1. Working group name:

   Cultivation Working Group

2. Individual sponsor(s):

   Tessa Rognier – Nevada Department of Agriculture
   David Standard- Deep Roots Harvest
   Jason Strull – 374 Labs

3. Describe the recommendation:

   The recommendation is to allow cultivators to set aside a specific amount of each lot's inventory, not to exceed 7 grams, as designated as "internal product evaluation material". This material would be disseminated at no cost to agents of the cultivation for internal testing. The intent of this program is to allow cultivators to "test" or "sample" their product prior to sale or complete testing.

   Product can only be disseminated, prior to complete testing, to agents of the cultivation, but it must meet the following criteria:

   1. Be packaged in a child safe container and meet the same requirements for packaging set forth in applicable NRS, NAC, or Department policy.

   2. Mass of marijuana cannot exceed 3.5 grams in each package.

   3. Be clearly labeled with the following information:
      a. Cultivation name and license number
      b. Strain name
      c. Harvest date and package date
      d. Lot number
      e. Batch number
      f. Weight of marijuana packaged

   4. If the lot has not undergone the complete panel of tests as detailed in applicable NRS, NAC or Department policy, it must be clearly labeled with the following: "This marijuana is not tested and may contain harmful pesticides and other contaminants"

4. Which guiding principle(s) does this recommendation support?

   Guiding Principle 2 - Be responsive to the needs and issues of both consumers and the industry

   Guiding Principle 4 – Propose efficient and effective regulation that is clear and reasonable and not unduly burdensome

5. What provision(s) of Question 2 does this recommendation apply to?

   The provisions of Question 2 that allow for possession and obtaining of marijuana

6. What issue(s) does the recommendation resolve?

   Establishes clear and practical procedures and standards that marijuana cultivators must follow to allow the designation of a small subsection of each lot for internal evaluation.

7. Was there dissent in the group regarding this recommendation? If yes, please provide a summary of the dissenting opinion regarding the recommendation.

   No dissent

8. What action(s) will be necessary to adopt the recommendation? Will statute, policy, regulations, etc. need to be addressed?

   Recommendation is to adapt language to applicable NAC, or Department of taxation policy, to allow for internal evaluation of cultivated product by agents of the cultivation

9. Additional information (cost of implementation, priority according to the recommendations, etc.).

   None

Product Acquisition - Recommendation

1. Working group name:

   Cultivation Working Group

2. Individual sponsor(s):

   Armen Yemenidjian – Integral Associates, LLC
   Amanda Connor – Connor & Connor PLLC

3. Describe the recommendation:

   The Cultivation Working Group recommends that the product acquisition procedures be similar to medical marijuana product acquisition procedures.

4. Which guiding principle(s) does this recommendation support?

   Guiding Principle 1 – Promote the health, safety, and well-being of Nevada's communities.

   Guiding Principle 3 – Ensure that youth are protected from the risks associated with marijuana, including preventing the diversion of marijuana to anyone under the age of 21.

   Guiding Principle 4 – Propose efficient and effective regulation that is clear and reasonable and not unduly burdensome.

   Guiding Principle 6 – Establish regulations that are clear and practical, so that interactions between law enforcement (at the local, state and federal levels), consumers, and licensees are predictable and understandable.

5. What provision(s) of Question 2 does this recommendation apply to?

   Question 2 allows cultivation and this recommendation addresses how the cultivation facilities will acquire product.

6. What issue(s) does the recommendation resolve?

   This recommendation would resolve the method for cultivation facilities to receive product.

7. Was there dissent in the group regarding this recommendation? If yes, please provide a summary of the dissenting opinion regarding the recommendation.

   No dissent

8. What action(s) will be necessary to adopt the recommendation? Will statute, policy, regulations, etc. need to be addressed?

This change will require the Department of Tax to adopt regulation regarding product acquisition. The following suggested product acquisition requirements should be included to be similar to medical marijuana cultivation:

NAC 453A.414 Inventory control system; where establishment may acquire marijuana and related products; perpetual inventory system of manufacturing process; duties of establishment if loss is incurred. (NRS 453A.370)

1. *Each ~~medical~~ marijuana establishment shall designate in writing a ~~medical~~ marijuana establishment agent who has oversight of the inventory control system of the medical marijuana establishment.*
2. *A ~~medical~~ marijuana establishment shall only acquire marijuana, edible marijuana products or marijuana-infused products from:*
   (a) Another ~~medical~~ marijuana establishment, including, without limitation, a cultivation facility and a facility for the production of edible marijuana products or marijuana-infused products, ~~except that a medical marijuana dispensary may not purchase marijuana from another medical marijuana dispensary; or~~ or a retail marijuana establishment
   (b) ~~A person who holds a valid registry identification card or his or her designated primary caregiver in the manner set forth in subsection 5 of NRS 453A.352.~~ A marijuana establishment may acquire product from a medical marijuana establishment that is licensed under NRS 453A.
   (c) A marijuana cultivation establishment may acquire seeds for the cultivation of marijuana that are legally purchased pursuant to NRS 453D.
   (d) A home grower registered with the State of Nevada Department of Agriculture.

3. *Each ~~medical~~ marijuana establishment shall establish and implement an inventory control system that documents:*

   (a) Each day's beginning inventory, acquisitions, harvests, sales, disbursements, disposal of unusable marijuana and ending inventory.

   ~~(b) When acquiring medical marijuana from a person who holds a valid registry identification card or his or her designated primary caregiver:~~

      ~~(1) A description of the medical marijuana acquired, including the amount and strain as specified by the cardholder or caregiver, if known;~~
      ~~(2) The name and number of the valid registry identification card of the person who provided the medical marijuana or, if provided by a designated primary caregiver, his or her name;~~
      ~~(3) The name and medical marijuana establishment agent registration card number of the medical marijuana establishment agent receiving the medical marijuana on behalf of the medical marijuana dispensary; and~~
      ~~(4) The date of acquisition.~~

   ~~(c)~~ (b) When acquiring ~~medical~~ marijuana from another ~~medical~~ marijuana

establishment:

(1) A description of the ~~medical~~ marijuana acquired, including the amount, strain and batch number;

(2) The name and identification number of the ~~medical~~ marijuana establishment registration certificate of the ~~medical~~ marijuana establishment providing the ~~medical~~ marijuana;

(3) The name and ~~medical~~ marijuana establishment agent registration card number of the ~~medical~~ marijuana establishment agent providing the ~~medical~~ marijuana;

(4) The name and ~~medical~~ marijuana establishment agent registration card number of the ~~medical~~ marijuana establishment agent receiving the ~~medical~~ marijuana on behalf of the ~~medical~~ marijuana establishment; and

(5) The date of acquisition.

(c) When acquiring marijuana from a medical marijuana establishment licensed pursuant to NRS 453A:

(1) A description of the marijuana acquired, including the amount, strain and batch number;

(2) The name and identification number of the medical marijuana establishment registration certificate of the medical marijuana establishment providing the medical marijuana;

(3) The name and medical marijuana establishment agent registration card number of the medical marijuana establishment agent providing the medical marijuana;

(4) The name and marijuana establishment agent registration card number of the marijuana establishment agent receiving the medical marijuana on behalf of the medical marijuana establishment; and

(5) The date of acquisition.

(d) When acquiring seeds or marijuana from a registered home grower:

(1) A description of the marijuana acquired, including the amount, strain and batch number;

(2) The name and marijuana establishment agent registration card number of the marijuana establishment agent receiving the medical marijuana on behalf of the medical marijuana establishment;

(3) The date of acquisition; and

(4) The name of the company or individual that provided the seeds or marijuana.

9. Additional information (cost of implementation, priority according to the recommendations, etc.).

None

Cultivation Supply Management - Recommendation

1. Working group name:

   Cultivation Working Group

2. Individual sponsor(s):

   Amanda Connor-Connor & Connor
   Tessa Rognier-Nevada Department of Agriculture

3. Describe the recommendation:

   The recommendation is to guide the Nevada Department of Taxation on the issuance of licensing for marijuana cultivation establishments after the Department begins to receive applications. For the Medical Marijuana Establishment (MME) program there were 182 cultivation establishments initially approved. Of the 182, there are currently 87 facilities approved and currently operating, with 91 MME licenses in provisional status. Many of these operating facilities are not utilizing their entire facility footprint due to the high supply of marijuana currently available. We recommend approving retail marijuana cultivation establishment requests to existing Medical Marijuana Establishments at a ratio of 1 to 1, giving approved and provisional MME's the opportunity to expand into the new market.
   We recommend that the Department annually evaluate marijuana market supply to assure market stability. In the attached supply analysis for the Nevada Medical Marijuana Establishment Program, we calculated an estimated 0.1-0.25 pounds of marijuana can be grown indoors per square foot of grow room space. Using this type of calculation would help the Department determine facility growth needs to match growth in the medical and retail markets. With these additional provisional licenses coupled with the potential for expansion by current MME facilities, we believe the supply needed to fulfill the increase in demand the retail program will create can and will be met. Our attached analysis shows we do not see a need to approve any further cultivation licensees.

4. Which guiding principle(s) does this recommendation support?

   Guiding Principal 2 - Be responsive to the needs and issues of consumers, non-consumers, local governments and the industry

5. What provision(s) of Question 2 does this recommendation apply to?

   Section 10- Certification of marijuana establishments

6. What issue(s) does the recommendation resolve?

   The issue of a balance between the supply of safe marijuana and marijuana products and consumer demand. Creating an oversupply can cause wholesale prices to drop, thus creating an unsustainable industry for marijuana establishments. Resulting lower wholesale prices would

reduce overall tax revenue projected for the State, and create opportunities for diversion of marijuana onto the black market.

7. Was there dissent in the group regarding this recommendation? If yes, please provide a summary of the dissenting opinion regarding the recommendation.

   None

8. What action(s) will be necessary to adopt the recommendation? Will statute, policy, regulations, etc. need to be addressed?

   Department of Taxation policy for granting marijuana establishments should be addressed.

9. Additional information (cost of implementation, priority according to the recommendations, etc.).

   Not known.

Supply Analysis for the Nevada Medical Marijuana Program

Cultivation Supply Data and Assumptions

The average Square footage of Nevada Medical Marijuana Establishments was found to be 26,000 square feet, with data from 65 facilities, as shown in figure 1. Of the 65 facilities in this sample, the majority are 29,999 square feet or less, with 30 facilities ranging from 10,000-29,000 and 19 facilities under 10,000 square feet. Eight facilities have a square footage ranging from 30,000-49,999 three, five facilities between 50,000-99,999 square feet, two with square footage between 100,000 square feet, and one over 150,000 square feet. These figures are the total square footage for the building footprint, not the actual grow room space.

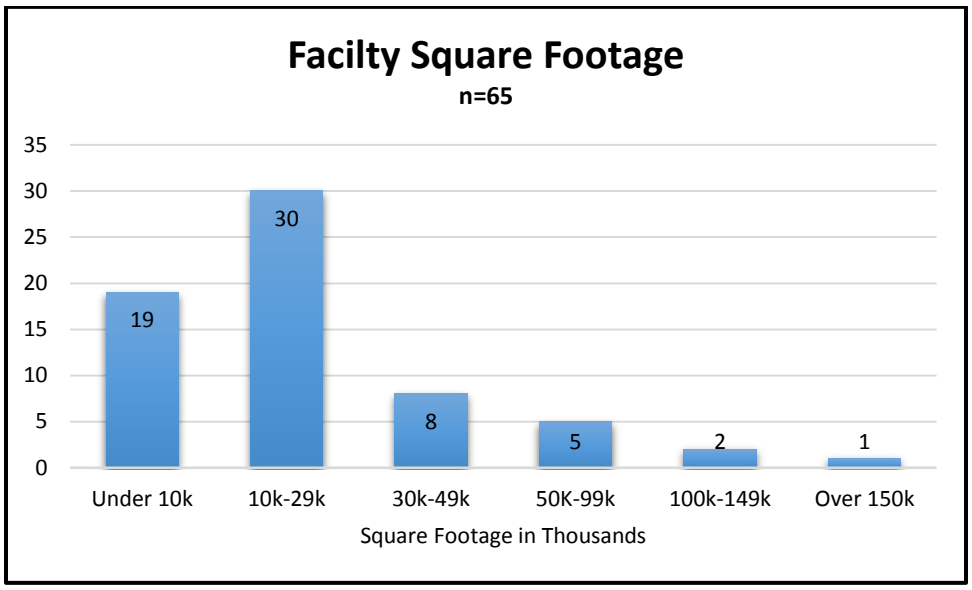

Figure 1: Total cultivation square footage breakdown of 65 of 87 currently open establishments

Figure 2, breaks out the total and predicted Nevada combined cultivation facility footprint, based on the average facility size of 26,000 square feet as The Division currently lacks the data of the actual grow space of each facility. Assuming that all the provisional licenses will fall within the same average facility square footage, the current 87 licenses and 91 provisional licenses will hold approximately 4,628,000 square feet when completely built out.

While these numbers depicts the total cultivations square footage, they lack a correlation to how much of the cultivation facility will be dedicated to actual cultivation of marijuana. Marijuana yield from a cultivation facility is commonly estimated based on the total square footage of the cultivation dedicated specifically to flowering (the part of the cycle that yields the marijuana flowers or buds). If we estimate that each of these facilities dedicate approximately 65% of their facility to production of marijuana flower production, the average flowering space per facility is 16,945 square feet. For a low estimate, we could assume that each facility dedicates 45% of their facility space for an estimated 11,731 square feet dedicated to flower production on average.

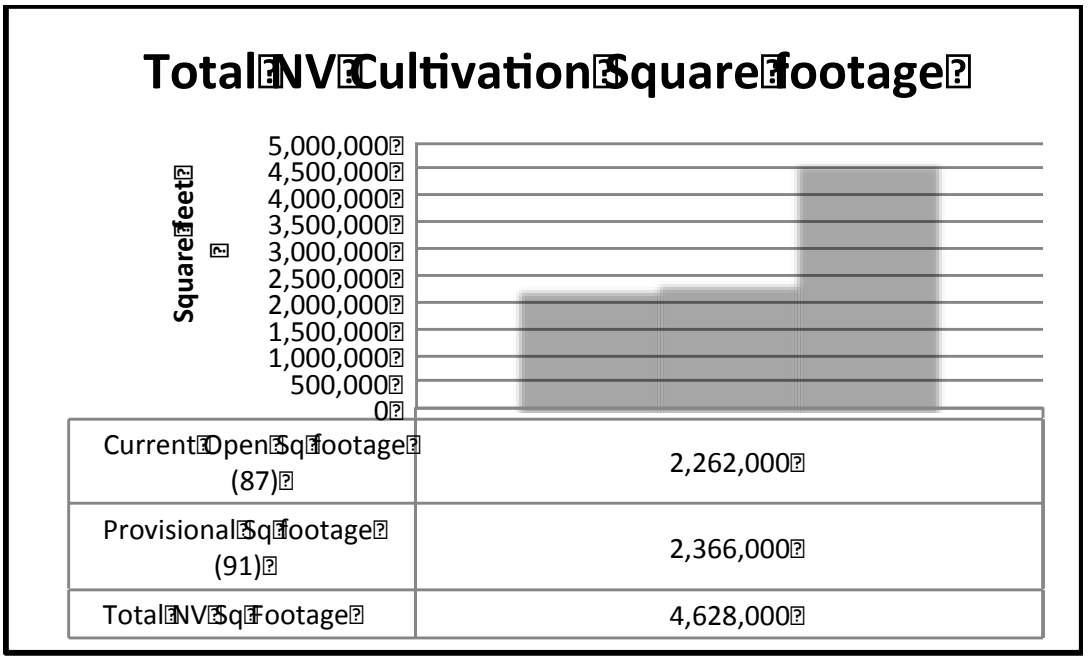

Figure 2: Breakdown of current and predicted total cultivation facility square footage based on average facility square footage of 26,000 ft^2/facility

Table 1: NV Cultivation Capacity Assumption			
Cultivation Flowering (% of 26,000 square footage average)		Annual marijuana flower pound yield per sq foot	
Average Flower Space Low End 6,500 sq ft High End 16,900 sq ft		Average Yield 0.35 with 5 harvests per year	
Low End	High End	Low Yield	High Yield
25%	65%	0.05	0.1

Table 1 also estimates annual yield based on square footage of flowering space, assuming a low yield and high yield potential.

The low yield was calculated at 0.05 lb. /square foot and the high yield at 0.1 lb. /square foot. There would be some variations needed to be accounted for as the cultivation methods range from growing in dirt and growing hydroponically. The growth obtained in dirt would be slower than hydroponically, leading to variation in plant size per harvest. Most commercial facilities are on a production cycle to have replacement plants ready so they may replant the flower rooms immediately following harvest, mitigating down time. Because of this efficiency in plant cycling and timing, most facilities would be able to harvest each flower room five to six times per year. For this analysis, we assumed a five harvest per room per year. These assumptions were verified

by members of the Nevada Medical Marijuana Establishment industry and were built from a well-known harvest yield study performed by Botec Analysis Corporation[1].

Using these assumptions from Table 1, we can estimate the current yearly harvest yield of the Nevada Medical Marijuana Establishment sample of 66 facilities of which we obtained actual total square footage data. Also using the assumptions and data in Table 1, we can extrapolate this to the 91 provisional Medical Marijuana licensees that are still eligible to obtain an operating certificate.

Table 2: Provisional MME Licensees Average Annual Yield Based on Assumptions in Table 1			
Average facility 26,000		Average Yield 0.35	
Percentage of Facilty Dedicated to Flower Production in			
25%	45%	55%	65%
6,500	11,700	14,300	16,900
Average Facilty Yield in lbs per Year			
2275	4095	5005	5915
Additional Annual Harvest 91 Provisionals (in lbs)			
207,025	372,645	455,455	538,265

The yield results in Table 2 were applied to the total operating licenses to project total marijuana yield as shown in Figure 3.

Current facility output annual capacity is estimated to yield 148,294 to 385,499 pounds per year dependent on the total facility square footage being dedicated to flower production.

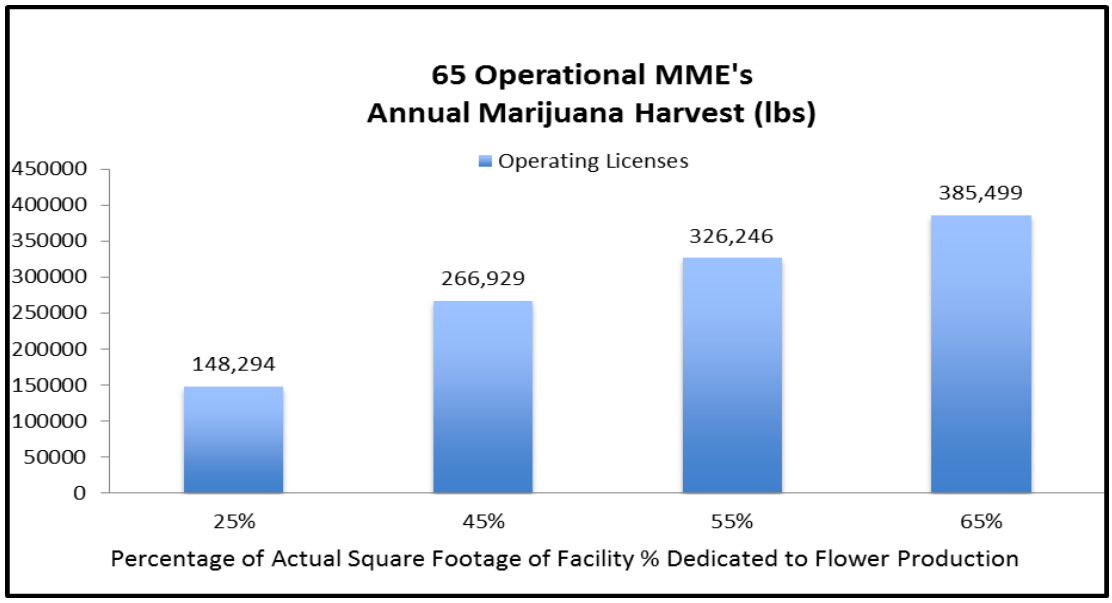

Figure 3: The projected annual marijuana harvest in Nevada based on assumptions made in table 1 using average facility footprint (total building space) and estimation of percentage of total facility space to dedicated to flowering capacity

Nevada Consumer Market Analysis

It is extremely complicated to assess the market demand for recreational marijuana in Nevada. There are multiple factors to assess, and this short analysis does not intend undertake this arduous task. Colorado has been selling recreational and retail marijuana since 2014. This program is has been strictly monitored by the Colorado Marijuana Enforcement Division (MED). The data taken to form this assessment, and which the following assumptions have been based on, has been sourced primarily from the MED 2015 annual report.

Colorado's Market and demand is broken down below:

- *In 2015, Colorado sold 251,472 lbs. of marijuana to patients, residents and tourists[2].*
- *In 2015, Colorado had approximately 113,000 medical patients[3] and approximately 77,100,000 tourism visitors[4], and was measured of having 5,457,000 residents[5]*
- *Medical Marijuana sales in Colorado in 2015 accounted for 144,540 lbs. or 57.48% of the total marijuana market[2]*
- *Retail and recreational marijuana market accounted for 106,932 lbs. or 42.52% of the total marijuana market[2]*
- *Based on the Colorado population (non-medical patients) and tourisms numbers, every person who traveled to or lived in Colorado in 2015 consumed 0.59 grams of marijuana. This number includes people under the age of 21 and people who abstained from marijuana*
- *Colorado medical patients consumed approximately 1.28 lbs. per patient in 2015*

Nevada Market Numbers are presented below to correlate to the above stated Colorado and market demand:

- *In 2015 Nevada had approximately 4,700,000 visitors to the Reno/Tahoe area[6], 42,312,216 visitors to Las Vegas[7], and 2,891,000 permanent residents[8].*
- *The most current patient population report in Nevada, February 2017, listed 26,519 patients*
- *Based on the above, the total visitors, and non-medical residents is 49,903,216 people*

Assuming Nevada follows a similar market demand based on medical marijuana patients, tourism visitors and residents, the following is a projection of the Market. There are two market demands to consider, that of marijuana in bud form, and also in the oil form. The current industry standard is approximately 50% to 60% of the marijuana grown in the state goes into the production of marijuana oils, as there is a very low output yield of approximately 10% from this extraction process, based on weight of raw material inputs. The other half of the marijuana grown is sold as traditional flower products, or referred to as bud. The marijuana oil is used in the production of oil vaporizing pens and used to make into consumable edibles. These products are more discreet in use and will potentially be a very large part of the Nevada market, especially southern Nevada.

There are some caveats to consider when using the Colorado MED report to extrapolate to Nevada. The Colorado tourism visitor number of 77 million did seem to be a very high estimate. Looking into this reported tourism visitor number was estimated during a survey. During the survey was also estimated that there was an estimated 34% of respondents who were possibly just passing through, not staying overnight in Colorado. For this reason, the number of consumed grams per person could be artificially low. We have corrected for this by producing five different demand scenarios, each with an increasing number of grams consumed per visitor. Also, it can be assumed that Nevada would get a larger share of adult based tourism visits per year. And third, Nevada has a medical marijuana reciprocity program, which may make the patient base much larger than that of the state itself.

It was also impossible to get any meaningful data from the MED report to base our demand for oil and edible products for Nevada. We assumed we would need double the number of pounds sold as bud to be made into oils for vaping and edibles. We based our demand for extracted marijuana oil concentrate off the current demand in the Nevada Medical Marijuana market. Over 50% of the total marijuana harvest yields are being extracted into oil products and sold in this form to meet market demand.

The projected demand is based on the following scenarios:

Scenario 1: Medical will follow the same as Colorado, 1.28 lbs. per patient annually, and each visitor and non-medical resident will purchase and consume 0.59 grams. ***This results in a market demand of 98,646 lbs. per year in bud and an additional 98,646 lbs. per year for the production of oils for a total of 197,293 lbs. per year.***

Scenario 2: Medical will follow the same as Colorado, 1.28 lbs. per patient annually, and each visitor and non-medical resident will purchase and consume 1.18 grams, two times consumed in Colorado in 2015. ***This results in a market demand of 163,372 lbs. per year in bud and an additional 163,372 lbs. per year for the production of oils for a total of 326,744 lbs. per year.***

Scenario 3: Medical will follow the maximum allotment of 2.5 oz. /two week period or approximately 4.06 lbs. per patient annually, and each visitor and non-medical resident will purchase and consume 0.59 grams. ***This results in a market demand of 172,459 lbs. per year in bud and an additional 172,459 lbs. per year for the production of oils for a total of 344,918 lbs. per year.***

Scenario 4: Medical will follow the maximum allotment of 2.5 oz. /two week period or approximately 4.06 lbs. per patient annually, and each visitor and non-medical resident will purchase and consume 1.18 grams, two times consumed in Colorado in 2015. ***This results in a market demand of 237,185 lbs. per year in bud and an additional 237,185 lbs. per year for the production of oils for a total of 474,370 lbs. per year.***

Scenario 5: Medical will follow the maximum allotment of 2.5 oz. /two week period or approximately 4.06 lbs. per patient annually, and each visitor and non-medical resident will purchase and consume 2.95 grams, five times consumed in Colorado in 2015 ***This results in a***

market demand of 431,994 lbs. per year and an additional 431,994 lbs. per year for the production of oils for a total of 863,989 lbs. per year.

It is estimated that the total marked demand in NV will fall similar to Colorado projections and possible meet the projections in Scenario 2 and Scenario 3 with market growth over the year, potentially scenario 4 within a three years.

Based on these numbers, even with the highest projections, Scenario 5, the total open and provisional licenses will be able to meet the demand by only dedicating 55% of total facility space to flower production.

Figure 4 details the 5 scenarios based on the Nevada annual projected harvest.

The supply of marijuana into the Nevada market will depend on many variables. The first, how many of the 91 provisional licensees become operational and how large these new facilities will be. There will be a wide variation in total facility square footage across the current operating facilities and forthcoming provisional licensees, and the above graph assumes harvest yield based on an average facility of 26,000 square feet. The projected harvest yield also depends greatly on the variation in the total percentage of square footage each facility dedicates to flower production. Again, these are just estimates based on the average of the current operating facilities and an average harvest yield.

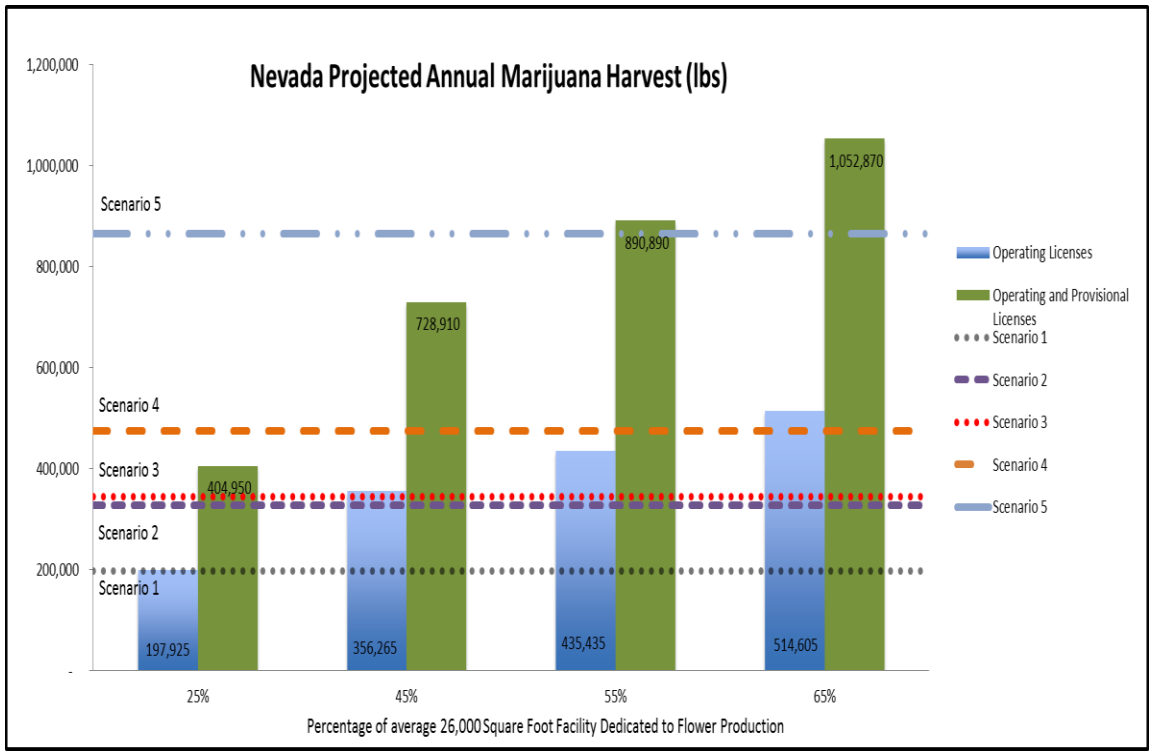

Figure 4: The projected annual marijuana harvest and demand scenarios

The supply of marijuana needed to meet the increase in demand of the recreational market may be become deficient in the first year of the retail market. This supply shortage has been seen in almost every state that has opened their markets to recreational individuals. However, because Nevada's market has been able to observe and learn from the early adopter states, this supply deficiency may be somewhat mitigated. There are a number of provisional medical marijuana licensees that began facility build out soon after the November 2016 vote confirmed Questions 2, with plans to come online to meet this new demand. Also, many operational licensees have greenlighted their final or phase 2 build outs that didn't make financial sense in the existing medical marijuana market, before the passage of Question 2. With the amount of provisional licenses potentially doubling the amount of cultivation facilities in Nevada, we believe the supply in the long run will meet market demand.

We do recommend the Department complete a comprehensive supply analysis on the current operating facilities harvest yield potential in conjunction with issuing new recreational licensees outside the existing and provisional Medical Marijuana Establishment program to ensure that the initial supply for the new market is not short sighted, and that an oversupply is not created. An oversupply could push wholesale prices down, lowering projected tax revenues for the State, and potentially cause diversion of product to the black market.

Citations

1. Botec Analysis Corporation. Estimating Adequate Licensed Square Footage for Production. By Jonathan Caulkins, Matthew Cohen, Luigi Zamarra

2. United States. Colorado Department of Revenue. Marijuana Enforcement Division. MED 2015 Annual Update. By Barbara Brohl, Ron Kammerzell, Lewis Koski, Jim Burack.

3. Medical Marijuana Registry Program Update. Denver, CO: Health Statistics Section, Medical Marijuana Registry Program, 2015. Web. 28 Apr. 2017.

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5. "Population Estimates, July 1, 2016, (V2016)." Colorado QuickFacts from the US Census Bureau. Web. 28 Apr. 2017.

6. "Reno and Lake Tahoe Facts & Statistics at a Glance." Visit Reno Tahoe. N.p., n.d. Web. 28 Apr. 2017.

7. 2015 LAS VEGAS YEAR-TO-DATE EXECUTIVE SUMMARY. Las Vegas Convention and Visitor Authority. Web. 28 Apr. 2017.

8. "Population Estimates, July 1, 2016, (V2016)." Nevada QuickFacts from the US Census Bureau. Web. 28 Apr. 2017.

Microbial Testing Limits - Recommendation

1. Working group name:

   Cultivation Working Group

2. Individual sponsor(s):

   John Ritter, Advisory Board TGIG, The Grove
   Jason Strull, 374 Labs

3. Describe the recommendation:

   To change the current microbial testing limits from the American Herbal Pharmacopia (AHP) to the American Herbal Product Association (AHPA).

4. Which guiding principle(s) does this recommendation support?

   Guiding Principle (1) - Promote the health, safety, and well-being of Nevada's communities

   Guiding Principle (2) - Be responsive to the needs and issues of consumers, non-consumers, local governments, and the industry.

   Guiding Principle (4) - Propose efficient and effective regulation that is clear and reasonable and not unduly burdensome.

5. What provision(s) of Question 2 does this recommendation apply to?

   Section 2 (g) - "Marijuana in the State will be tested and labeled".

   Section 5 (f) - The Department shall adopt … "Requirements for the testing and labeling of marijuana …"

6. What issue(s) does the recommendation resolve?

   This recommendation resolves the issue of allowing cultivators to grow using organic methods and allows them to have more options in using organic biopesticides, rather than using synthetic pesticides.

7. Was there dissent in the group regarding this recommendation? If yes, please provide a summary of the dissenting opinion regarding the recommendation.

   No dissent.

8. What action(s) will be necessary to adopt the recommendation? Will statute, policy, regulations, etc. need to be addressed?

9. Additional information (cost of implementation, priority according to the recommendations, etc.).

   None.