

Matt Martin

From: Robert H Blake III <RHBlake828@gmail.com>
Sent: Wednesday, February 10, 2016 9:18 AM
To: MAC; Board; Tammy Baney; Tony DeBone; Alan Unger; Nick Lelack; Matt Martin; Peter Gutowsky
Subject: MAC and Work Ahead - Thoughts from Bob Blake
Attachments: Letter to to MAC with cc to BOC Deschutes 02-10-2016.pdf; ATT00001.htm; Updated background + cannabis RHB 01-2016.pdf; ATT00002.htm

Dear MAC Members; Commissioners Baney, DeBone, and Unger; and CDD Leaders,

Please find attached a letter that I have written you in advance of your first meeting this evening. I also attached a short bio on myself. This is a personal, yet public, communication from someone who truly cares about Deschutes County, its citizens, and its future. It is time that we come together and enact meaningful regulation of cannabis land use. The MAC should provide important leadership and guidance to the county's leaders. I look forward to the forthright discussion of cannabis related land use regulation. There are many pathways to agreement, if there is a will to do so. I hope that you all possess this will.

Sincerely yours,

Bob Blake



Oregonians for Better Health, Inc.
66872 Lance Road, Bend, Oregon 97703

February 10, 2016

To: Marijuana Advisory Committee ("MAC")
Commissioners Baney, DeBone, and Unger
Peter Gutowsky, Nick LeLack, and Matt Martin , Community Development
Department ("CDD")

From: Bob Blake

Re: **Development of Land Use Regulations for Cannabis in Unincorporated
Deschutes County**

Dear MAC Members, Commissioners, and CDD leaders,

As a resident of Deschutes County, Oregon and a citizen of the United States, I am very concerned about the polarization and division over the subject of cannabis. I am a parent of young adults and a husband for now nearly thirty (30) years. I am a health care advisor to physicians and operate with my business partners a national anesthesia practice. Our West Coast office, which I manage, is in Portland, Oregon. I have attached a short bio on myself.

If you asked me as recently as three (3) years ago about cannabis, I would have a completely different perspective than I have now. In January 2013, I found that one of my closest friends had stage 4 breast cancer. Her name was Catherine "Cat" Dale. Cat subsequently died in June 2013. I did everything in my power to help cure Cat of her dreaded disease, including oncology and other physician referrals. One of our lead CRNA's (nurse anesthetists) saw me crying one night over Cat's plight and asked me if I knew anything about Rick Simpson oil ("RSO") or Phoenix Tears. I had no idea what our CRNA was talking about. She then asked me to "Google" the topics and get back with her, if I was interested. RSO, Phoenix Tears, etc. are terms for cannabis concentrate or extract oils.

I "Googled" and have spent thousands of hours researching the medicinal and therapeutic benefits of cannabis for the past three years. Malcolm Gladwell in his book, Outliers, says that one becomes quite confident and proficient after doing an activity for 10,000 hours or more (more or less 5 years of dedicated 40 hour work weeks). I may not be at the 10,000 hour mark, but I have come to know cannabis, the industry, and another side of Oregon through my research and experience in the cannabis industry.

Overall, the cannabis community is being led by upstanding individuals who seek to be lawful business owners and operators. We are good people. Yes some cannabis business owners are from out of state, but the vast majority are long time Oregon residents. Those individuals who demonstrated a lack of “good neighbor” policies in regard to sight, odor, and light pollution were likely one time operators that will NOT have the financing and wherewithal to meet OLCC licensing requirements. Most all complaints discussed in public hearings related to outdoor cannabis grows and greenhouses, not indoor growing. Indoor growing has been dominant in Deschutes County until the passage of Measure 91 and H.B. 3400. Then there are some cannabis operators who NEVER intend to be licensed with the OLCC or registered with the OHA. These cannabis operators want to be “off the grid” and are NOT representative of the overall cannabis community.

Key Cannabis Topics

When one gets to the core of cannabis discussion, the focus tends to be on a few topics:

- Access and use of cannabis by youth
- Education of citizens and youth
- Medical and therapeutic benefits

The first topic that we all can agree upon is the potential deleterious effects of cannabis use by our children, grandchildren, and youth. It is upon this topic that debate rages between supporters and detractors. From my new perspective, to “just say no” to cannabis in a community is the wrong approach. We have decriminalized cannabis in Oregon. Our youth will gain access to cannabis, as they do with alcohol and other substances, but they can do so more easily now. As a parent, I have wrestled with cannabis access and use for a long time. I railed at my two sons when they used cannabis through high school and college. They maintained really good grades despite cannabis use.

So what has changed in my perspective since Cat’s illness? First and foremost, medical cannabis has therapeutic value. Second, we do NOT want our jails to be filled with young and other people for cannabis use and distribution. It is a complete waste of taxpayer money and resources to imprison people for cannabis use and distribution. It is mainly for this reason that Oregonians voted in favor of Measure 91. So we must accept cannabis use and figure out ways to manage its lawful use and distribution.

As a community we do NOT want our youth to use cannabis. Cannabis is a powerful drug that should not be used in excess by healthy individuals. The same thinking goes for alcohol consumption. We must educate our youth and citizens about cannabis use as we do with tobacco and alcohol. Whatever we do in Deschutes County must begin with education of our citizens and youth toward cannabis use. To date, we have had far too little discussion and investment related to this topic.

I entered the cannabis industry primarily for one reason. I want to heal people. After research and now experience with patients in our Bend medical cannabis dispensary, I am firmly convinced that cannabis can slow, arrest, and likely cure virtually all diseases and

debilitating medical conditions through the proper dosing and use with other conjunctive therapies. I fully recognize that this statement is a very strong one to make. Over time, I hope to prove to you and others the veracity and efficacy of this statement.

Through our dispensary, I have observed stage 4 brain, breast, prostate, liver, bone, and pancreatic cancer go into complete remission with patients using high doses of cannabis concentrate oil. We all hopefully have read or watched on CNN and other media as to how CBD (one of 85+ cannabinoids in cannabis that is NOT psychoactive) oil has been used on children and others with seizure disorders with great success. It is only a matter of time before the federal government passes legislation, which will allow the medical community to pursue formal research on the therapeutic benefits of cannabis.

This research will take years to complete. When one begins to understand the micro-biology of how cannabis works in our bodies at the cellular level with cell signaling pathways, DNA transcription, protein synthesis, etc., many begin to call it a miracle. For me and physicians and Ph.D.'s with whom I speak, the explanation of how cannabis works is immensely complex. I encourage all of you to watch the documentary video about Raphael Mechoulam, Ph.D.:

<http://mechoulamthescientist.com>

Dr. Mechoulam is an Israeli researcher who has inspired other researchers from around the world to research cannabis. The video is a history of cannabis research since the early 1960's.

My Requests of the MAC and You As Individuals

I hope that you find my below requests to be reasonable and helpful to you in reaching unanimous recommendations for land use related to cannabis in unincorporated Deschutes County:

1. Some cannabis growers and operators have NOT been "good neighbors." Please do NOT hold the rest of us hostage due to these poor neighbors who likely were one time "bandit" operators.
2. Light, odor, and other pollution resulting from cannabis should be controlled. Too many people do NOT want to experience this pollution as neighbors. Unlike with dairy, pigs, and other farming, we can control this pollution with cannabis and MUST do so from my perspective. It is the right thing to do as a "good neighbor."
3. Recognize that Deschutes County is beautiful for its rural and unobstructed scenery. Greenhouses can be found all around the county, including in the front yard of Bend distillery at the corner of Pinehurst Road and Rte. 20. For the most part greenhouses are unsightly, so their placement and use MUST be carefully thought out. Indoor cannabis growing should NOT be a major concern.

4. I live on MUA property of 5 acres. I never wanted to operate a huge cannabis grow operation. I want to produce high quality, organic cannabis as medicine for patients from my farm in my indoor barn and secluded greenhouses. Develop reasonable regulations for cannabis on MUA and RR property and consider indoor growing differently from outdoor growing. Most all of the neighbor complaints regarding cannabis are related to outdoor and greenhouse growing. Develop different regulations for indoor cannabis growing. With indoor growing, cannabis CANNOT be seen, smelled, etc. given proper design and related regulations.
5. Fear is the enemy of all of us. Fear most often leads to argument and then anger possibly. Fear is unhealthy and causes stress. Fear is paralyzing. We do NOT need to fear cannabis and law suits resulting from cannabis by any of us. The cannabis community is NOT going to sue Deschutes County over reasonable regulations. Matt Cyrus, a leader of the Oregon Farm Bureau ("OFB"), is on the MAC and can provide valuable perspective as to how the OFB will address "right to farm" issues. In the case of cannabis in Deschutes County, leadership is the antidote to fear. If the MAC establishes strong leadership through learning and collaboration, we will develop successful cannabis regulation.
6. In the end, the MAC members should agree on what can be agreed upon at the outset. Then tackle the disagreements. Prohibition of cannabis is NOT leadership.
7. The situation with the Petsche's family house and the greenhouse of his cannabis grower neighbor MUST be addressed. The situation is complicated and represents an important conundrum for the MAC members to work through. The situation is an example of an intolerable situation for the Petsche family. Why both parties had 80 combined acres of land and chose to build their structures in the same location close to the property line, I do not know...? That being said, one solution may be for the cannabis community to help support financially re-location of the greenhouse as a sign of cooperation and understanding. This is an open thought...
8. The EFU and "right to farm" issues should NOT be a huge hurdle. Owners of EFU property possess a "right to farm" on their property. Oregon law is quite clear on this issue. Should we treat cannabis differently than other crops? I think so, but we MUST do so through discussion and agreement. We MUST accept that cannabis is viewed differently as a crop by 50% +/- of Deschutes County citizens. The cannabis community CANNOT expect to change perspectives over night.
9. Excessive water and electricity use, increase in crime, and other negative to cannabis issues that have been raised in public hearings and letters to the Bend Bulletin present arguments that are largely biased and inaccurate. Discuss concerns openly with respect and diffuse the arguments with facts, not opinions. Recognize that these issues are secondary to the MAC's mission to develop land use regulations for cannabis, although they are important.

10. Enforcement of good practices and neighbor policies related to cannabis need to be outlined and adopted. If the county is to assume additional costs related to cannabis enforcement, then the cannabis community should voluntarily underwrite the cost of this enforcement on a reasonable basis.

Overall, the cannabis community is providing 100's of new jobs in Deschutes County. Many of us want to lead medical cannabis research in the county with the support of the medical community, OSU, OHSU, and EDCO.

If the MAC and subsequently Commissioners Baney, DeBone, and Unger do NOT recommend and support reasonable regulations of cannabis land use, I fear that we are taking a major step backwards as a community. We are NOT going to turn Deschutes County into a cannabis centric community, any more than we did with hops and beer. Please exhibit the leadership and collaboration for which Deschutes County is well known in your deliberations and decision-making.

My contact information is below. Thank you.

Sincerely yours,

Robert H. Blake, III (Bob Blake)
President

rhblake828@gmail.com
(828) 310-9333 (cell)

RHB/

Attch.

Short Bio of Robert H. Blake, III

Bob Blake was raised in New York City where he attended Collegiate School before going on to Brown University (A.B. Economics). After Brown he worked for Chase Bank in operations management where he was responsible for functions supporting the bank's treasury department, including foreign exchange and money transfer. He then received his M.B.A. in finance from The Wharton School before pursuing a career in health care.

Bob has worked in health care since 1985 in a variety of capacities. Early on his focus was mostly in the area of health care finance and insurance. He helped develop a number of regional or statewide provider-sponsored HMOs or health insurance companies. He also helped write a health plan for the State of West Virginia, a health policy experience that he most enjoyed. Bob migrated toward developing and managing regional physician network organizations and practices. In 2000 he became the leader of a statewide gastroenterology network in North Carolina that led to reform of the state's certificate of need ("CON") legislation for GI endoscopy ambulatory surgery centers ("ASCs"). More than forty (40) new GI endoscopy ASCs were constructed in North Carolina under the revised legislation. The result was lower colorectal cancer screening costs and a migration of North Carolina from being in the lower quartile for colorectal cancer prevention to being one of the leading ranked states for colorectal cancer screening.

In 2008 Bob founded Innovative Anesthesia ("IA") with other business partners. IA is now a national anesthesia services company that has expanded into staffing and other related areas. He manages IA's west coast operations from his office in Portland, Oregon where he has resided since 2012.

After significant medical research and deliberation, Bob decided to enter the cannabis industry in 2014. His chief objective is to prove the medicinal value of cannabis in the treatment of diseases and debilitating medical conditions. He desires to merge his health care experience with medical cannabis in the pursuit of clinical research. Over time, he hopes to have insurance payers in Oregon cover cannabis as a covered medical expense.

Bob's investment in the Oregon cannabis industry includes multiple dispensaries; multiple cultivation farms; an extraction processor; a wholesale operation; and an emerging medical research operation with physician leadership. In the spring of 2015, Bob was appointed to serve on the Grow Sub-Committee of the Rules Advisory Committee ("RAC") of the Oregon Liquor Control Commission ("OLCC"). The OLCC is the state agency in charge of regulating the non-medical segment of the cannabis industry in Oregon, including cultivation, laboratory testing, processing, wholesaling, and retailing. Bob also has been appointed to be one of twelve (12) statewide members of the RAC for the Oregon Medical Marijuana Program ("OMMP"), which is part of the Oregon Health Authority ("OHA").

Bob has been married for 29 years and has three (3) children – a son who graduated from Syracuse University with a degree in finance/accounting; a son who is near completion of a commercial photography degree from Appalachian State University; and a daughter who is majoring in textile design at North Carolina State University. Bob's wife is an interior design professional. She also is a portrait painter and artist as well as a landscape designer.

Matt Martin

From: Shirley Morgan <shirley.morgan@aecinc.com>
Sent: Thursday, February 11, 2016 4:27 PM
To: MAC
Subject: Citizens for Public Safety, Quality of Life, Property Values Deschutes County -Marijuana Advisory Committee (MAC)
Attachments: Citizens for Public Safety, Quality of Life, Property Values Deschutes County MAC Shirley Morgan.pdf
Importance: High
Follow Up Flag: Follow up
Flag Status: Completed



TO: Marijuana Advisory Committee (MAC)

CC: Commissioners Unger, Debone, and Baney
Community Development: Nick LeLack and Matt Martin
mac@deschutes.org
<http://www.deschutes.org/cd/page/recreational-and-medical-marijuana-land-use-regulation>

Re: Marijuana Land Use Regulations in Unincorporated Deschutes County

Dear MAC Advisory Committee,

As a resident of Clackamas County with heritage in Deschutes and Crook County where I grew up and where all of my family resides, and as the founder of the Citizens for Public Safety, Quality of Life, and Property Values with a focus on the impacts of marijuana in our communities, as well as a past member of the Clackamas County Marijuana Task Force, I wanted to convey some very significant points that I believe will be necessary for this committee to keep in mind.

Over 79 cities and counties have banned recreational marijuana in their communities because marijuana is still a federally illegal drug, has never been approved by the FDA as medicine, and brings with it a lot of risks to our communities from butane hash oil explosions, armed burglaries and robberies because these facilities operate by cash only because they do not have access to the federal banking system.

Based on Deschutes County's current land use hearings, it was clear that rural farming residents object to allowing large recreational marijuana and medical marijuana grows to be in their communities next to their homes.

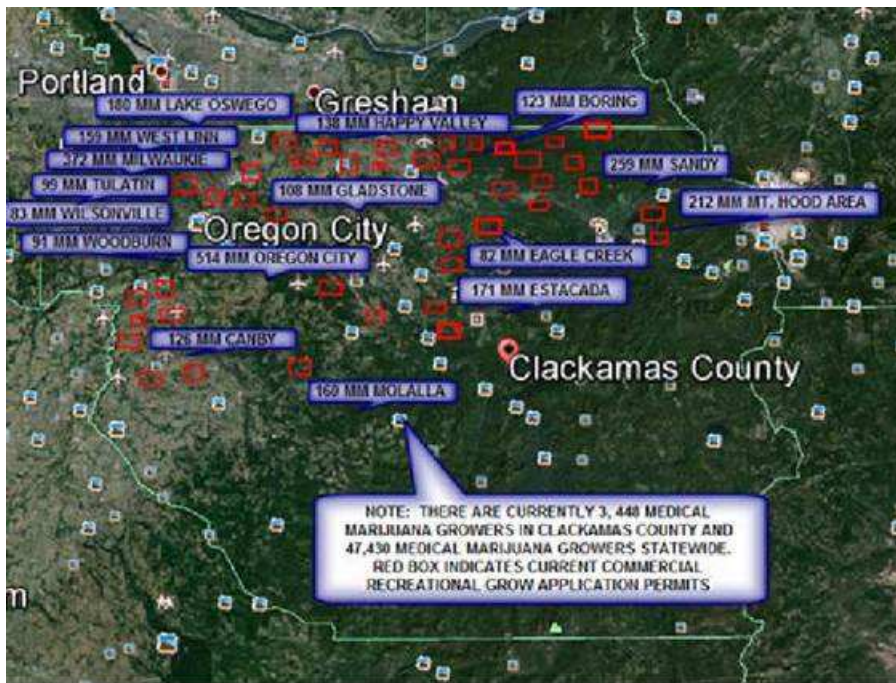
I would like to make a three key points:

1. Marijuana land use is not about youth access, educating citizens on the dangers of drug abuse, or the medical values of marijuana, that is to be debated at a different level. The MAC Advisory Committee is tasked with land use issues that will protect public safety, quality of life, and property values for all rural residential farmers in Deschutes County.
2. Often the marijuana industry notes that *some* marijuana growers and operators have not been good neighbors, but I would like to convey that in every case I am working on in the State, all are not good neighbors. They bully, harass, and disrespect the rules and regulations and are far from neighborly.
3. The marijuana industry also eludes to the tactic of saying that simple measures can be put into place to control light, odor, traffic, noise, and hours of operation, yet they neglect to tell you that all too often it doesn't make any different what regulations are put into place, many simply do not abide them and counties have limited resources for both law and code enforcement when trying deal with these complaints.
 - a. Advocates neglect to inform the general public that it is not possible to mitigate the number complaints from outdoor marijuana growing operations around the "smell", because you cannot have a 20,000 to 40,000 sq. ft. outdoor grow without the smell traveling for miles, whether it is in a greenhouse or not, because many growers install commercial fans that sound like small airplane engines, then they open the greenhouse doors and blast the smell for miles, to the point that neighbors cannot even sit out in their own yards without being impacted by the smell.
 - b. They also make points that greenhouses are located everywhere in our rural communities without obstructing scenery views, yet they neglect to tell you of the large 300' x 700' compounds that have been built surrounded by 6' high non see through fences with razor wire on the top that have blocked the entire views of neighbors on either side removing the once beautiful view that they have enjoyed for years, and devaluing their property values instantly. They also neglect to tell you that there are no requirements for the types of greenhouses that can be used nor are there any standards for building these greenhouses, so throughout Oregon we are seeing makeshift greenhouses and buildings that look like left over debris from someone's yard, again devaluing the property values of all surrounding neighbors.
 - c. Commercial and medical marijuana of 12 plants or more on parcels under 20 acres should not be allowed due to the impacts to public safety, quality of life, and property values. Many say make these grows indoor only and mitigate the odor through carbon filters, yet even if they are required to have indoor grows what will mitigate traffic, noise, the hours of operation and the loud parties and music that often go hand in hand with these types operations as many of the workers hired for these facilities are people who come from the criminal industry of marijuana and have had no background checks, therefore opening up the door for criminals to be brought into our communities.

Fear as the advocates call it have nothing to do with the facts. It is noted that one medical or commercial grow operation can impact as many as 12 to 22 homes around them.

The EFU and “right to farm” issue is more than a challenge when it comes to trying to define marijuana as an agricultural crop, it is simply one of the most unbelievable attempts to make something marijuana is not, an agricultural farm crop. Marijuana is a federally illegal drug and brings with it a lot of public safety, quality of life and property values risks to our entire communities. Advocates who try to convince the general public that there is no crime involved with marijuana is simply a lie, as in Multnomah County in the first 4 months of 2015, there were 4 fatal armed shootings at medical marijuana grow sites that were execution style. Lt. Gerhardt from Colorado noted in a recent article that, “the black market hasn't gone away, Gerhardt added, saying Colombia money has been funneled through the Colorado marijuana dispensary system. “What people don't understand is because the fact that marijuana is so profitable at such small amounts, we have a huge black market problem,” he said.”

I want to end by noting another significant fact, since Clackamas County has opened the door through land use regulations, over 49 commercial grow, processing, wholesaling and retail permit applications have been applied for in 30 days. With the current 3, 348 medical marijuana growers located in Clackamas County and the now 49 commercial applications and the 22 estimated number of neighboring property impacts that is a potential of over 74,734 residents who in many of these locations will have their public safety, quality of life, and property values impacted.



I congratulate the MAC advisory committee for their selection and for the opportunity to serve Deschutes County and would remind the committee that they are an advisory committee that helps to bring insights to an extremely difficult and most impactful topic that can potentially change the rural character of Deschutes County forever. This is not about getting to consensus because many on this committee believe in abiding by both federal and state laws, this is about careful, mindful, and thoughtful deliberation that will be presented to the Deschutes County Commissioners who take an oath to serve both Federal and State laws, and are tasked as the policy makers to do what's right. This

will be the most critical and life changing decision they will every make on behalf of families and rural residents in Deschutes County.

To serve both well in this case, I am recommending that the Deschutes County Commissioners send a referral to the voters and continue the moratorium opt out, as there will never be a decision more impactful to Deschutes County than this and that decision belongs to the voters.

Respectfully,

Shirley Morgan
P. O. Box 1351
Welches, Oregon 97067



<https://www.youtube.com/watch?v=uTLLUKsbyaY&feature=youtu.be>
www.protectorsociety.org

Public Safety

http://www.oregonlive.com/portland/index.ssf/2015/04/suspected_gunman_in_portland_d.html
<http://www.katu.com/news/local/Woman-dies-after-being-hit-by-driver-smoking-pot-in-Gresham-police-say-330922082.html>
<http://www.kgw.com/story/news/investigations/2015/06/01/oregon-hash-oil-explosions/28312933/>
https://www.youtube.com/watch?v=IFNe_KZhPZw
<http://www.cbsnews.com/news/man-fatally-shoots-himself-after-eating-5-marijuana-candies/>
<http://www.kptv.com/story/30437629/pacific-power-legal-indoor-pot-growing-operations-causing-power-outages#ixzz3qZoqvyJv>
http://www.oregonlive.com/portland/index.ssf/2015/12/driver_was_high_on_marijuana_w.html
<http://registerguard.com/rq/news/local/33860628-75/hash-oil-explosion-apparently-caused-veneta-area-house-fire-on-monday-fire-official-says.html.csp>
http://www.massive.com/politics/index.ssf/2016/02/six_takeaways_from_colorado_co.html

Quality of Life

http://www.oregonlive.com/marijuana/index.ssf/2015/10/marijuana_use_doubles_so_does.html#incart_river_home
<http://www.katu.com/news/local/Clackamas-County-residents-hope-to-stop-unwanted-pot-grows-334457271.html>

Property Values

<http://glocalpdx.com/news/will-marijuana-grow-sites-affect-neighboring-property-values>
<http://portlandtribune.com/cr/28-opinion/264469-136392-unwanted-marijuana-grows-we-can-smell-the-difference>

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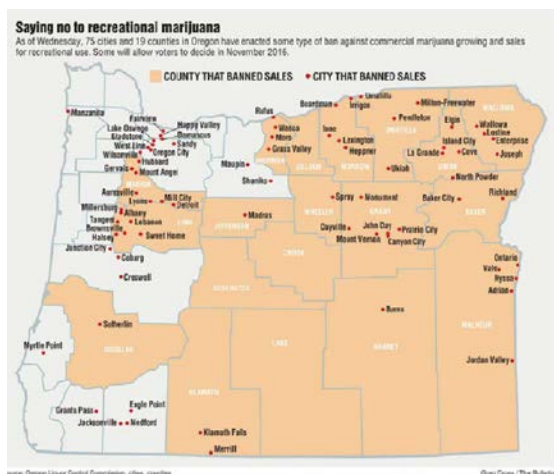
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It is important for the committee to understand that when measure 91 was passed, it was passed with a \$5.3 million dollar out-of-state funded campaign and the vote was passed on a tax and regulate scheme. Then the legislature in House Bill 3400 **redefined marijuana as an agricultural crop** which

means it can be grown in all exclusive farm use areas without any neighbor notification or conditional use permits under Oregon's "Right to Farm Act", which local jurisdictions have little control over.

- Though Deschutes County voted yes for marijuana legalization this is NOT what the voters voted for and I have talked with many citizens who did say yes to marijuana tax and regulate thinking they didn't have a problem with people wanting to smoke and grow marijuana in their own home, but they did not vote for large recreational commercial grows showing up next to their home, bringing suspicious characters, noise, smell, traffic and other intrusive bully behaviors. As well it was the urban voters who said yes to marijuana legalization while it was the rural voters who voted NO and are being most impacted.

So now what we are seeing throughout Oregon are large out-of-state investors flooding in and buying up large pieces of land in our exclusive farm use areas and setting up large compounds for the sole purpose of growing recreational marijuana.

- Another important point is that the Oregon Liquor License Commission began issuing recreational marijuana licenses on Jan. 4, 2016 to one licensee in any or all of these 4 categories, grower, processor, wholesaler and retailer.
- They are also issuing more than one license to one property, meaning that a land owner could have his own OLCC tiered marijuana growing program license of being allowed a 5000-10,000 sq. Ft. indoor grow and then a 20,000-40,000 sq. Ft. outdoor grow. That same property owner could then lease the rest of the land to other growers, therefore using the entire piece of property just to grow marijuana. Not something that any of our exclusive farm use farmers ever wanted or expected next to their homes.
- OLCC also does not have a maximum number of licenses in any of the 4 categories that will be issued, meaning that a rural residential property owner could be surrounded by local pot growers on different properties without any say about it. This is happening all over the State and as well in Washington and I view this as a complete takeover of our rural residential communities with a federally illegal drug.

Based on Deschutes County's current land use hearings, it was clear that rural farming residents object to allowing large recreational marijuana and medical marijuana grows to be in their communities next to their homes.

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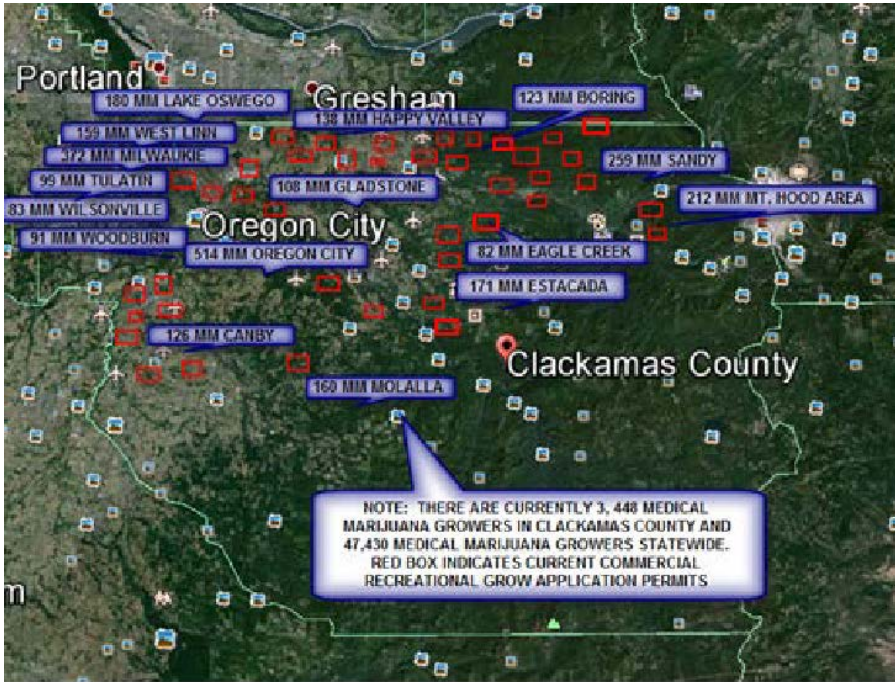
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I want to end by noting another significant fact, since Clackamas County has opened the door through land use regulations, over 49 commercial grow, processing, wholesaling, and retail permit applications have been applied for in 30 days. With the current 3,348 medical marijuana growers located in Clackamas County and the now 49 commercial applications and the 22 estimated number of

neighboring property impacts that is a potential of over 74,734 residents who in many of these locations will have their public safety, quality of life, and property values impacted.



I congratulate the MAC advisory committee for their selection and for the opportunity to serve Deschutes County and would remind the committee that they are an advisory committee that helps to bring insights to an extremely difficult and most impactful topic that can potentially change the rural character of Deschutes County forever. This is not about getting to consensus because many on this committee believe in abiding by both federal and state laws, this is about careful, mindful, and thoughtful deliberation that will be presented to the Deschutes County Commissioners who take an oath to serve both Federal and State laws, and are tasked as the policy makers to do what's right. This will be the most critical and life changing decision they will every make on behalf of families and rural residents in Deschutes County.

To serve both well in this case, I am recommending that the Deschutes County Commissioners send a referral to the voters and continue the moratorium opt out, as there will never be a decision more impactful to Deschutes County than this and that decision belongs to the voters.

Respectfully,

Shirley Morgan
P. O. Box 1351
Welches, Oregon 97067



<https://www.youtube.com/watch?v=uTLLUKsbyaY&feature=youtu.be>
www.protectorsociety.org

www.unwantedpotgrows.com

Public Safety

http://www.oregonlive.com/portland/index.ssf/2015/04/suspected_gunman_in_portland_d.html

<http://www.katu.com/news/local/Woman-dies-after-being-hit-by-driver-smoking-pot-in-Gresham-police-say-330922082.html>

<http://www.kgw.com/story/news/investigations/2015/06/01/oregon-hash-oil-explosions/28312933/>

https://www.youtube.com/watch?v=IFNe_KZhPZw

<http://www.cbsnews.com/news/man-fatally-shoots-himself-after-eating-5-marijuana-candies/>

<http://www.kptv.com/story/30437629/pacific-power-legal-indoor-pot-growing-operations-causing-power-outages#ixzz3qZoqvyJv>

http://www.oregonlive.com/portland/index.ssf/2015/12/driver_was_high_on_marijuana_w.html

<http://registerguard.com/rq/news/local/33860628-75/hash-oil-explosion-apparently-caused-veneta-area-house-fire-on-monday-fire-official-says.html.csp>

http://www.masslive.com/politics/index.ssf/2016/02/six_takeaways_from_colorado_co.html

Quality of Life

http://www.oregonlive.com/marijuana/index.ssf/2015/10/marijuana_use_doubles_so_does.html#incart_river_home

<http://www.katu.com/news/local/Clackamas-County-residents-hope-to-stop-unwanted-pot-grows-334457271.html>

Property Values

<http://glocalpdx.com/news/will-marijuana-grow-sites-affect-neighboring-property-values>

<http://portlandtribune.com/cr/28-opinion/264469-136392-unwanted-marijuana-grows-we-can-smell-the-difference>

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Matt Martin

From: Liz Lotochinski
Sent: Sunday, February 14, 2016 10:50 AM
To: Matt Martin
Subject: Report: Privateer Holdings - Diversion of MMJ in Oregon
Attachments: Diversion of Medical Marijuana in Oregon - Privateer Holdings 4-15-15.pdf

Hi Matt,
This report is very informative. Please share with MAC members and BOCC.

Liz Lotochinski



DIVERSION OF MEDICAL MARIJUANA IN OREGON

A PRIVATEER HOLDINGS WHITEPAPER

APRIL 15, 2015

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EXECUTIVE SUMMARY

Using data from law enforcement reports, economic statistics and peer-reviewed journals, Privateer Holdings estimated the total amount of marijuana produced each year under the Oregon Medical Marijuana Program (OMMP). The findings strongly suggest that more than 323,000 pounds of marijuana produced each year under the state program is likely diverted to the illegal market.

The analysis shows:

- **Oregon produces an excess of more than 323,000 pounds of medical marijuana each year.** By a conservative estimate, Oregon growers produce a total of approximately 408,000 pounds of medical marijuana each year. Using the consumption average of 1.5 grams per day, Oregon's medical marijuana patients should only require approximately 85,000 pounds per year.
- **It would be virtually impossible for Oregon medical marijuana patients to consume this oversupply.** A 2009 Rand study found the heaviest marijuana users consume approximately 1.2 grams per day. The Canadian government estimated daily consumption at 1.5 grams daily. Oregon's medical marijuana patients would have to consume 7.2 grams per day to use up all of the available supply produced for them.
- **Oregon produces enough medical marijuana to serve all of the medical marijuana patients in Arizona, Colorado, Oregon and Washington.** Using the consumption average of 1.5 grams per day, Oregon's annual production of approximately 408,000 pounds would meet the demand of medical marijuana patients in OR, CO, WA and AZ combined.¹
- **A \$904 million illicit market that is not regulated or taxed.** At a \$175 per ounce street value, as estimated by the Oregon State Legislative Revenue Office, the retail value of surplus medical marijuana produced in Oregon is \$904 million.
- **A robust illegal distribution network exists.** Oregon's informal marijuana economy already provides easy access to diverted medical cannabis. Continued diversion at this rate will lead to lost tax revenues that would otherwise be generated through a regulated recreational marketplace.
- **Comparable regulation of both recreational and medical markets will be essential.** Restructuring the medical marijuana production in Oregon with regulations ensuring that growers can meet *but not greatly exceed the needs* of marijuana patients will help foster the growth of a legitimate recreational market. Failing to regulate medical productions will ensure continued flow into the black market.

INTRODUCTION

The lack of oversight under current regulations creates an opportunity for registered growers to divert a significant amount of medical marijuana to the illicit market. At the end of 2014, there were 35,768 registered grow sites in Oregon. Presently, producers of medical marijuana are not required to report the amount of marijuana grown. If Oregon regulators do not implement stronger controls before the launch of the recreational market, the incentive increases for growers to divert medical marijuana to the recreational or illicit markets. This off-market diversion will result in lost tax revenue from the recreational marijuana program and more money for criminals and cartels operating illegally. It will also likely generate negative publicity for the Oregon state government.

¹ (Marijuana Policy Project. 2015)

SIZE OF OREGON MEDICAL MARKET

CULTIVATION OF MARIJUANA BY REGION

There are thirty-six counties in Oregon. According to the Oregon High Intensity Drug Trafficking Area (HIDTA) annual drug threat assessment, the majority of marijuana grown in the southwest part of the state is cultivated outdoors.² Law enforcement statistics from 2013 on marijuana eradication show nearly 95% of all seizures from outdoor grow sites occurred in Douglas, Lane, Jackson and Josephine Counties.³

These counties hold special significance for the production of medical marijuana in Oregon for several reasons. First, the climate and geography of southern Oregon are all ideally suited to the outdoor cultivation of marijuana. Second, all of these counties are located on state borders or along the Interstate-5 corridor (a major drug trafficking route).⁴ Third, these sparsely populated counties have limited resources available to law enforcement with which to regulate a large number of small scale grows.

METHODOLOGY

In order to calculate the amount of marijuana produced under the OMMP, several factors were required. First, the number of plants used to supply medical marijuana was fixed using the official limit of six plants per patient. Second, the differences from indoor versus outdoor yields meant that the proportion of indoor to outdoor operations had to be determined. Third, a range of outdoor production yields were compared in order to accurately capture the total production.

The Oregon Health Authority snapshot of registered medical marijuana grow sites and Oregon HIDTA production figures were used to generate an estimate of the proportions of marijuana cultivated from outdoor and indoor grows each year.⁵ The Oregon HIDTA assessment notes that almost all of the operations in the southern counties are outdoor grows. There may be a number of indoor grows also operating in the southern counties. However, it is safe to assume that this figure is offset by outdoor grows in the 32 other counties. Furthermore, outdoor cultivation is less costly and involves simpler production methods; consequently, the true proportion of grow sites located outdoors in Oregon may actually exceed 50%.

Of the 35,768 registered grow sites in Oregon, 11,277 are located within the 4 southern counties highlighted in Table 6 (see appendix). Therefore, an initial assumption was made that all 11,277 of these grow sites are outdoor sites. This proportion was used to estimate that 32% of grow sites in Oregon are conducted outdoors and the remaining 68% grow sites operate indoors. To ensure a conservative estimate, the same method was applied three more times using only Lane (the county with the most registered grow sites), the top three other counties by number of grow sites (Douglas, Jackson and Josephine), and the top three counties overall (Jackson, Josephine and Lane). The proportions of outdoor cultivation under these scenarios are 12%, 20% and 28% respectively.

² (Oregon HIDTA, 2014)

³ (Oregon HIDTA, 2014)

⁴ (Oregon HIDTA, 2014)

⁵ (Oregon Health Authority, 2015)

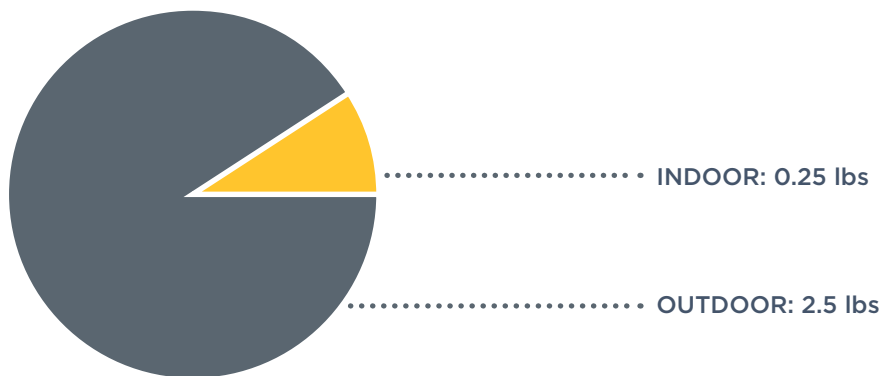
EXPECTED PRODUCTION: INDOOR VS. OUTDOOR CULTIVATION

Individual plant yields depend on many factors, such as plant density, nutrient availability, light availability and genetic predisposition. As noted by the Oregon HIDTA assessment, outdoor cultivation generally results in large, high-yielding plants. The U.S. Drug Enforcement Administration (DEA) has established a presumption that every marijuana plant yields one pound of useable marijuana.⁶ However, the exceptional climate in southern Oregon significantly improves outdoor yield. A recent HIDTA paper anecdotally reported yields in southern Oregon ranging from 6 to 20 lbs per plant with an average yield of 10 lbs of usable, dried, marijuana per plant.⁷ We believe that 10 lbs per plant represents the higher limit of average yield for the typical outdoor grow. RAND suggests that outdoor grows generally yield approximately 2.5 lbs of useable, dried product per plant. Though we believe that 2.5 lbs per plant is conservative for Oregon, we are comfortable using this yield as the baseline for our report.⁸ Due to the seasonal growth cycle of cannabis, outdoor production sites in southern Oregon can expect a single harvest per year. Conversely, indoor cultivation of marijuana requires smaller plants with lower yields but can be advantageous due to the increased number of annual harvests and the degree to which the growing environment can be controlled. A recent study by the University of Washington on indoor cannabis production found that the typical yield from a single plant grown indoors is about one ounce, and the indoor grow site can expect four harvests per year. Claims of indoor yields above 16 ounces per plant and outdoor yields above three pounds per plant are not uncommon.^{9,10} To calculate the medical market supply we chose to use the more conservative figure of one ounce to estimate per plant production for indoor cultivation.

CALCULATIONS

The legal limit of six marijuana plants per patient and a total patient population of 70,229 equates to a total of 421,374 legally allowed plants. Note that the per plant yields of outdoor plants are at least 10 times greater than indoor plants (Figure 1). Table 5 shows that changing the yields of indoor plants does not have a significant impact on the total production. Therefore, the most relevant variables that impact total production are the yield of outdoor plants and proportion of all plants which are cultivated outdoors.

**FIGURE 1:
COMPARISON OF ANNUAL, SINGLE PLANT YIELDS BY CULTIVATION METHOD**



6 (Oregon HIDTA, 2014)

7 (Oregon HIDTA, 2014)

8 (Caulkins, RAND, 2010)

9 (Vanhove, Van Damme, & Meert, 2011)

10 (Crombie, 2015)

The following equation is used to determine the annual production of medical marijuana in Oregon:

$$\begin{aligned}
 & (421,374 \text{ PLANTS}) \times (\text{PROPORTION OF OUTDOOR GROWS}) \times (\text{OUTDOOR YIELD PER PLANT}) \\
 + & (1 - \text{PROPORTION OF OUTDOOR GROWS}) \times (0.0625 \text{ lbs PER INDOOR PLANT}) \times (4 \text{ INDOOR HARVESTS PER YEAR}) \\
 = & \text{TOTAL ANNUAL PRODUCTION}
 \end{aligned}$$

TABLE 1: ESTIMATED ANNUAL PRODUCTION OF MEDICAL MARIJUANA

% OUTDOOR CULTIVATION	OUTDOOR YIELDS (LBS./PLANT)			
	1	2.5	5	10
12%	143,267	219,114	345,527	598,351
20%	168,550	294,962	505,649	927,023
25%	184,351	342,366	605,725	1,132,443
28%	192,427	366,593	656,871	1,237,427
30%	200,153	389,771	705,801	1,337,862
32%	206,473	408,733	745,832	1,420,030
35%	215,954	437,176	805,878	1,543,282
40%	231,756	484,580	905,954	1,748,702
45%	247,557	531,985	1,006,030	1,954,122
50%	263,359	579,389	1,106,107	2,159,542

As shown in Table 1, from an average outdoor yield of 2.5 pounds per plant the expected total annual production of medical marijuana in Oregon is 408,733 pounds. This calculation supposes that all cultivators are growing the maximum allowable plants under OMMP regulations and that none of the growers are cultivating additional, illegal plants.

The absence of a tracking system to monitor legal production prevents the collection of vital information regarding individual grow sites. If, for instance, the proportion of grow sites operating outdoors actually exceeds 50%, the actual production may exceed 579,000 pounds per year. Note that this model pertains only to legally registered grow sites. Illicit production of marijuana by unregistered, illicit market producers is not included in this assessment.

RESULTS

Registered grow sites in Oregon appear to be producing a considerable amount of marijuana beyond what is necessary to serve the population of medical patients across the state. The perishable nature of cannabis suggests that cannabis which is not used or preserved will spoil. We expect the “shelf life” of marijuana is, at most, one year. Oregon medical marijuana laws set the limit on possession for a medical marijuana patient at 24 ounces. In order to consume 408,000 pounds of legal, medical marijuana produced in the state of Oregon in a single year, each of the 70,229 medical patients must consume an average of 93.12 ounces each year. This equates to a daily average consumption of 7.2 grams per person per day.

**TABLE 2:
INDIVIDUAL ANNUAL CONSUMPTION (IN OUNCES) REQUIRED TO ABSORB ALL PRODUCTION**

% OUTDOOR CULTIVATION	OUTDOOR YIELDS (LBS./PLANT)			
	1	2.5	5	10
12%	32.64	49.92	78.72	136.32
20%	38.40	67.20	115.20	211.20
25%	42.00	78.00	138.00	258.00
28%	43.84	83.52	149.65	281.92
30%	45.60	88.80	160.80	304.80
32%	47.04	93.12	169.92	323.52
35%	49.20	99.60	183.60	351.60
40%	52.80	110.40	206.40	398.40
45%	56.40	121.20	229.20	445.20
50%	60.00	132.00	252.00	492.00

Since the individual sales and consumption rates of marijuana are often measured in grams, the following table shows the required daily consumption for Oregon medical marijuana patients in grams. The figures in Table 3 - Individual Daily Consumption (in grams) Required to Absorb All Production simplify the comparison of Oregon medical marijuana consumption to that of other medical programs, as described below.

**TABLE 3:
INDIVIDUAL DAILY CONSUMPTION (IN GRAMS) REQUIRED TO ABSORB ALL PRODUCTION**

% OUTDOOR CULTIVATION	OUTDOOR YIELDS (LBS./PLANT)			
	1	2.5	5	10
12%	2.54	3.88	6.11	10.59
20%	2.98	5.22	8.95	16.40
25%	3.26	6.06	10.72	20.04
28%	3.41	6.49	11.62	21.90
30%	3.54	6.90	12.49	23.67
32%	3.65	7.23	13.20	25.13
35%	3.82	7.74	14.26	27.31
40%	4.10	8.57	16.03	30.94
45%	4.38	9.41	17.80	34.58
50%	4.66	10.25	19.57	38.21

CONSUMPTION OF MARIJUANA

GENERAL CONSUMPTION

A 2009 study by the RAND Corporation found that the consumption of marijuana among the heaviest users is approximately 1.2 grams per day +/- 0.4 grams.¹¹

COLORADO

Annual reports from the Colorado Marijuana Enforcement Division show medical sales in 2014 of 109,578 lbs. of marijuana flower, 1,964,917 units of edibles and 412,000 units of non-edible marijuana extracts.¹² While individual plants and strains vary in potency, chemical analysis of samples from U.S. DEA seizures found the average tetrahydrocannabinol (THC) content of marijuana to be 12.5%.¹³

Using the regulated serving size of 100 mg THC for each unit of edible marijuana products and an average of 12.5% THC content in dried flower, it is estimated that there is an equivalent of 2.5 grams of flower per unit of edible. Similarly, typical cannabis concentrates contain 60% THC by weight. With an average flower potency of 12.5% THC, a gram of non-edible concentrate is equivalent to 5 grams of dried flower. From these equivalents, the total consumption of medical marijuana in Colorado in 2014 at approximately 128,560 lbs. The number of medical marijuana patients in Colorado as of December 31, 2014 was 115,467.¹⁴ On average, these individuals consumed 505 grams of marijuana in 2014 which equates to 1.4 grams per person per day.

CANADA

The nationalized Canadian Marijuana for Medical Purposes (MMPR) program serves approximately 40,000 patients throughout the country. Prior to its implementation, the MMPR performed extensive cost-benefit analyses to determine the daily consumption of individual patients. It was determined that the average daily consumption of a medical marijuana patient is approximately 1.5 grams per day.¹⁵

Data collected from at least one of the licensed marijuana production facilities in Canada supports this estimate. In 2014, the average consumption of medical marijuana by Tilray's 3,500 registered patients in was 1.2 grams per day.

COMPARISON OF MEDICAL MARIJUANA PROGRAMS

Compared to the medical marijuana programs in Colorado and Canada, the OMMP is far less tightly regulated. Both the Colorado and Canadian programs require extensive seed-to-sale tracking. They rely on inventory tracking systems and sales tracking systems to ensure strict adherence to each program. These tracking systems

¹¹ (Kilmer & Pacula, 2009)

¹² (Enforcement Division - Marijuana, 2015)

¹³ (Oregon HIDTA, 2014)

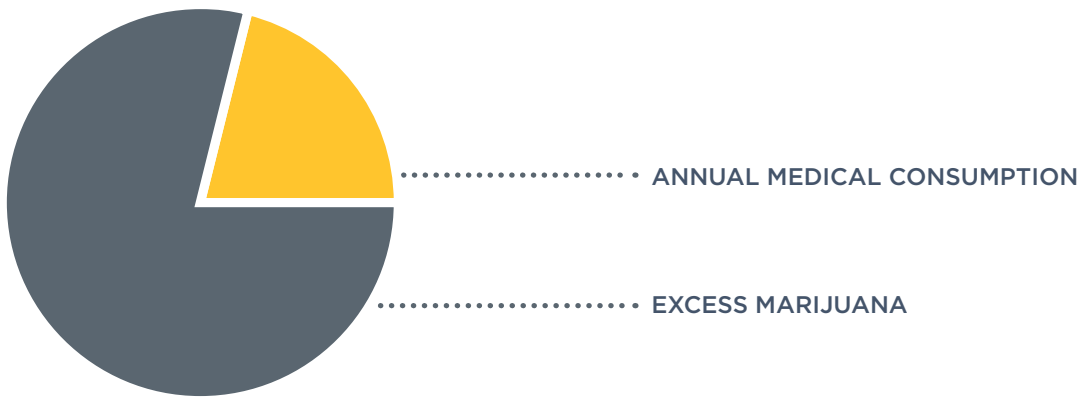
¹⁴ (Colorado Department of Public Health and Environment, 2015)

¹⁵ (Health Canada, 2013)

do not exist in Oregon under the OMMP. Additionally, the lack of a state sales tax means that accurate figures regarding the consumption of medical marijuana are nonexistent.

The qualifying conditions to receive medical marijuana are generally the same across all programs.¹⁶ Therefore, we believe that the actual consumption of a medical marijuana patient, regardless of program or location, is approximately 1.5 grams per day. Therefore, the implied annual medical marijuana consumption for the 70,229 registered Oregonian patients is 84,769 pounds.

FIGURE 2: ANNUAL MEDICAL CONSUMPTION VS. ESTIMATED PRODUCTION



To put this into perspective, using the generally accepted consumption rate of 1.5 grams per day, Oregon’s annual production of 408,000 pounds of medical marijuana is enough to supply all of the medical patients in Arizona, Colorado, Oregon and Washington, which represent roughly one-third of existing U.S. medical marijuana patients.¹⁷

**TABLE 4:
TOTAL NUMBER OF MEDICAL MARIJUANA PATIENTS SUPPORTED AT 1.5 GRAMS PER PERSON PER DAY**

% OUTDOOR CULTIVATION	OUTDOOR YIELDS (LBS./PLANT)			
	1	2.5	5	10
12%	118,694	181,532	286,261	495,721
20%	139,640	244,370	418,919	768,018
25%	152,731	283,643	501,830	938,204
28%	159,422	303,715	544,204	1,025,182
30%	165,822	322,917	584,741	1,108,390
32%	171,059	338,626	617,906	1,176,465
35%	178,913	362,191	667,652	1,278,576
40%	192,005	401,464	750,564	1,448,762
45%	205,096	440,738	833,475	1,618,948
50%	218,187	480,012	916,386	1,789,134

¹⁶ Appendix (Table 8)

¹⁷ (The Network for Public Health Law, 2014)

IMPLICATIONS

The assumptions used to estimate the total production of medical marijuana in Oregon have probably understated the actual amount of legal marijuana grown in Oregon. However, in order to provide a lower bound to this estimate, a “worst case” production scenario was created. In the following scenario, the per-plant yield from outdoor cultivation was fixed at a half-pound and the yield of indoor plants is shown at intervals between a half-ounce and 1.25 ounces.

TABLE 5: “WORST CASE” PRODUCTION ESTIMATE OF MEDICAL MARIJUANA (IN LBS.)

% OUTDOOR CULTIVATION	INDOOR YIELDS (LBS./PLANT)			
	0.03125	0.05	0.0625	0.075
12%	71,634	99,444	117,985	136,525
20%	84,275	109,557	126,412	143,267
25%	92,176	115,878	131,679	147,481
28%	96,213	119,108	134,371	149,634
30%	100,076	122,198	136,947	151,695
32%	103,237	124,727	139,053	153,380
35%	107,977	128,519	142,214	155,908
40%	115,878	134,840	147,481	160,122
45%	123,779	141,160	152,748	164,336
50%	131,679	147,481	158,015	168,550

The only scenario in which consumption of marijuana is greater than the production is the least likely, worst case scenario. In this case, the estimated yields for indoor and outdoor production are fixed at 50% of their lowest estimated levels and only 12% of grow sites are operated outdoors. In all other scenarios, there is a surplus of medical marijuana that is likely not being consumed by patients under the OMMP.

This surplus is either being destroyed, which is unlikely, or sold on the illicit market. A 2014 study from the Oregon State University School of Public Policy found that nearly 18% of non-OMMP marijuana users obtain cannabis directly from medical growers and another 30% cite the illicit market as their source of marijuana.¹⁸ Data gathered by the U.S. Department of Justice’s El Paso Intelligence Center from 2008 to 2013 shows law enforcement in more than 30 states reported 615 seizures totaling 36,785 pounds of marijuana that had originated in Oregon (an average of 6,130 pounds per year).¹⁹ The street value of these seizures is estimated to be in excess of \$88 million. Also, in another report from 2013, in-state seizures of marijuana on Oregon highways was 1,300 pounds.²⁰

Drug seizures by law enforcement likely represent only a small fraction of cannabis leaving the state. It is not possible to know the true amount of marijuana that is trafficked out of Oregon. The illicit nature of drug trafficking precludes the collection of verifiable data. However, if the seizures represent even 10% of surplus medical marijuana diverted out of state (a generously high estimate), then the total amount of cannabis directed out of state is roughly 61,300 pounds each year. These assumptions are broad and likely understate the true supply of marijuana. Their purpose is to illustrate the vast quantity of marijuana that is likely diverted from the legal medical market to the illicit market.

¹⁸ (Crawford, 2014)

¹⁹ (Oregon HIDTA, 2014)

²⁰ (Oregon HIDTA, 2014)

EMERGENCE OF A RECREATIONAL MARKET

The original medical marijuana laws in Colorado paralleled the OMMP in that neither of the two programs created a legal framework for the dispensation of medical marijuana. In response to a 2009 case against a marijuana grower, the state created a clear licensing scheme which established standards for cultivation and distribution of marijuana.²¹ The passage of HB 3460 in Oregon creates a similar structure for establishing and regulating marijuana dispensaries. However, it does not establish rules governing the production of medical marijuana.

The emergence of recreational marijuana markets in tandem with established medical marijuana programs has had mixed outcomes. The case study of the state of Colorado demonstrates the effects of introducing a legal market in a state with a preexisting medical marijuana supply. To date, Colorado is the most successful example of new, recreational market. The inaugural year of recreational sales in 2014 generated more than \$60 million in tax revenue for the state.

Washington State's creation of a legal recreational market in 2014 stands in contrast to the Colorado experience. The existing medical marijuana laws in Washington did not establish a patient registry or regulate dispensaries.²² Consequently, the abundant supply of illicit medical marijuana inhibited rapid adoption of the recreational market. In the six months of operations in 2014, Washington State received only \$16.4 million in recreational marijuana tax revenue despite the higher tax rates and larger population than Colorado. In the same period Colorado sales generated more than \$30 million.^{23,24}

Summary statistics from the 2011 NSDUH survey on marijuana use show that roughly 13% of the entire adult population in the U.S. consumes or has consumed marijuana in the past year.²⁵ To show the impact of legal, recreational sales on the overall market, the Colorado sales of medical marijuana and recreational marijuana were compared.

As expected, the increased availability for recreational users precipitated a drop in relative market of share of medical marijuana. The volume of medical marijuana as a percent of the total sales volume decreases from 81% in February 2014 to 58% in December 2014.

21 (Marijuana Policy Project, 2013)

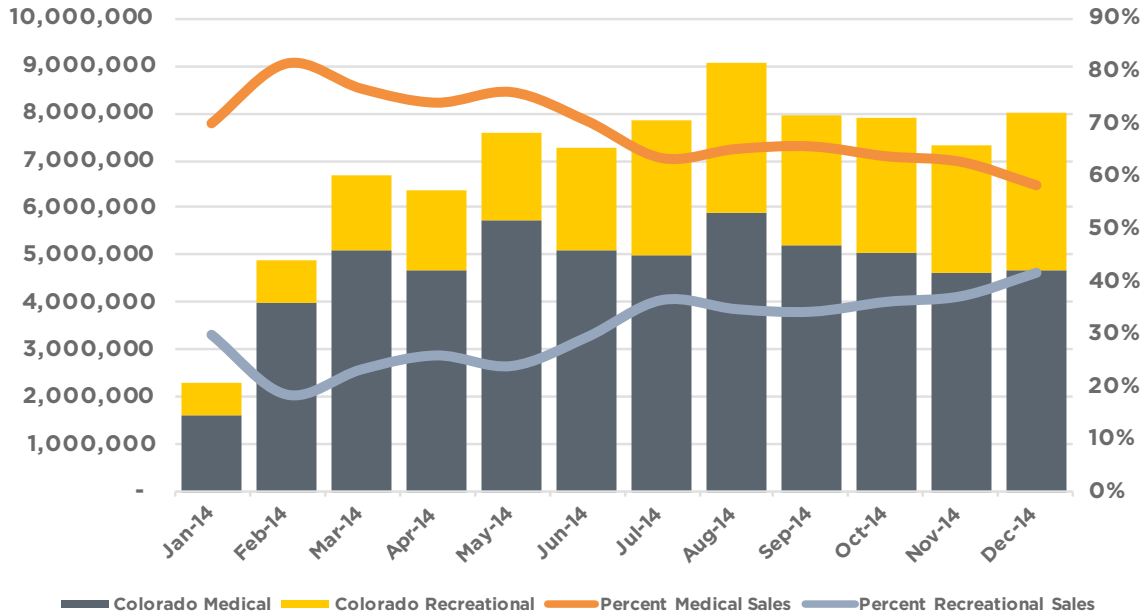
22 (Marijuana Policy Project, 2013)

23 (Washington State Liquor Control Board, 2015)

24 (Enforcement Division - Marijuana, 2015)

25 (The Marijuana Policy Group, 2015)

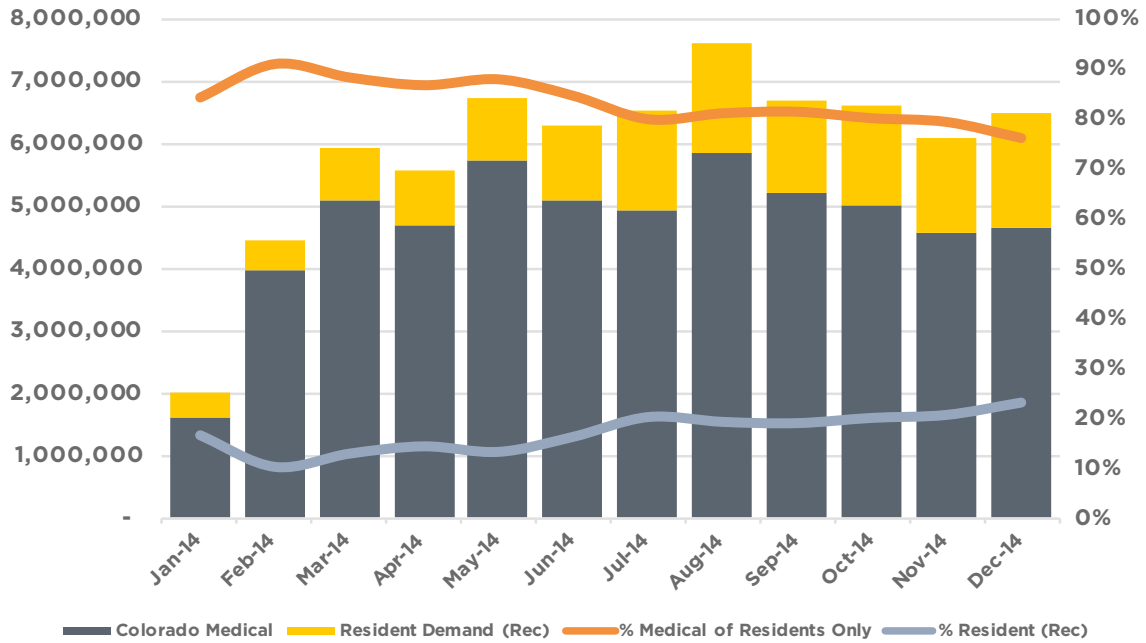
COLORADO MEDICAL VS. RECREATIONAL MARKET



This change in market share was initially believed to be caused by the uptick in marijuana related tourism to the state. In order to account for visitor demand, estimated visitor consumption was removed from recreational sales.²⁶ After adjusting for non-residents, the medical sales as a percent of the total resident market fell from 91% to 76% over the same period. This shows that the increasing market share of recreational marijuana was a direct result of non-medical purchases by state residents.

²⁶ (The Marijuana Policy Group, 2015)

COLORADO MEDICAL VS. RECREATIONAL MARKET—VISITOR ADJUSTED



Colorado’s tight regulations on medical production helped to ensure that shrinking market demand for medical marijuana did not allow medical producers to supplement sales with illicit market distribution. Consequently, these controls supported the growth of the legal, recreational market by minimizing the impact of excess medical marijuana.

CONSEQUENCES OF UNREGULATED MEDICAL MARIJUANA PRODUCTION

In 2013, the Colorado Marijuana Enforcement Division employed 35 people to manage the 493 medical marijuana centers, 729 optional premises cultivations, and 149 medical marijuana-infused products manufacturers.²⁷ Unlike the Colorado medical marijuana program, the Oregon program does not impose restrictions on production limits or inventory and it does not use tracking systems to measure the quantity of medical marijuana that is produced and sold to patients. The OMMP maintains records of registered patients, caregivers and growers. Meeting minutes from the Advisory Committee on Medical Marijuana show as of December 2014, the OMMP had 24 employees overseeing the registration of 70,128 patients, 35,071 caregivers and 47,187 unique growers.²⁸ It is clear that state resources directed to administering the OMMP are far less concentrated than their counterparts in Colorado.

The direct, negative impacts of the lack of regulation of medical marijuana are threefold. First, the availability of surplus medical cannabis threatens the viability of Oregon's recreational market and will create an environment in which legal, recreational businesses are unsustainable. The robust distribution network of Oregon's informal marijuana economy already provides easy access to diverted medical cannabis.²⁹ Continued diversion will lead to lost tax revenue that would otherwise be generated by the recreational market. The official market estimate from the Oregon State Legislative Revenue Office is an annual recreational demand of 1.86 million ounces, or 116,250 pounds.³⁰ If this demand is met with illicit market medical marijuana, the state could lose \$26 million in recreational tax revenue.

The second negative impact of unregulated medical marijuana production is the damage to the environment caused by the multitude of small scale, less professional operations. Irrigation of indoor grow operations with large numbers of plants often produce toxic environments where black mold proliferates and creates serious health hazards.³¹ Outdoor operations divert water from natural sources to irrigate crops. The runoff created by these outdoor grow operations creates lasting damage to the surrounding environment.³²

The third negative impact of unregulated medical production is the incentive it creates for criminal activity. Due to the restrictions on banking, many of these independent operations maintain significant cash on hand which makes them targets for theft and violence.³³ Furthermore, the vast quantity of surplus marijuana produced in Oregon which is trafficked out of state creates complications for federal law enforcement agencies trying to control the flow of illicit drugs.

Each of these items exposes the state to liability in the form of legal action and negative publicity, and creates significant public safety concerns.³⁴ It is not certain which of these effects, if any, will become sources of contention.

27 (Colorado Department of Regulatory Agencies, 2014)

28 (Advisory Committee on Medical Marijuana (ACMM), 2014)

29 (Crawford, 2014)

30 (Legislative Revenue Office, 2014)

31 (Oregon HIDTA, 2014)

32 (Office of National Drug Control Policy, 2015)

33 (Oregon HIDTA, 2014)

34 (Healy, 2014)

Still, it is in the best interest of the state to limit the negative impacts of unregulated cannabis production and consumption.³⁵

Stricter controls on the production and sale of medical marijuana will reduce illicit market supply and remove a significant obstacle for the introduction of a well-regulated, recreational market.³⁶ Restructuring medical marijuana production in Oregon around more professional and better-regulated organizations that have the ability to provide an adequate supply for the needs of the state's medical patients will foster the growth of the recreational market and protect the state from the damage done by unregulated organizations that currently supply the OMMP.

CONCLUSION

Assuming comparable regulation to both the recreational and medical markets, we believe that in time, the Oregon medical market will shrink with the growth of the recreational market. However, if regulations remain loose, medical marijuana growers will likely continue to produce at current levels, despite a stabilizing legal market (and shrinking medical demand). This will likely continue the trend of diverting excess production outside the state in direct violation of the eight federal enforcement priorities outlined in the second Cole Memo from the U.S. Department of Justice.

³⁵ (Pacula, Powell, Heaton, & Sevigny, 2015)

³⁶ (Pacula, Powell, Heaton, & Sevigny, 2015)

REFERENCES

- Advisory Committee on Medical Marijuana (ACMM). (2014, December 10). Quarterly ACMM Meeting Minutes. Portland, Oregon.
- BOTEC Analysis Corporation. (2013). *Estimating Adequate Licensed Square Footage for Production*. Washington State Liquor Control Board.
- Caulkins, J. P. (2010). Estimated Cost of Production for Legalized Cannabis. RAND Drug Policy Research Center.
- Colorado Department of Public Health and Environment. (2015). *Medical Marijuana Registry Program Update (as of December 31, 2014)*. Colorado Department of Public Health and Environment.
- Colorado Department of Regulatory Agencies. (2014). *2014 Sunset Review Colorado Medical Marijuana Code*. Denver: State of Colorado.
- Crawford, S. S. (2014). Estimating the Quasi-Underground: Oregon's Informal Marijuana Economy. *Humboldt Journal of Social Relations*, 118-137.
- Crombie, N. (2015, January 20). *Oregon's largest medical marijuana grow site serves only California patients*. Retrieved from OregonLive.com: http://www.oregonlive.com/marijuana/index.ssf/2015/01/largest_medical_marijuana_grow.html
- Enforcement Division - Marijuana. (2015). *Annual Update*. Colorado Department of Revenue.
- Health Canada. (2013). *Controlled Drugs and Substances Act: Marijuana for Medical Purposes Regulations*. Retrieved from Canada Gazette: <http://gazette.gc.ca/rp-pr/p2/2013/2013-06-19/html/sor-dors119-eng.php>
- Healy, J. (2014, December 19). 2 Neighbors of Colorado Sue Over Marijuana Law. *The New York Times*, p. A21.
- Kilmer, B., & Pacula, R. L. (2009). *Estimating the size of the global drug market: A demand-side approach*. A Report on Global Illicit Drug Markets 1998-2007.
- Kilmer, B., Caulkins, J. P., Pacula, R. L., & Reuter, P. H. (2011). Bringing perspective to illicit markets: Estimating the size of the U.S. marijuana market. *Drug and Alcohol Dependence*, 153-160.
- Legislative Revenue Office. (2014). *The Revenue Impact of Marijuana Legalization Under Measure 91*. Salem: State of Oregon.
- Marijuana Policy Project. (2013). *State-By-State Medical Marijuana Laws*. Washington, D.C.: Marijuana Policy Project.
- Marijuana Policy Project. (2015, 04 13). Medical Marijuana Patient Numbers. Retrieved from Marijuana Policy Project: <http://www.mpp.org/states/medical-marijuana-patient.html>
- Office of National Drug Control Policy. (2015, March 18). *Marijuana on Public and Tribal Lands*. Retrieved from www.whitehouse.gov: <https://www.whitehouse.gov/ondcp/marijuana-on-public-lands>
- Oregon Health Authority. (2015). *Oregon Medical Marijuana Program Statistical Snapshot January, 2015*. Portland, OR: Oregon Health Authority Public Health Division.
- Oregon HIDTA. (2014). *Program Year 2015 Threat Assessment and Counter-Drug Strategy*. Oregon Department of Justice.

Pacula, R. L., Powell, D., Heaton, P., & Sevigny, E. L. (2015). Assessing the Effects of Medical Marijuana Laws on Marijuana Use: The Devil is in the Details. *Journal of Policy Analysis and Management*, 34(1), 7-31.

State of Oregon. (2015, 04 14). Oregon Medical Marijuana: Protect the Patients & Treat it Like Medicine, Powerpoint Presentation. Retrieved from Oregon.gov: http://www.oregon.gov/pharmacy/imports/marijuana/public/orstatepolice_ommalegpp.pdf?ga=t

The Marijuana Policy Group. (2015). *Market Size and Demand for Marijuana in Colorado*. Colorado Department of Revenue.

The Network for Public Health Law. (2014). *Medical Marijuana Programs and Limited Access Laws*.

U.S. Department of Health and Human Services. (2013). *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*.

Vanhove, W., Van Damme, P., & Meert, N. (2011). Factors determining yield and quality of illicit indoor cannabis (*Cannabis spp.*) production. *Forensic Science International*, 158-163.

Washington State Liquor Control Board. (2015, March 24). *Frequently Requested Lists*. Retrieved from Washington State Liquor Control Board: <http://www.liq.wa.gov/records/frequently-requested-lists>

APPENDIX

TABLE 6: REGISTERED PATIENTS AND GROW SITES BY COUNTY³⁷

COUNTY	PATIENTS	GROW SITES	MAX PLANT COUNT	% OF STATE GROW SITES	COUNTY POPULATION	% OF STATE POP.	% OF PATIENT POP.
Baker	256	152	1,536	0.4%	16,280	0.4%	0.4%
Benton	1,068	549	6,408	1.5%	87,725	2.2%	1.6%
Clackamas	5,008	2,901	30,048	8.1%	386,080	9.9%	7.3%
Clatsop	667	380	4,002	1.1%	37,270	1.0%	1.0%
Columbia	939	573	5,634	1.6%	49,850	1.3%	1.4%
Coos	1,645	963	9,870	2.7%	62,860	1.6%	2.4%
Crook	386	220	2,316	0.6%	20,690	0.5%	0.6%
Curry	870	471	5,220	1.3%	22,300	0.6%	1.3%
Deschutes	3,491	1,830	20,946	5.1%	162,525	4.1%	5.1%
Douglas	2,386	1,421	14,316	4.0%	108,850	2.8%	3.5%
Grant	105	69	630	0.2%	7,435	0.2%	0.2%
Harney	106	63	636	0.2%	7,260	0.2%	0.2%
Hood River	317	196	1,902	0.5%	23,295	0.6%	0.5%
Jackson	7,962	3,240	47,772	9.1%	206,310	5.3%	11.6%
Jefferson	358	231	2,148	0.6%	22,040	0.6%	0.5%
Josephine	5,160	2,482	30,960	6.9%	82,815	2.1%	7.5%
Klamath	1,228	765	7,368	2.1%	66,810	1.7%	1.8%
Lake	128	89	768	0.2%	7,895	0.2%	0.2%
Lane	7,577	4,134	45,462	11.6%	356,125	9.1%	11.1%
Lincoln	1,258	662	7,548	1.9%	46,560	1.2%	1.8%
Linn	2,021	1,077	12,126	3.0%	118,665	3.0%	2.9%
Malheur	519	305	3,114	0.9%	31,440	0.8%	0.8%
Marion	3,860	2,055	23,160	5.7%	322,880	8.2%	5.6%
Morrow	67	50	402	0.1%	11,425	0.3%	0.1%
Multnomah	12,014	5,967	72,084	16.7%	756,530	19.3%	17.5%
Polk	1,062	583	6,372	1.6%	77,065	2.0%	1.5%
Tillamook	558	325	3,348	0.9%	25,375	0.6%	0.8%
Umatilla	614	351	3,684	1.0%	77,895	2.0%	0.9%
Union	376	223	2,256	0.6%	26,325	0.7%	0.5%
Wallowa	139	73	834	0.2%	7,045	0.2%	0.2%
Wasco	440	292	2,640	0.8%	25,810	0.7%	0.6%
Washington	4,737	2,362	28,422	6.6%	550,990	14.1%	6.9%
Yamhill	1,180	664	7,080	1.9%	101,400	2.6%	1.7%
Gilliam/Sherman/Wheeler	68	50	408	0.1%	5,155	0.1%	0.1%
Outside of Oregon	1,659	N/A	9,954				
Total	70,229	35,768	421,374		3,918,975		

³⁷ (Oregon Health Authority, 2015)

TABLE 7:
ANNUAL MEDICAL MARIJUANA PRODUCTION IN OREGON UNDER VARIOUS YIELD SCENARIOS
 (HIGHLIGHTED SCENARIOS CONSIDERED HIGHLY UNLIKELY)

OUTDOOR YIELD	INDOOR YIELD	% OUTDOOR CULTIVATION										
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1	0.046875	79,008	113,244	147,481	181,718	215,954	250,191	284,427	318,664	352,901	387,137	421,374
1	0.0625	105,344	136,947	168,550	200,153	231,756	263,359	294,962	326,565	358,168	389,771	421,374
1	0.078125	131,679	160,649	189,618	218,588	247,557	276,527	305,496	334,466	363,435	392,405	421,374
1	0.09375	158,015	184,351	210,687	237,023	263,359	289,695	316,031	342,366	368,702	395,038	421,374
5	0.046875	79,008	281,794	484,580	687,366	890,153	1,092,939	1,295,725	1,498,511	1,701,298	1,904,084	2,106,870
5	0.0625	105,344	305,496	505,649	705,801	905,954	1,106,107	1,306,259	1,506,412	1,706,565	1,906,717	2,106,870
5	0.078125	131,679	329,198	526,718	724,237	921,756	1,119,275	1,316,794	1,514,313	1,711,832	1,909,351	2,106,870
5	0.09375	158,015	352,901	547,786	742,672	937,557	1,132,443	1,327,328	1,522,214	1,717,099	1,911,985	2,106,870
10	0.046875	79,008	492,481	905,954	1,319,427	1,732,901	2,146,374	2,559,847	2,973,320	3,386,794	3,800,267	4,213,740
10	0.0625	105,344	516,183	927,023	1,337,862	1,748,702	2,159,542	2,570,381	2,981,221	3,392,061	3,802,900	4,213,740
10	0.078125	131,679	539,885	948,092	1,356,298	1,764,504	2,172,710	2,580,916	2,989,122	3,397,328	3,805,534	4,213,740
10	0.09375	158,015	563,588	969,160	1,374,733	1,780,305	2,185,878	2,591,450	2,997,023	3,402,595	3,808,168	4,213,740
20	0.046875	79,008	913,855	1,748,702	2,583,549	3,418,397	4,253,244	5,088,091	5,922,938	6,757,786	7,592,633	8,427,480
20	0.0625	105,344	937,557	1,769,771	2,601,984	3,434,198	4,266,412	5,098,625	5,930,839	6,763,053	7,595,266	8,427,480
20	0.078125	131,679	961,259	1,790,840	2,620,420	3,450,000	4,279,580	5,109,160	5,938,740	6,768,320	7,597,900	8,427,480
20	0.09375	158,015	984,962	1,811,908	2,638,855	3,465,801	4,292,748	5,119,694	5,946,641	6,773,587	7,600,534	8,427,480

TABLE 8:
QUALIFYING CONDITIONS FOR MEDICAL MARIJUANA IN COLORADO, CANADA AND OREGON

COLORADO	CANADA	OREGON
Cancer	Cancer	Cancer
Cachexia	Cachexia	Cachexia
HIV/AIDS	HIV/AIDS	HIV/AIDS
Seizures	Seizures/Epilepsy	Seizures
Glaucoma	Multiple Sclerosis	Glaucoma
Persistent Muscle Spasms	Spinal Cord Injury	Hepatitis C
Severe Nausea	Spinal Cord Disease	Severe Nausea
Severe Pain	Severe Arthritis	Severe Muscle Spasms
	Severe Pain	Multiple Sclerosis
	Debilitating Conditions	Crohn's Disease
		Alzheimer's Disease