydroponically grown marijuana has a cleaner taste than its dirt-grown counterparts. However, others argue that soil and organic-based growing methods produce a more flavorful final product.

“Hydroponics is not a magic wand to fix poor growing habits and bad genetics,” says Dan Lubkeman, president of the Hydroponic Society of America. “There is no magic wand.”

When done properly, hydroponics can produce bigger, stronger plants with larger overall yields and more control over temperature, nutrients and pH levels, compared to more traditional growing mediums, according to Current Culture H2O vice president Christian Long.

So for those looking to ditch the dirt, Marijuana Venture spoke with a few experts to find out what they consider to be the most important factors to consider when setting up a hydroponic growing system, whether it's for tomatoes or cannabis.

While it's no magic wand, hydroponic systems can lead to bigger plants with larger yields if you follow a few simple tips. *Photo by Don Truong.*





Keeping your hydroponic grow room clean is key to producing top quality hydroponic cannabis and repeating the results. Photo courtesy Current Culture H2O.

### CHOOSE THE RIGHT SYSTEM

While many people think hydroponic cultivation requires a purely water-based medium, it really means “growing without soil.”

There are a handful of styles of hydroponic growing, from a drip method that drizzles nutrients through the growing medium to a “flood and drain” method in which the growing media is periodically flooded, rather than keeping the roots fully submerged. There’s also the aeroponic method, which uses mini-sprayers and sprinklers to mist the roots, and the nutrient film technique (NFT), which sets the roots in a thin film of nutrient solution to expose more of the root to oxygen.

Long has been with Current Culture since it launched in 2006. Prior to helping start the California-based company, he worked in hydroponic retail for a handful of years and says he has plenty of experience as a hydro grower himself.

While the NFT method is popular for small crops like lettuce and other leafy greens, Long says it’s not particularly useful for growing commercial quantities of cannabis.

For most cannabis growers, Long recom-

mends what is known as a “deep water culture,” in which the roots of a plant are completely submerged in nutrient-rich water.

### TEMP CONTROL

Long’s first piece of advice is to get a water chiller to ensure that water temperature stays between 65 and 68 degrees Fahrenheit. The temperature not only helps keep away pests and pathogens, but will help maintain dissolved oxygen levels in the nutrient solution.

“Every degree that water temperature goes up from 68, its ability to hold on to that oxygen diminishes,” Long says, adding that colder water will also help create a heat sink to pull unwanted heat away from lights and other equipment.

### WATER LEVELS

Maintaining the proper water level through growth and bloom is another important factor for growers to pay attention to. The water level should stay fairly high, according to Long, in order to ensure the plants stay hydrated. However, if the water level gets too high, the plant can get “water-logged.” Long suggests keeping the

water right at the tip of the root crown, but below where the stalk of the plant begins.

As the roots develop and the plant gets closer to blooming, Long says water levels can be lowered to expose more root mass. He believes creating drought-like conditions in late bloom can aid bud formation.

To keep water levels where they’re needed, Long recommends having a top-off reservoir connected to a float valve to help maintain consistent water levels. Water and nutrients can be added to the reservoir when needed instead of directly into the system itself as plants use up the solution.

“As plants are feeding, you’re going to see a drop,” Long says.

### MAINTAIN THE PH

Long recommends a pH between 5.5 and 6.5 in a deep water system, which allows for more leeway than a dirt or drip system, he says.

However, he adds that any adjustments to pH or other nutrients in the water solution should be diluted and added through the top-off reservoir to prevent any concentrated pH adjusters from resulting in plant/root shock.

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Deep Water Culture systems, like those made by Current Culture H2O, provide a better nutrient base for cannabis than the nutrient film technique used for leafy greens like lettuce. *Photo courtesy Current Culture H2O.*

## WATCH THOSE NUTRIENTS

While it's important to make sure the plants are getting everything they need to grow, Long says the nutrients needed by cannabis are more similar than dissimilar to those needed by any other plant. He suggests a "really clean and simple" formula. For example, Long says the nutrient blends sold by his company are mineral salts dissolved in water, with no bacteria or organics added.

Keeping the focus on water and pure mineral salts will get the most efficiency out of your nutrients and keep the nutrient solution viable for longer, he says.

Although a deep water culture system can run with only top-offs to the reservoir system, Long still recommends a full nutrient change-out every 14-21 days, timed with the various cycles of the plant to help give a boost to the next stage.

"Anytime you put fresh solution in there, the plants like that," Long says.

Growers using more complex nutrient solutions with heavy organic inputs should change the solution more frequently, every 7-10 days.

## KEEP IT CLEAN

Finally, making sure the system is fully cleaned between grow cycles ensures that each crop gets a fresh start, free of any

buildup and biofilms that may be present from the previous cycle.

Long suggests a water conditioner that is a weak acid to help remove mineral salts. Cycle it through the system for 24 hours and then thoroughly rinse and allow all equipment to dry before beginning the next growth cycle.

But it's important that the entire environment remains clean, not just the water solution. Long preaches simplicity in set-up, with few obstructions and as clean a room as possible. Lubkeman agrees, adding that even plant debris or pathogens brought into the room on an unclean shoe can affect a grow.

## TAKE GOOD NOTES

Even when sticking with best practices for growing, Lubkeman says the key to success in hydroponics is to "keep good notes and to keep it clean."

"I meet so few people who take notes," he says, adding that being consistent is the key to repeatable results. "Be scientific."

Lubkeman recommends keeping records of temperatures, nutrient dosage rates, frequency of application, pH data and, of course, nutrient data.

"Over-fertilization and under-fertilization are the two most common killers in the garden," he says.



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# Water Filtration: A Growing Concern

While commercial agriculture typically avoids reverse osmosis, it's often the best option for cannabis growers who need a constant supply of pure water

By RICH GELLERT





**M**any critical decisions go into choosing the optimal layout, lighting plan, irrigation/fertigation systems and climate-control design for a successful hydroponic cultivation facility. These highly engineered systems make up a large portion of upfront build-out expenses.

However, all too often, the importance of a consistent, reliable water source is overlooked. Even seasoned professionals can lack the adequate knowledge to respond to increasingly complex water issues that can determine the success or failure of an operation.

#### **FILTRATION**

Here's the upshot: Starting out with a base of pure water ensures a consistent feed formula with repeatable results for every crop cycle, regardless of source water quality.

The most efficient and cost-effective way to ensure a reliable source water profile is a commercial-scale reverse osmosis (RO) system. While RO as a requirement has been subject to debate, today's commercial-scale cultivation professionals know it's the single most affordable and least energy-intensive technology to produce pure water.

To be clear, not every situation requires RO. In a best-case scenario, reliable, consistently

high-quality source water is readily available. However, if water needs to be treated, RO becomes a logical choice for the serious grower.

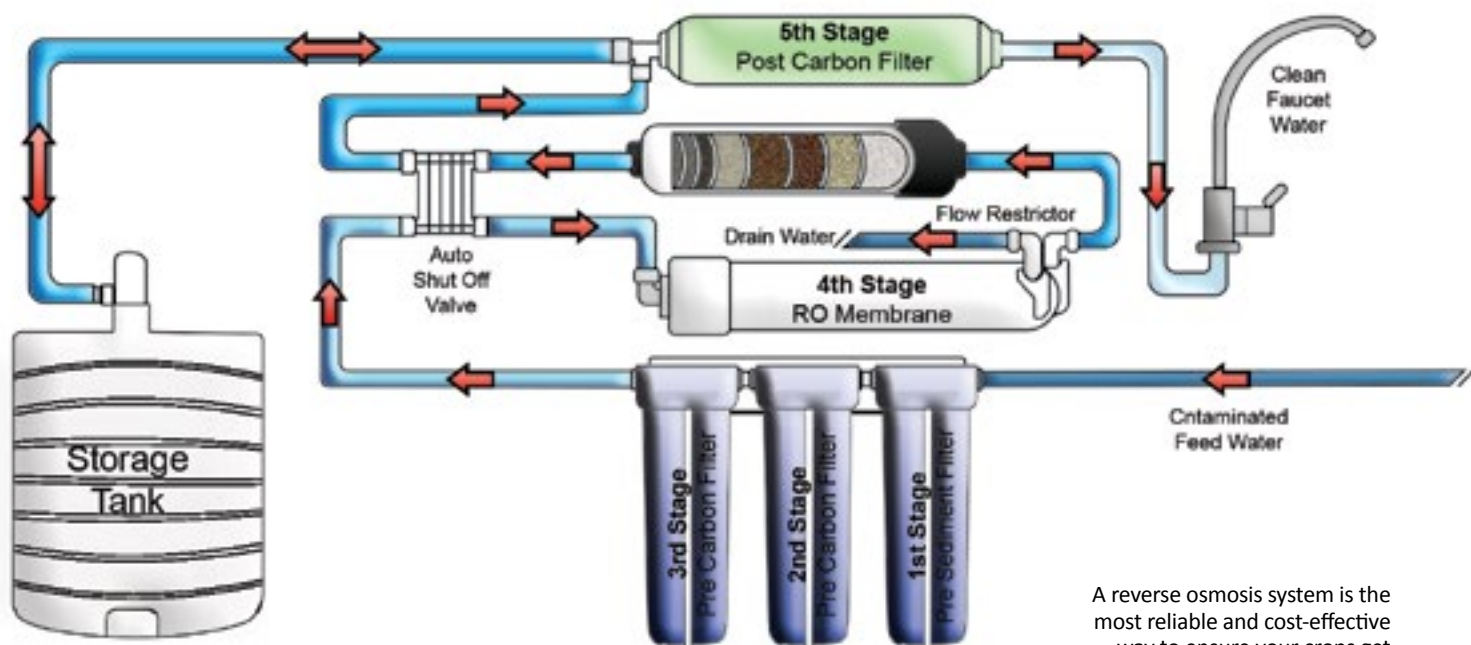
For modern growing practices, it's particularly important to highlight the differences between industrial agriculture and cultivating a refined, premium product on a commercial scale. There are many methods and technologies shared by the two, but the most important difference is that Big Agriculture is primarily concerned with volume, not quality.

#### **VOLUME VS. QUALITY**

Producing a top-shelf product — whether it be orchids, craft beer or exceptional cannabis — requires full control of inputs, including water. Furthermore, the medical cannabis community is becoming increasingly aware that a pure product requires pure inputs, water being one of the most critical. Avoiding tissue contamination can only be achieved by scrutinizing every stage of the production process, from cultivation to packaging.

Certainly, volume is extremely important. It makes sense that agriculture professionals are beginning to have tremendous influence over how large-scale cannabis grow operations are designed. But achiev-





A reverse osmosis system is the most reliable and cost-effective way to ensure your crops get the purest water possible.

ing volume is relatively easy with cannabis, whereas growing a high-quality product requires a well-rounded, refined approach to success.

Those with experience in industrial agriculture growing tens of thousands of acres of a monocrop may be skeptical of the use of RO to purify source water for commercial cannabis cultivation. Because the volume of water needed for industrial agriculture operations is much too great to purify with RO, those operations typically rely on customized nutrients based on the contents of their untreated irrigation water.

This may work to produce a decent yield from a traditional monocrop, but when controlling unique, strain-specific environments and nutrient formulas for a high-value crop such as cannabis, every input can affect the final value of the product. The goal of commercial cannabis cultivation is to produce the best quality and largest yields from the given square footage of canopy space and to maximize efficiency in these environments. Large-scale, traditional agriculture water treatment practices do not always apply to specialized, high-value crop production.

## FREQUENTLY ASKED QUESTIONS

### How does one use RO water correctly?

Cultivators use RO water as a pure base to mix with their nutrients. Experienced growers using RO water know it's necessary to first add the desired amount of plant-specific, bioavailable calcium/magnesium, then the chosen nutrient regimen in order to achieve optimal, consistent results and to avoid plant deficiencies. The correct mix of specialized nutrients and minerals is an essential component to ensure fast and healthy plant growth.

A majority of total dissolved solids (TDS) in untreated source water are made up of calcium and magnesium (also recognized as hardness), two beneficial minerals that are vital to the growth of plants. Although calcium and magnesium are necessary for plant growth, the calcium carbonate and magnesium carbonate molecules typically found in source water are too large for plant roots to absorb efficiently. Therefore, these compounds need to

be chelated (broken down) into a more usable form, requiring extra energy from the plants that would be better spent on reaching their full growth potential.

Adding chelated calcium and magnesium (as well as beneficial biologicals) to RO water is the most efficient and measurable way to give plants what they need to thrive.

### Do RO systems waste much water?

All RO machines have a feed water inlet, a purified product water stream, and a waste water stream. The RO membrane acts as a barrier to all dissolved salts, minerals, inorganic and most organic molecules. Pure water molecules pass freely through the membrane, creating purified product water (or permeate stream). The rejected contaminants are concentrated in the waste water (also referred to as the RO concentrate).

While it is true that all RO systems have a certain amount of waste water, the technology has evolved greatly through the years, and today there are ultra-efficient RO filters capable of producing up to a 4:1 ratio of product water to waste water. Historically, that ratio had been reversed: one part product to four parts waste.

Commercial RO is also integral to reclamation systems that recycle nutrient runoff water. As volume usage limitations and waste water regulations become more rig-

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## Will carbon filters reduce TDS?

There is a common misconception that carbon filters can remove TDS from water. This is simply not true. While carbon filters will remove chlorine, chloramines and certain other toxins from water, they are not intended to remove any other dissolved minerals, and will not significantly lower the PPM count or electrical conductivity of the water.

## Why does pure water matter?

Pure water plays a crucial role as the basis for a proper and consistent nutrient formula. Rarely do cultivation facilities have high-quality water straight from the tap. While most professional grow operations now use some form of water filtration, some still do not, and they are taking a major risk, especially if they are not fully aware of source water quality issues and how they might affect plant yields.

Getting a water test is of utmost importance to determine what levels of these pollutants are present. Too much hardness, iron, manganese, lead, copper or zinc in untreated source water can lead to lock-out and deficiency problems. Chlorine and chloramines, typically added to municipal water, effectively kill any beneficial living microbiology. Fecal coliform, herbicides, bacteria, pesticides, phosphates and nitrates are, unfortunately, all too common in a growing number of water sources.

Fortunately, there are technologies available today to deal with even the dirtiest of water problems. The budget for an integrated water filtration solution is typically a small expense relative to the overall cost of building a facility. However, the small investment in reliable water quality can yield tremendous return. At the end of the day, developing an effective water treatment plan can help maximize a cultivation operation's competitive edge.

*Rich Gellert is the founder and president of HydroLogic Purification Systems, one of the premier providers of water filtration technologies for residential and commercial applications. He has dedicated HydroLogic's commercial division, HyperLogic ([www.hyper-logic.com](http://www.hyper-logic.com)), to engineering specialized water treatment solutions for issues that cultivators face with inconsistent and contaminated water sources.*

id, a sustainable water treatment plan is becoming an increasingly important part of a professional cultivation operation's initial design. These regulations are imminent and it's crucial for business owners to be aware of these new laws and have a plan of action to be legally compliant.

## Do RO systems produce water too slowly?

Operations that use a commercial RO system are typically designed with large, pure-water storage tanks. The RO system is sized to provide the daily demand for water that will later be distributed to nutrient mixing reservoirs. An RO water storage tank allows facilities to have a reliable, on-demand water source versus distributing water straight from the RO system.

On the hobby hydroponics scale, RO systems typically produce 75 to 300 gallons per day (GPD). A 300-GPD system will produce 12.5 gallons in one hour. However, there are high-flow commercial-grade RO filtration systems capable of producing up to 100,000 GPD or more. The more filtered water per day a system

can produce, the higher the flow rate will be. For example, a 10,000-GPD RO system can produce water at 416 gallons per hour. The larger the RO system, the more quickly it will produce pure water.

## Will using pure water really affect my results?

Every properly controlled input has the potential to improve yields. Most nutrient manufacturer's feed charts assume a base of pure water. By starting the feed formula with RO water, growers are able to dial in exactly what they feed their plants. For the serious cannabis professional, the guesswork of what might be in the water should be eliminated.

Purifying source water changes its base profile from a variable to a constant, maximizing a controlled operation's potential success. Incremental gains in yield and quality can be crucial in today's increasingly competitive marketplace. Starting with pure water removes water quality issues from the equation and ensures a consistent feed formula for plants which leads the way to reliable harvests.

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# The Great TRUMP'S IMPACT ON

New administration's anti-marijuana cabinet could play a major role in restricting — or recriminalizing — state-legal businesses

By MAURICE R. DRAYTON

In just a few short years, legal cannabis has become a nearly \$7 billion industry. Nearly 60% of the states have legalized the use of cannabis for either recreational or medicinal purposes, but because the sale of cannabis is still illegal under federal law, it has been extremely difficult for those operating within the industry to acquire and maintain legitimate banking relationships.

Things have gotten better for the cannabis industry in the past few years, particularly in the area of banking. President Obama and his administration took a hands-off approach to cannabis and paved

the way to, in essence, decriminalize growing, possession, use and distribution of cannabis at the federal level, provided cannabis businesses complied with applicable state laws. (Despite the fact that President Obama's White House website page on the Office of National Drug Control Policy stated "The Administration steadfastly opposes legalization of cannabis," President Obama's administration took significant steps to foster a productive business environment for cannabis companies.)

In 2013, Deputy Attorney General James M. Cole wrote a memorandum that updated the Department of Justice's previ-

ous guidelines to federal prosecutors concerning cannabis enforcement. It re-emphasized the DOJ's priorities regarding cannabis and stated that in instances where individual states had enacted regulations consistent with federal guidelines and priorities, federal prosecutors should use their limited resources on other endeavors. In other words, the Cole Memo implicitly authorized federal prosecutors to tolerate state-regulated cannabis industries.

Shortly thereafter, in 2014, the Financial Crimes Enforcement Network (FinCEN), a division of the U.S. Treasury, issued some guidance of its own. FinCEN set

## The IRS is Looking. Who Can You Trust?

*The biggest key is properly vetting all tax professionals you hire*

By Elizabeth Sheldon

Somewhere along the line, you made the difficult choice to become a part of the cannabis industry, which is fraught with risk of both criminal prosecution and excessive IRS scrutiny (read: disproportionate audit risk and huge tax rates).

While we cannot predict what the current administration will

do, we have a pretty good idea of what path the IRS is taking and will continue to take with regard to the cannabis industry, and it runs right through Auditville. The challenge business owners face, among others, is finding a qualified — if not exceptional — tax professional to be on your team, someone you can trust with the dollars and cents of your business. But where can you find

# Unknown:

## CANNABIS BANKING

forth specific suggestions as to how financial institutions could provide services to cannabis companies, leaving the decisions about whether to “open, close, or refuse any particular account or relationship” to each individual financial institution based upon their own internal process. However, if a financial institution decided to service a cannabis company, FinCEN required increased due diligence on the part of the financial institution, including the verification of its customers’ compliance with state licensing procedures, monitoring its customers for any suspicious activities and filing suspicious activity reports (SARs) on each of its cannabis companies.

Despite the guidance set forth in the Cole Memo and the 2014 FinCEN guidelines, many of the nation’s largest banks, such as Bank of America and Wells Fargo, refuse to do business with cannabis companies. For them, because cannabis

is still an illegal federal drug, any money derived therefrom is tainted.

Accordingly, the void has been filled mostly by small state banks and credit unions, such as Salal Credit Union in Seattle and Numerica Credit Union in Spokane, Washington, which openly court and advertise their services to cannabis companies, and Maps Credit Union in Salem, Oregon, which quietly offers similar services. The financial institutions that have been willing to jump through the regulatory and oversight hoops now provide cannabis companies with the most basic of banking services, such as checking accounts and payroll services. The credit market for cannabis companies is still limited mostly to private equity funds and individual investors. Naturally, the substantial costs related to the heightened due diligence and regulatory compliance are passed along to the cannabis compa-

nies, with some banks charging as much as \$1,000 per month in account fees.

While it has gotten easier for cannabis companies to find legitimate banking solutions, there may be dark clouds on the horizon. In 1990, at the Miami Herald Company of the Year Awards Luncheon, Donald Trump said, “We’re losing the War on Drugs badly. You have to legalize drugs to win that war.” But on the campaign trail, according to a February 2015 article in the Washington Post, when asked about Colorado’s cannabis legalization Trump responded, “I say it’s bad. Medical cannabis is another thing, but I think it’s bad, and I feel strongly about it.” Later, Trump stated that perhaps the question of legalization was actually a states’ rights issue.

Again, according to the Washington Post, during a rally in Nevada, Trump said, “Marijuana is such a big thing ... I think medical should happen — right?

such an ally and how do you know if this person really is the professional that they claim to be? Here are a few tips to vet such a partner and to help you understand why it is so important.

### STEP 1: EDUCATE YOURSELF!

I’m not suggesting that you go get a degree in accounting, but I am suggesting that you hit a Cliffs Notes version of a cannabis tax primer. Be at least a little familiar with Section 280E, why it’s important to you as a cannabis professional, and know what, if any, workarounds and/or strategic planning steps will put you in the best position possible.

Ask questions of your potential tax professional: Why do they think it’s important? What other landmines has the IRS planted in

your fields next to your harvest? What changes can be made to minimize your tax burdens and give you the strongest defense if you are audited (which is extremely likely)?

If the answers sound too good to be true, they probably are. But if the suggestions make sense and take a guarded but protective stance for your business, you may be on the right track with the right person. The more you know, the more you can assess what this potential ally really does or does not know.

### STEP 2: DO YOUR DUE DILIGENCE

There are bookkeepers, accountants and CPAs who will represent themselves as “experts” in the cannabis accounting field. They may even include specific cannabis-related terms in their



# Three ways to reduce taxable income

Despite complicated laws, there are ways to minimize tax obligations while remaining compliant with Section 280E

By JESSICA MCCONNELL

Taxes are one of many conflicts between state and federal laws pertaining to the cannabis industry. States that have legalized cannabis for medical or recreational use treat all business alike, allowing the same deductions and credits for business expenditures. Under federal tax laws, however, most cannabis-related businesses are prohibited from deducting or receiving credits for ordinary and necessary business expenses.

Marijuana remains an illegal controlled substance under federal law. Section 280E of the Internal Revenue Code states, “No deduction or credit shall be allowed for any amount paid or incurred during the taxable year ... if such trade or business consists of trafficking in controlled substances ... prohibited by federal law.” In application, Section 280E often results in a cannabis business paying more than double in income taxes than it otherwise should.

That brings us to the million-dollar question: How does a cannabis business comply with federal tax laws and still deduct its business expenses? While there is no magic workaround, here are three ways a cannabis business may reduce its taxable income.

**1.** Include certain expenses in COGS. For producers, processors and retailers, gross income is calculated by subtracting the cost of goods sold (COGS) from total sales. Taxable income is gross income less deductions. Because Section 280E prohibits a cannabis business from taking any deductions, it is important to maximize COGS.

Inventory-costing rules require that all costs “incident to and necessary for the production operations and processes” be allocated to items of inventory and included in COGS. A retailer’s COGS should include the price of marijuana, transportation costs and the necessary expenditures in acquiring the product. A producer’s COGS should include all direct production costs, such as materials and labor, and indirect production costs, such as rent and property taxes, repairs, maintenance, indirect labor, indirect materials and supplies, utilities and costs of quality control and inspection. Depending on their financial reports, producers may also include certain taxes, depreciation, employee benefits, administrative costs of production, a portion of the officer’s salaries and insurance costs.

Additionally, Section 263A of the Internal Revenue Code requires the

Don’t we agree? I think so. And then I really believe we should leave it up to the states ... And of course you have Colorado, and I love Colorado and the people are great, but there’s a question as to how it’s all working out there, you know? That’s not going exactly trouble-free. So I really think that we should study Colorado, see what’s happening.”

Trump has pledged to be a “law-and-order” president, and two of the politicians in his inner circle seem to fit that mold. Vice President Mike Pence is a staunch anti-cannabis politician. As the governor of Indiana, he presided over some of the most oppressive cannabis laws in the nation. When the Indiana Legislature attempted to reduce penalties related to possession of cannabis, Pence refused to sign the bill until stiffer penalties were put back into the legislation. But Pence is only the vice president, and history has shown us that vice presidents wield differing amounts of influence over an administration.

Perhaps more problematic for cannabis companies and their access — albeit limited — to the banking system is Jeff Sessions, Trump’s pick for attorney general. Sessions is America’s top law enforcement official and he has been very vocal about his opposition to legalized cannabis in every form. He believes that cannabis use leads to more drug use and that there already have been plenty of problems in states that have legalized cannabis. (For a more in-depth review of Sessions’ sentiments on drugs, see his Senate floor speech on the opioid epidemic from March 7, 2016.) With the simple retraction of the Cole Memo, federal prosecutors may choose — or may be told — to aggressively pursue state-sanctioned cannabis producers, distributors and users. Alternatively — or perhaps in addition — Sessions could roll back the 2014 FinCEN guidelines which made it more palatable for banks to provide banking service to cannabis companies. It would only

business titles to lead you to believe they know exactly what they are talking about. Do not take any “expert” at face value! Check, double-check and triple-check. I have seen and heard some of these “pros” disseminate bad, false and potentially illegal advice when discussing the specific challenges faced by businesses in the cannabis industry; it was unsettling and frankly, a little scary.

If someone has been in their field for only a few short years, they probably aren’t experts. They probably don’t have the experience or the foundation to understand the financial challenges you face, and they certainly cannot offer sound advice on how to deal with them.

Check their background: How long have they been a bookkeeper, accountant or CPA? Do they have other clients who would

recommend them that you may contact directly? What specific training or experiences have they had in the cannabis industry that allows them to offer something more than H&R Block? Don’t be sold on a smile and script. Push them a little outside their comfort zone until you are comfortable in yours. Remember, their mistakes and shortcomings impact your bottom line.

## STEP 3: GET A SECOND OPINION

Once you choose someone to take care of the books and/or taxes for your business, I suggest that you take a sampling of their completed work to someone for review. There are teams of professionals out there who would be happy to give a review or a critique of the preliminary work done by your new, trusted ally.



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inclusion of purchasing, handling and storage expenses for sellers and the allocable service costs associated with payroll, legal and personnel functions for both sellers and producers. In Chief Counsel Memorandum 201504011, the IRS claims that Section 263A does not apply to cannabis businesses, but the IRS' position lacks support and the memorandum is not binding. Despite this, cannabis businesses that include these additional expenditures in COGS should expect the IRS to challenge such expenditures if audited.

There are specific expenditures that may not be included in COGS: marketing, advertising, selling, research and distribution expenses, interest, income tax, pension contributions, general administrative expenses and certain salaries paid to officers.

Given the complexity of determining COGS, accountants and CPAs for cannabis businesses need to understand the allocation of expenditures and establish a bookkeeping method that will maximize COGS.

**2.** Treat state excise taxes paid as a reduction of amount realized. States that have legalized cannabis have also imposed substantial excise taxes on its production, processing and sale. Section 164(a) of the Internal Revenue Code allows a taxpayer to treat certain taxes as part of the cost of acquiring the property or a reduction in the amount realized on sale. In simpler terms, the taxpayer can add certain taxes to the cost of a product or subtract it from sale proceeds. State excise tax falls into this category.

The IRS confirmed this when it published Chief Counsel Memorandum 201531016 explaining that Washington state marijuana excise tax payments should be treated as a reduction in the amount realized on the sale of the property. The IRS went on to explain that the excise tax is neither a deduction from gross income nor a tax credit and therefore, does not run afoul with Section 280E.

**3.** Operate a secondary business in the same location. A cannabis business can operate a secondary business that does not involve a controlled substance in the same location using the same resources.

The second business can deduct its allocable portion of the expenses. The second business must be a legitimate business for the purpose of making a profit. The expenses need to be reasonably allocated to each business and easy to identify. For example, if the second business uses one-third of the retail space, one-third of the rent and utilities could be deducted. The books and records for each business should be kept separately.

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take a few high-profile enforcement actions to spook the entire industry and cause the few banks that provide banking services to cannabis companies to decide that the risk of losing their FDIC insurance — or worse — is no longer worth the rewards associated with banking cannabis companies.

What happens next in the legitimate cannabis banking industry is completely unknown. Trump has shown himself to be extremely unpredictable during his short political career. On one hand, the cannabis industry could be a boon to the economy by creating new jobs, ancillary industries and providing tax revenue. On the other hand, Pence and Sessions, two people very close to Trump, view cannabis and other illegal drugs as a scourge on our society and if permitted, would take all necessary steps to eradicate them from the United States. It may all depend on the Trump Administration's priorities. Trump, like most presidents before him, made a lot of promises to a lot of people and cracking down on cannabis companies and the financial institutions that serve them may take a back seat to running the country and "making America great again."

Everyone in the cannabis industry should stay vigilant and keep informed, because 2017 might be a little bumpy.

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Give them a call, vet them and ask what it would take for them to review a few spreadsheets or tax returns and provide their input.

This will help you find shortcomings early enough in your new relationship where your exposure is low and ability to adjust high. It will also reassure you when that review comes back with a clean bill of health. You do this with your personal health; there is no reason not to do it for your business health as well.

## CONCLUSION

If you've made it this far, you are to be commended. Most people don't like to think about, let alone read about, bookkeeping and taxes. But you have chosen a field that requires you to be more diligent, more aware of areas outside your immediate field

of expertise and more protective of the people you embrace as partners, helpers and allies. Take the time, do the work and set yourself up to win.

The time and energy you spend in vetting and confirming your choice will pay dividends as your business grows and prospers.

*Elizabeth Sheldon is supervising attorney at Tax Defense Partners (cannabistaxrelief.com). She started her career in criminal law in 1993. In 1996, she began working with the cannabis industry by offering free seminars in San Francisco dispensaries for the benefit of patients and dispensary owners. After receiving her advanced degree in tax law, she focused on the unique challenges the industry has regarding taxation.*

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# AVOID A COSTLY LAWSUIT

Why buy liability insurance? Aside from legal requirements, it could save your business thousands of dollars in the event of an injury

By BRENDA WELLS, PH.D.

**I**n the cannabis industry, there are a lot of potential liabilities, which are obligations to pay for damages you cause someone else to suffer.

For instance, the law generally says that any party in the chain of manufacturing or distribution of a product can be held liable for damages the end-user suffers from that product.

Businesses also have a liability for damages sustained by anyone visiting their premises.

Depending on what type of business you have, you might be thinking, “No one ever comes on my property except for me and my employees.” As crazy as it sounds, selected courts around the country have held property owners liable for injuries sustained by a trespasser. There

is a famous case from the Midwest that dates back several decades involving a man who set up a shotgun in his home that could be triggered by a break-in. His contraption — which in my mind sounds like something Wile E. Coyote would have concocted to catch the Road Runner — actually worked, shooting a burglar in the leg. The burglar sued the man for damages and won.

Imagine some thieves trying to gain access to your grow facility getting seriously injured by the razor wire at the top of the fencing. Or an intruder getting bit by a guard dog kept on the premises. Should you have to pay them? While most rational business people would say no, the answer, unfortunately, might be yes.

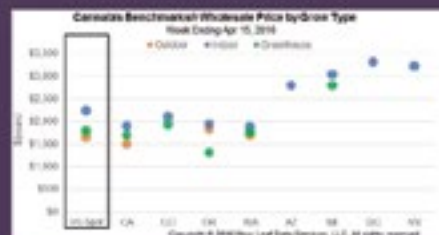
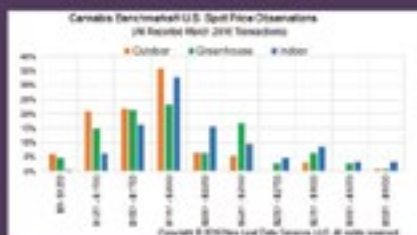
Of course, businesses are also liable if a delivery driver or somebody running an errand for the business is involved in an at-fault collision. Automobile liability is a major source of lawsuits in America, which is why every state requires drivers to carry some type of liability coverage on their vehicles.

The bottom line is there are a lot of ways businesses can get sued. This is where liability insurance comes in. This fundamental type of insurance is designed to pay damages to third parties who sue

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# “YOU CAN’T JUST SEND THE JUDGE A NOTE THAT SAYS, ‘ARE YOU KIDDING ME?’”

you (or who could potentially sue you). Businesses desperately need this coverage in at least three forms: general liability, automobile liability, and workers’ compensation and employer’s liability.

Let’s suppose someone tries to break into your property and gets injured. They find a lawyer and file a lawsuit. What do you do?

Even though this sounds like a presumably frivolous lawsuit, you can’t just send the judge a note that says, “Are you kidding me?” You still have to respond in a legally appropriate manner. You’ll need a lawyer, and even really inexpensive lawyers charge \$250 an hour. For good representation on the West Coast, you could be looking at \$750 an hour or more. Just getting a lawyer up to speed on the case could cost you thousands of dollars. One of the reasons you need liability insurance is because it pays for the lawyer.

I know someone who was sued years ago for something that was really frivolous. The case was ultimately settled without her having to pay the plaintiff a penny in damages, but that was only after she spent \$75,000 on an attorney. Thankfully, she had liability coverage, which

paid every penny of the attorney’s fees.

Please note that insurance companies don’t just let people pick out an attorney who will run up a big bill. Insurers may choose the attorney or provide their own. But still, you have representation that you don’t have to pay out of pocket for and that’s a good thing.

States typically require licensed cannabis businesses to carry liability insurance; all states require all drivers to carry auto liability insurance; and all but the very smallest businesses also have to carry workers’ compensation insurance. But even without the legal requirements, it makes sense for businesses to carry these coverages anyway, given the fact that insurance picks up the cost of settling and resolving even frivolous claims.

*Brenda Wells, Ph.D., is the Robert F. Bird Distinguished Professor of Risk and Insurance at East Carolina University and the owner of Risk Education Strategies. She has published articles on the risk management implications of cannabis legalization and is an expert in the risk management and insurance field. She can be reached at [brenda@riskeditstrategies.com](mailto:brenda@riskeditstrategies.com).*



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# HIRING SQUAD

HR concerns of the cannabis industry and how to avoid them

By BRIAN BECKLEY

**I**t's hard enough starting a business if you have a background in business, but the cannabis industry faces a distinct set of challenges, regulations and laws that can make it even more difficult than similar industries without illegal roots.

With legal marijuana sales topping \$3.5 billion in 2016 and more than 100,000 workers now employed in the industry, the key to a successful cannabis business may rest on the quality of employees hired and the ability to keep those employees happy — both functions of traditional human resources departments.

But where small, non-cannabis businesses can turn to professional employment organizations to outsource those duties and remain focused on their core operations, the unique needs of the industry put a heavier emphasis on cannabis-specific employment services.

That's where Denver-based Faces Human Capital Management comes in.

Founded by managing partners Christopher Cassese and Caela Bintner, Faces provides an HR platform for any level of the industry, complete with payroll, taxes, benefits packages, employee tracking and even customizable reports for cannabis businesses.

Marijuana Venture interviewed the two HR specialists to find out what cannabis business owners need to watch for, including high turnover rates, employee classification and recruiting the right person for the culture of your business.

## EXPERIENCE MATTERS

Cassese and Bintner met at a large, publicly traded company where they both worked. Cassese had 20 years of experience in sales at companies like Merrill Lynch and HSBC, as well as several years working in professional employment organization. Bintner had 25 years of experience in sales and public relations, including a stint with the first Bush Administration.

Together, they saw a need growing in Colorado and across the nation for traditional human resource services in the burgeoning cannabis industry, from recruiting to time and attendance to state compliance and offboarding.

"Anything an employee would need from hello to goodbye" they could address, says Bintner.

As the cannabis industry became a "burgeoning part of the economy" in Colorado, Cassese says he saw it moving

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## **JOB DESCRIPTION AND ELIGIBILITY**

Something as simple as a job description, designed to clarify expectations for both employee and employer, can help create a more stable environment, Cassese says.

Bintner adds that each retailer has a slightly different culture and target demographic, so it's important to find someone that will fit in and understand that culture and that budtenders are seen as assets who can help a business.

Hiring an outside firm to help pre-screen potential hires can make sure those being interviewed have the qualifications and skills for the job, saving business owners time.

"Don't spend 10 hours trying to find two front-line employees," Cassese says.

## **HR BASICS**

In addition, a professional employment organization can help an employer navigate hiring concerns such as drug testing and driving records, employee eligibility and classification.

According to Bintner, a lack of knowledge about the human resources side of a business can lead to simple, but costly mistakes such as making sure I-9 eligibility forms are filled out correctly. An improper form could lead to tens of thousands of dollars in fines for a business.

Once an employee is hired, it's important for them to be classified properly for tax concerns and overtime pay, the complexities of which someone used to working in an underground, cash-based industry might not understand. For example, an employee with an "exempt" classification is considered salaried and can work additional hours, whereas a "non-exempt" employee is eligible for time-and-a-half for any work over the traditional 40-hour work week.

Many outsourced human resource companies, like Faces, offer time and attendance software and on-site hours each week to help smaller employers ensure they are meeting all payroll requirements.

As human resource professionals, Cassese and Bintner suggest that companies have a good human resources information system, keep good records and collect proper documentation. Or, simply outsource those needs and "focus on revenue-producing activities," they say.

"Your employees are your greatest asset," Cassese says. "Treat them as such."

from hippies to a more mainstream business crowd who would need professional services.

Bitner had already seen the value of cannabis and wanted to help bring it out of the shadows. So in July 2015, the pair founded Faces, offering an outsourced HR option for businesses working in cannabis.

"This industry needs to be legitimized," she says.

## **COMMON MISTAKES**

While Cassese says all industries face the traditional fundamental issues of human resources such as paperwork and taxes, the nature of the cannabis industry often requires a different type of employee, making recruiting a top concern for many working in cannabis.

While there are crossovers such as logistics jobs, manufacturing work, front office and sales positions, Cassese says many cannabis retailers are looking for people who are more "nurturing" in nature, especially at dispensaries that serve a lot of medical patients.

Many employees, especially those with industry knowledge, are courted by multiple shops, often all paying around the same wage. That can lead to a high-

er turnover rate than in more traditional industries.

## **COMBATTING TURNOVER**

According to Cassese and Bintner, adding human resources services like direct deposit, health benefits and providing a path for career advancement, such as training for new positions and e-learning options, can keep employees happier and could prevent them from taking their services to the next store down the street for a few more bucks a week.

For example, can a trimmer work their way up to a better-paying job within your company? Are you offering workers training for other positions? A 401K?

Because of the state-by-state nature of the cannabis industry and the overarching federal illegality still in place, Cassese says another concern for many marijuana business owners comes in pay, taxes and paperwork. Many financial institutions still have concerns about taking marijuana money, but Cassese and Bintner say many banks are more willing to work with outside HR agencies like theirs, providing a way in for those in the industry, as well as providing software that offers direct deposit, moving the industry's pay scale from cash to a more traditional model.

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# First cannabis IPO clouds the future of executive action

Wall Street could be an unusual proponent of legalization

By Sean Badgley



Many a tea leaf will be read regarding the presidential election of Donald Trump with respect to cannabis. The executive branch possesses broad authority over cannabis, including the ability to liberalize it through descheduling, or to guide DEA enforcement in a harsher direction. The president has pledged to remain unpredictable, and taking him at his word, I will not attempt to prognosticate on the policy of the new administration or Attorney General Jeff Sessions, Trump's choice to lead the Department of Justice.

What I will argue is that the new president's outlook on cannabis can no longer be informed exclusively by oppositional propaganda, discussions about the safety of children (and the public in general) or state's rights issues. Now there's something much more serious on the line: his friends' money (the author is aware this statement assumes the president has friends). Or to be more specific, Wall Street's money.

On Dec. 1, 2016, Innovative Industrial Properties went public. The company's initial public offering (IPO) is noteworthy because it is the first publicly traded non-pharma company tied to cannabis, which is to say that the Federal Securities and Exchange Commission is aware of and at least tacitly approved its application to list on a registered stock exchange.

The company's IPO was neither wildly successful nor a total failure. Its average performance is likely due to its business model, which essentially revolves around real estate investment for cannabis companies. However, the offering's significance should not be overlooked.

Many in the cannabis industry — particularly those concerned with activism — spurn the hypothetical advances of big business into Washington state's can-

nabis market. The state Liquor and Cannabis Board set up a system that renders public trading on the floor of the New York Stock Exchange a functional impossibility for cannabis businesses. Plus, successful business owners attain a higher profile and find themselves subject to greater scrutiny from both regulators and consumers alike. In short, Washington's cannabis market isn't exactly what one might call a pro-business environment.

Yet, to predict the future, our newly elected president looks to have a much more pro-business streak than his campaign might otherwise suggest. One might reasonably expect that a real estate developer from New York might have

## MANY IN THE CANNABIS INDUSTRY SPURN THE HYPOTHETICAL ADVANCES OF BIG BUSINESS

some fairly favorable leanings toward Wall Street, and his cabinet picks would seem to undermine much of the protectionist rhetoric preceding the election.

IPOs, usually a strong driver of market growth, have not been as profitable in recent years. According to the Wall Street Journal, IPOs were at their lowest level since 2009. Ultimately, fewer public offerings mean fewer profitable opportunities for those on Wall Street. IPOs — and a lack thereof — have a direct impact on those who make their living on Wall Street.

At the same time, cannabis is a growing industry. According to one market research firm, North Americans spent more than \$53 billion on cannabis in 2016. The firm estimates a staggering 87% of this figure represents illegal income. The men and women on Wall Street are paid to find opportunities to exploit, and if they aren't racking their brains on a way to move some of that \$53 billion into the market through an IPO, then they aren't doing their jobs.

So, to recap: one of the main sources of profit for Wall Street is at its lowest level since the Great Recession; there is probably more than \$50 billion in demand for a federally illegal product on the cusp of legitimacy, the profits from which are not merely untaxed, but also inaccessible through the public market; and America may have just elected the most pro-Wall Street president since Herbert Hoover in 1929.

It may be the case that the president sees political opportunity in a regime of strict enforcement against cannabis. It may be that the DEA has already launched a puritanical crusade by the time this article reaches publication. The Supreme Court could strike down our law on an action brought by the Sessions Justice Department before the year is out.

However, to the extent that several state experiments are allowed to continue unmolested, the legalization movement may well have Wall Street to thank. Forget Bootleggers and Baptists; Innovative Industrial Properties may have unintentionally coupled two of the strangest bedfellows yet in the cannabis experiment — legalization advocates and hedge fund managers. Now we'll see how well they work together.

*Sean Badgley is the founder and managing partner of C3 Law Group PLLC, which specializes in representing clients in cannabis compliance matters. C3 Law Group focuses on corporate compliance, transactional assistance and both civil and administrative litigation in the cannabis area. In addition to his work as an attorney, Sean is an advocate for cannabis legalization and is a paid speaker for pro-legalization causes. He can be reached at [sean@c3.legal](mailto:sean@c3.legal).*

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# Landlord-tenant considerations for marijuana businesses

## Compliance is key for all parties involved

By Jack Pawlicki



In the complex interplay between a landlord and tenant for a lease of an industrial building, the parties to the transaction engage in a lengthy but familiar set of negotiations. Most real estate legal practitioners experienced in leasing are familiar with the typical feints and thrusts made by the other party in an effort to secure the most advantageous lease agreement. For the most part, the negotiation between the parties is largely independent of the tenant's intended use of the property.

However, this overly simplified conclusion is turned on its head when leasing to a tenant that intends to engage in the legal production, manufacture or retail sale of marijuana. There are several unique concerns under Washington law that modern leases involving marijuana tenants must address.

### RISK OF FORFEITURE

Unlike other leases, a landlord who enters into a lease with a marijuana tenant faces a perilous risk — namely, the potential forfeiture of the landlord's real property. Like most states, Washington law provides the right for state authorities to seize real property used with the owners' knowledge in violation of the state's laws concerning controlled substances.

To minimize the risk of potential forfeiture, a landlord in Washington should, in addition to relying on written promises from the tenant to comply with all applicable laws, require the tenant to provide proof of compliance with marijuana laws. At a minimum, this would include copies of all requisite licenses and renewals. Further, a landlord should maintain those records to establish that the tenant complied with state law and that the landlord did not knowingly al-

low an operation that violated marijuana regulations. By doing this, a landlord will substantially reduce the risk of state authorities seizing property under state forfeiture laws.

### ACCESS TO THE PREMISES

Generally, a tenant cannot prevent a landlord from entering the leased premises. Most leases give landlords a right of entry to inspect and repair the building, and the parties typically negotiate the type of early notice required before such access is made. However, the landlord's right to enter the building may be limited by state marijuana regulations that are intended to trace the marijuana product from inception to sale and to prevent the product from being diverted outside the legal marketplace.

Washington Administrative Code 314-55-083 requires marijuana tenants to issue badges to all non-employee visitors (not including retail store customers) and maintain a log of visitors. The regulation does not provide an exception for a landlord that needs to access the building to address an emergency situation. Accordingly, while landlords should insist upon their right to enter the building as necessary, including without prior notice to address an emergency, they should also agree to comply with all state requirements concerning access so tenants do not lose their license.

### DISPOSAL OF MARIJUANA WASTE

In most buildings, one of the parties will contract with the local solid waste company to haul away the tenant's waste. Unless the tenant engages in processes involving chemicals, the standard solid waste hauler will be adequate for the removal of garbage. However, the disposal of waste from marijuana processing requires special consideration. Processing marijuana requires solvents, which may be hazardous substances that require special handling under federal

and state laws. Marijuana plant waste is not a dangerous substance (unless treated with solvents), but does require special handling before it can be disposed. Under WAC 314-55-097, tenants need to render the plant waste "unusable," which means grinding and mixing the plant waste with other materials so that the resulting mixture is at least 50% non-marijuana waste by volume. Compostable mixed waste will be disposed as compost feedstock or some other organic waste method, and non-compostable mixed waste may be disposed in a landfill or another disposal method, such as an incinerator. The landlord will need to ensure that the lease requires the tenant to comply with the applicable law concerning the disposal of marijuana waste, including securing the services of an appropriate solid waste hauler.

### CONCLUSION

This article provides a small sampling of the unique issues in a lease agreement with a marijuana tenant. Although Washington law serves as the basis of this article, other states have adopted similar regulations for cannabis operations. The concerns discussed will also be present in leases in other states, such as Colorado, Oregon and California. Each state's regulations will need to be considered for specific tailoring of the lease agreement to conform with that state's laws.

Landlords and tenants should seek the advice of local legal counsel familiar with the applicable state marijuana regulations to avoid any unexpected pitfalls and to identify unusual requirements not present in other lease transactions.

*Jack Pawlicki is a member in the Seattle office of Williams Kastner. His practice concentrates on commercial real estate transactions, particularly leasing, purchase and sales, financings, development and land use for various office, retail, industrial, mixed use and raw land projects. He specializes in complex retail, office, medical, industrial and ground leases in Oregon and Washington state. Williams Kastner publications should not be construed as legal advice. The communication does not create an attorney-client relationship with Williams Kastner or any of the firm's attorneys.*

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# Be prepared for California's environmental rules

## Regulated cannabis brings forth new water use guidelines

By Sarah Bell and Robert Hines



Some estimates indicate that up to 70% of marijuana used in the United States comes from California. With the recent passage of Proposition 64, California cannabis production is likely to increase, and the state's environmental regulators will have the significant responsibilities of overseeing the cultivation, manufacturing and distribution of cannabis products.

California became the first state to legalize medical marijuana with the passage of Prop 215 in 1996. Twenty years later, the Medical Marijuana Regulation and Safety Act (MMRSA) became law and sought to improve regulation of the medical marijuana industry. These reforms involved strengthening California's oversight and management of the environmental impacts of cannabis cultivation.

Prop 64, which legalizes the recreational use of marijuana, builds on the MMRSA's framework of environmental oversight. The two measures will result in regulations regarding water use, air and water quality, pesticides, chemicals, waste discharges, energy, wildlife and natural resources, all of which will impact cannabis businesses.

### ENVIRONMENTAL REGULATIONS

As part of the MMRSA, the State Water Resources Control Board (SWRCB), Department of Pesticide Regulation (DPR) and Department of Fish and Wildlife (DFW) are required to set limits on pesticide use, identify and register water diversions, and create a mechanism to protect water and wildlife. Prop 64 compels recreational operators to comply with the existing MMRSA environmental regulatory framework and builds on those requirements. Growers of marijuana for

recreational use will need to secure cultivation licenses. The licensing program will begin in 2018 and will be managed by the Bureau of Marijuana Control.

### WATER AND CANNABIS

In the next two years, recreational cannabis business owners should expect to see significant regulation of water use, water quality and waste discharges. Right now, these appear to be the primary environmental objectives of the new law and regulatory efforts. The MMRSA and Prop 64 will require growers to detail the legal sources of water for their operations. Licenses can be denied or later revoked if the cultivator fails to protect instream flow and water quality.

The Department of Food and Agriculture is required to work with the SWRCB and DFW to develop regulations to "ensure that individual and cumulative effects of water diversion and discharge associated with cultivation do not affect the instream flows needed for fish spawning, migration, and rearing, and the flows needed to maintain natural flow variability, and to otherwise protect fish, wildlife, fish and wildlife habitat, and water quality." Already, the SWRCB and certain regional water quality control boards (including the North Coast and Central Valley) have developed waste discharge regulations for cultivators.

The marijuana licensing authority will develop regulations requiring growers, manufacturers, distributors and retailers to comply with state and federal environmental laws, including the Clean Water Act and the Porter-Cologne Water Quality Control Act, among others. In addition to the water supply and quality regulations impacting growers, cannabis manufacturers and distributors will have to comply with California's storm water permit requirements (both as part of construction and later operations), waste discharge requirements and other water quality regulations.

### REGULATIONS AND ENFORCEMENT

As expected, cannabis cultivation, man-

ufacturing and distribution will be subject to the full panoply of state and local environmental laws and regulations, including the California Environmental Quality Act. Compliance with DFW requirements, including streambed alteration agreements, will also be required. All cannabis operators in the retail and distribution chain will need to be mindful of Proposition 65, which regulates substances that cause cancer; marijuana smoke was added to the Prop 65 list in 2009. Cannabis product manufacturers should also be mindful that certain food additives may also implicate Prop 65 warning requirements.

Business owners can expect inspections and — as the regulatory program develops — possible enforcement regarding situations of non-compliance. Statements by the North Coast Regional Water Quality Control Board, for example, suggest that a "progressive" enforcement approach will utilize limited resources efficiently and effectively. As such, enforcement activities could proceed very informally (for example, phone calls to alert growers/operators to certain issues) or more formal tactics such as the issuance of administrative civil liability complaints.

A multi-agency task force to address environmental harm from current cultivation operations will be made permanent. Also, we would expect that district attorneys' offices will become aware and possibly active from an environmental compliance and enforcement perspective, and could prosecute enforcement actions under a variety of laws.

### CONCLUSION

Marijuana growers, manufacturers, distributors and retailers should be aware that Prop 64 and the MMRSA have only strengthened environmental regulation of cannabis operations. We encourage cannabis businesses to address environmental issues as soon as possible to avoid scrutiny or enforcement from environmental regulators and citizen groups.

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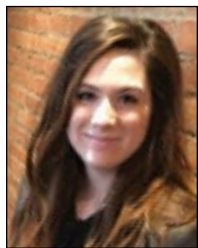




# Carbon footprint of cannabis industry raises concerns

## Pennsylvania regulations deter energy efficiency

By Whitney E. Snyder



Energy-intensive cultivation businesses have significantly impacted electricity use in states that have legalized cannabis. Some states worry that this drastic increase in electricity demand will negatively impact their infrastructure and carbon footprint while increasing costs. In response, some state and local governments have taken reactive measures including taxes, fees and regulation.

However, Pennsylvania, which legalized medical marijuana in 2016, requires an energy-intensive grow process. The commonwealth apparently has not yet considered the impacts of the industry's electricity consumption. To gain a competitive edge via lower ongoing operating costs, while calming concerns about increased energy use, growers should consider how to conserve energy and mitigate their carbon footprint from the outset of their business. Pennsylvania's energy industry provides a plethora of energy-efficient and renewable options growers can utilize.

### CARBON FOOTPRINT

Various research and reports conclude that nationally, marijuana growers used approximately 1.7% percent of America's electricity in 2015 at a cost of about \$6 billion.

Cannabis is one of the most energy-intensive agricultural commodities because growers produce plants indoors, either due to regulations, security and/or efficacy. Growers use artificial lighting that produces heat, and they must control atmosphere of the grow room using dehumidification, ventilation and air conditioning.

One estimate says that using traditional lighting (non-LED) with the commensurate atmosphere control, the energy to produce one marijuana plant equates to the energy needed to run seven refrigerators for the same amount of time. A 2013 study by BOTECH Analysis Corporation estimated it takes about 2,000 kilowatt-hours to grow

one pound of cannabis — nearly 300 times that required to produce aluminum, at 7 kilowatt-hours per pound.

A calculator available from the Oregon Department of Energy estimates that a grower with 2,000 square feet of total grow area with "high energy usage" may use approximately 400,000 kilowatt-hours per year. On the other end of the spectrum, the energy use for the same square footage of grow area with "low energy usage" is approximately one-tenth this amount.

With more states legalizing marijuana for medical and/or recreational use, the cultivation industry is booming with a correlated jump in energy use.

This surge in energy use has resulted in grid reliability issues in some areas. More-

**MARIJUANA  
GROWERS USED  
APPROXIMATELY  
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over, in states where electricity generation is highly dependent on fossil fuels — especially coal — growing marijuana has a huge carbon footprint and has significantly interfered with state goals to reduce their carbon footprint.

A 2015 article published by Bloomberg estimated that grow facilities in the 23 states where marijuana was legal in 2015 were responsible for greenhouse gas emissions almost equal to those of every car, home and business in New Hampshire. Colorado is an extreme example. In 2014, it was estimated that fewer than 1,200 licensed growers consumed about \$19.6 million dollars of electricity. In Denver, where 60% of electricity

is from coal-burning power plants, city officials said electricity use rose 1.2% in a year — 45% of which was due to marijuana cultivation. This surge in energy use has stymied Denver's policy to cut emissions from its power plants 38% by 2030 and overall power use by 7% in three years.

### REGULATORY AND UTILITY RESPONSES

It appears many states have not calculated the issues surrounding energy use prior to marijuana legalization, and thus state and municipal governments, agencies and electric utilities have been faced with a reactive approach to these issues.

Currently, states and municipalities impose various techniques to curb electricity use and emissions, including taxes, energy use fees or a requirement to either offset electricity use with renewable energy or pay an additional charge of 2 cents per kilowatt-hour. Denver's Department of Environmental Health has formed a Cannabis Sustainability Workgroup to develop best practices and guidelines for growers.

Electric utilities serving states with legal marijuana grow industries have, in some areas, been hesitant to implement measures such as time-of-use programs or funding to offset costs of energy efficient equipment.

These utilities have cited a gray area under federal law regarding the legality of growing marijuana as the reason they hesitate to engage growers in efficiency programs. For example, the Bonneville Power Administration, a federal non-profit electricity marketer in the Pacific Northwest, has rules that prohibit subsidizing cannabis operations. Thus, its utility clients who supply retail customers must tread carefully in serving marijuana growers and offering efficiency incentive programs.

The industry's electricity consumption is on regulators' radars nationwide. In 2015, the National Association of Regulatory Utility Commissioners (NARUC) hosted a panel addressing the industry and utility responses, energy efficiency options and regulator's roles in policy. One of the issues discussed was whether energy-efficiency funds should be made available to growers. A panelist also mentioned how utilities should handle costs associated with grid infrastructure upgrades when necessary to support a grow warehouse, cautioning against the use of surcharges and upfront payments in some circumstances.

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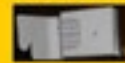
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## PENNSYLVANIA

In Act 16 of 2016, which legalized marijuana for medicinal use, the Pennsylvania Legislature did not specifically address or provide for the ability to regulate growers' use of electricity. To date, this issue does not appear to be a public consideration of the state's Legislature, regulatory agencies or electric utilities.

Pennsylvania remains dependent to some degree on coal for electricity generation, meaning a surge in energy use from marijuana cultivation may have a large carbon footprint. As of 2015, coal and nuclear both represented 36% of the state's electricity generation. Natural gas generation came in third at 24% and renewables at 2%. However, Pennsylvania has an abundance of natural gas, and new gas-fired electricity generation is increasing in the state.

The Pennsylvania Department of Health's regulations require grow facilities to be indoor, thereby mandating the operations be energy intensive. In addition to lights and environmental controls, growers are also required to install a system to monitor, record and regulate the grow atmosphere. Plus, Pennsylvania requires significant security and surveillance measures, necessitating additional electricity consumption.

Pennsylvania's electric distribution companies (commonly referred to as EDCs) face significant uncertainty due to a potentially increasing load. In December 2016, the Department of Health announced that in the first phase of permitting it will grant up to 12 permits across six regions of Pennsylvania, with two permits per region. These regions do not align with the service territories of the 11 EDCs, so some may have no grow operations in their territories, while others may have multiple.

Moreover, neither the Department of Health, nor Act 16, have placed a limit on the number of plants that can be grown or the square footage of a facility. Coupled with the lack of any requirement for applicants or the Department of Health to notify an EDC that a grow facility may be constructed in its territory, this means some EDCs may face an unknown and increasing load as early as 2018, with apparently no proactive plans to deal with this issue.

## BEING ENERGY SAVVY

Regardless of regulated or mandated reductions in energy consumption, growers should respond to the economic incentives of energy efficiency — the ability to gain a competitive advantage by reducing the largest input cost to a grow operation. Electricity can represent as much as 50% of a grower's overhead, which should be reason enough for many cultivators to seriously consider their power source and reducing consumption from the outset of their business. While product prices may adequately offset energy costs initially, as additional growers are permitted, competition will increase and the ability to remain profitable may rely on a grower's ability to manage energy costs.

Growers should also consider public perception. Efficient operations that use renewable energy can avoid "energy hog" labels and prevent being caught in the cross-fire between environmental regulation and activist groups.

Moreover, ensuring the EDC territory where the grower will be located is aware of its presence can avoid issues that will be newsworthy, such as causing grid reliability problems that may affect other customers in the area. Avoiding or mitigating these issues will reduce the chance of increased government regulations or fees related to electricity use in the cannabis industry.

## CONSIDERATIONS FOR GROWERS

Energy efficiency and use of renewable resources can be expensive. However, many efficiencies will pay off over time through reduced electricity bills, especially given that this is such a huge input to production. Government and utility incentives may be available to assist with some of the upfront costs if business entities are set up correctly from the start (which can best be achieved by seeking legal guidance in setting up business entities). In addition, there are myriad options and strategies a grower can use to decrease energy bills.

Savvy growers will attempt to gauge their energy costs before startup, research energy-efficient equipment and energy products available, and weigh their options to come up with a cost-effective energy strategy. In addition to Oregon's energy use calculator, various online sources provide information on use of

efficient equipment, such as LED bulbs. Denver's Cannabis Sustainability Workgroup also offers a guide to managing peak demand, which, in conjunction with certain energy products, can significantly reduce costs.

Regarding energy products, Pennsylvania allows customers to shop for their energy generation supplier (EGS). An EGS can offer substantially discounted rates for large-use customers. Along with EDCs, they also offer products such as time-of-use programs, green energy, smart meters and demand response.

Growers may also consider partnering with a solar or wind energy generator or obtaining their own solar or wind equipment to self-generate renewable energy. In Pennsylvania, growers could potentially sell surplus power back to its EDC (although many sources report that grower energy consumption will usually surpass grower installed renewable sources). There are also various entities that provide funding for renewable energy and energy efficiency projects.

Finally, growers should recognize their status as a large utility customer and maintain an open line of communication with their EDC and EGS.

In some scenarios, growers could face utility charges for grid infrastructure improvements. Utilities can make various changes to their tariffs and rates that can have wide-ranging effects on costs for certain classes of ratepayers. Ratepayers — especially large customers, who are not monitoring these changes and advocating for their rights to just and reasonable rates and service — face utility rates and practices that may ignore their interests. Large growers could be assisted by retaining regulatory counsel for these types of matters.

*Whitney E. Snyder helps businesses remain legally compliant as they plan, form and operate medical cannabis-related enterprises. She is an attorney at Cannabis Law PA ([cannabislawpa.com](http://cannabislawpa.com)), which helps clients navigate the medical marijuana licensing, permitting and regulatory compliance processes necessary to thrive. Snyder also advises on and litigates various energy and utility matters as an attorney with HMS ([hmslegal.com](http://hmslegal.com)), which provides legal services to energy, utility and other regulated businesses.*



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# P.O.V.

**P.O.V.** is a monthly section in Marijuana Venture showing images of operational cannabis businesses throughout the U.S. and Canada. To submit photos for consideration in future issues email: [Editor@marijuanaventure.com](mailto:Editor@marijuanaventure.com).



Raft Hollingsworth Jr. (far left) and his son, Raft Hollingsworth III (second from left) meet with Marijuana Venture staff members Brian Beckley and Aaron Greenreich while visiting the Marijuana Venture offices. Read more about The Hollingsworth Company in the Spring issue of SunGrower & Greenhouse.



The Fresh Toast celebrated its launch with a party in Seattle, bringing in plenty of local A-listers from the cannabis and business worlds. Clockwise from the top left, attendees included The Fresh Toast publisher J.J. McKay, Marijuana Venture publisher Greg James, Grasshopper Hub CTO Garrett Hampton, MJBA events manager Tiffany Brown, Grasshopper Hub CEO Heidi Arsenault and MJBA founder David Rheins.





# P.O.V.







Forever Green Illumination president Kathleen Sullivan attended the women's march in Washington, D.C. following the presidential inauguration, calling it a "magical experience" and describing the scene of thousands of women marching, protesting and rallying together: "When we arrived, we passed by the Washington Monument with a steady flood of people winding their way toward Independence Avenue, where the rally was held. Women of all ages were bundled up in their warm coats and pink hats, smiling, laughing and taking pictures. I saw a plethora of signs ranging from funny ("OK Ladies, Now Let's Get In Formation") to indignant ("I can't believe we still have to protest this") to sentimental ("A woman's place is in the Rebellion" with a picture of Princess Leia). As we walked closer to the rally, the crowd began to fill in the street surrounding the Jumbotron with a live feed of the speeches on a stage. We were close to the last Jumbotron and over half a mile away from the rally. As we listened to the speeches of great women like Gloria Steinem, Ashley Judd, Janet Mock, Janelle Monae, Angela Davis, and Alicia Keys (plus many more), the crowd cheered and booed and applauded with the speakers. The air was electric with excitement, indignation, anxiety and the intangible feeling of sisterhood. We were gathering as our foremothers had done generations before us, to speak our truth, to stand up against injustice, and to fight for our rights as human beings. When the rally finally turned into a march, though the crowd was enormous and disorganized, people peacefully moved into the streets without anger, even though there was constant jostling from the large crowd. As we marched, we raised our voices in chants about how black lives matter, how since it is my body it is my choice, how immigrant rights matter, how we were exercising our First Amendment right as members of this great democracy. The crowd spontaneously broke into song, and we all raised our voices in harmony to "Lean On Me." When we reached the White House lawn, the march steadily spilled onto the grass, continuing the protest even as snipers watched us from atop that tall white roof. People sang and laughed and danced, and roared their disapproval of the new White House occupant's statements of disparagement and insult. A fence across the White House lawn steadily filled with protest signs as we built our own wall for him to see, filled with love and jokes and insults and the unifying symbol of resistance that we will not sit quietly while he tries to strip us of our human rights." *Photos by Kathleen Sullivan.*



# P.O.V.



More than a million people reportedly participated in women's marches across the country on Jan. 20-22. Pictured are photos from the Seattle and Portland marches by David Divelbiss, Lisa Smith, Patrick Wagner and Sue Vorenberg.

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# P.O.V.



Clockwise from the top: High NY drew a packed crowd to its event in January; Michael Gorenstein, CEO of Cronos Group, a licensed producer in Canada that also distributes products to patients in Germany was the featured speaker; High NY founder Josh Weinstein, with the laptop, speaks with several attendees; Dana Levin-Robinson and Juliani Acosta hand out a few copies of Marijuana Venture (top).  
*Photos by [dmwfoto.com/courtesy](http://dmwfoto.com/courtesy) of High NY.*



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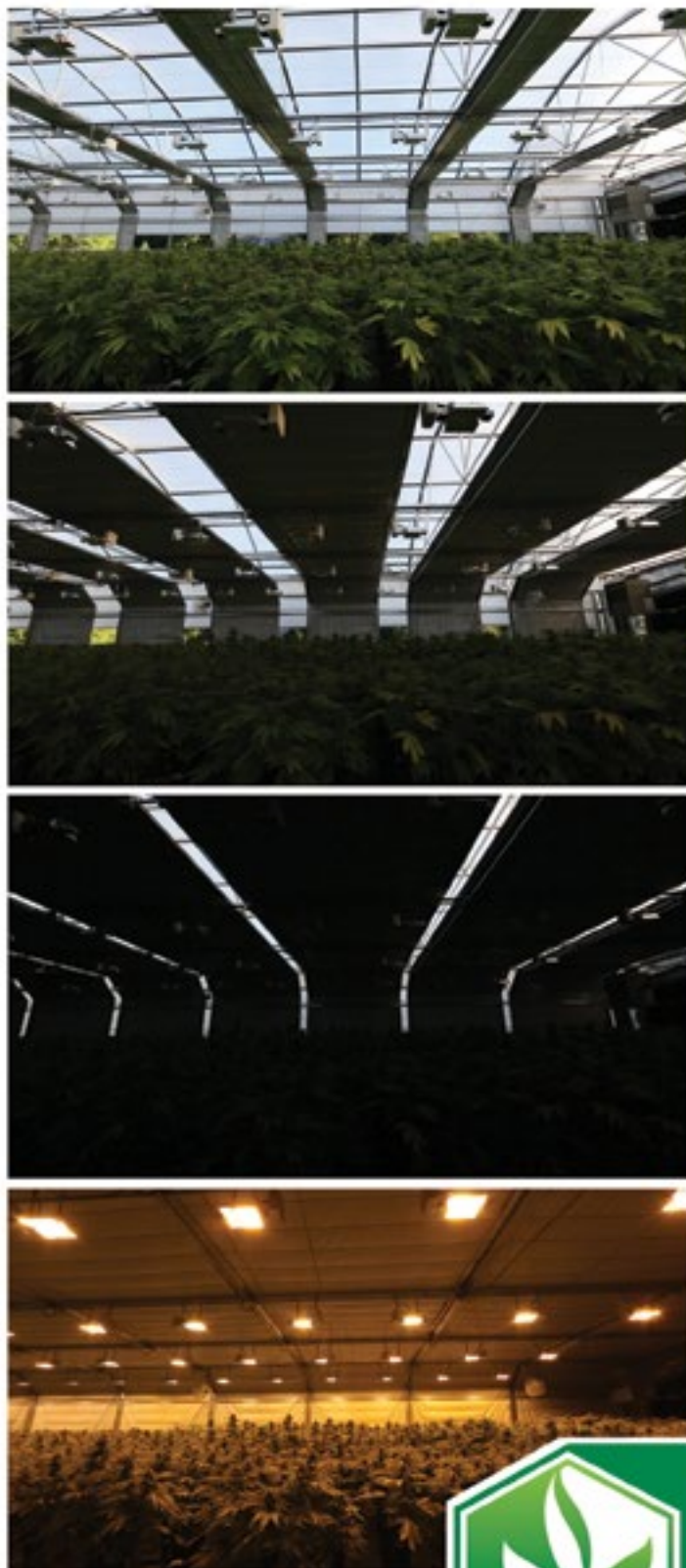
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