

Mireya Turner

From: Lawrence-Havenwest <lawrence@havenwest.co>
Sent: Tuesday, December 27, 2016 1:20 PM
To: Robert Massarelli
Cc: Mireya Turner; Calvin Tse; Donny Havenwest
Subject: Greetings and next steps

Hello Bob,

I hope you enjoyed your Christmas weekend. And thanks again for meeting with us last week to hear us out.

We really look forward to offering more input into the county's effort in crafting an ordinance that works for all.

Based on our discussion, there were two items that you brought up, and I wanted to recap that.

1- Provide more data regarding odor issues related to greenhouse opening the vent, and seeing how that might impact neighbor's property. The objective of this was to see what are some adequate set backs to consider. We will be working on this, and should have something to you this week.

2- You mentioned the current point merit system is vague in many aspects and wanted us to input further details regarding each of the point system topic areas. Can you provide more specifics as to which particular areas, or what type of details would you like to see?

Thanks, and please do not hesitate to reach out if we can be of any further assistance.

Lawrence

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Robert Massarelli
Lake County Community Development

Hi Robert,

Had a chance to review the draft ordinance being presented to the Planning Commission on 12/15. The ordinance is coming along very well, those of us who have been involved in the process really appreciate all of the time and effort you and Mireya Turner have put into this. With all of the input from the various viewpoints this has not been an easy task for you.

There are a few changes I would like to suggest. Pages 29 and 30 outline setbacks for small outdoor grow sites. A setback of 150 ft is suggested for 5 acre parcels, yet many, if not most, 5 acre parcels are rectangular shapes with 2:1 length to width ratios. The dimensions are 330x660. This would only allow the property owner a very narrow 30 ft strip in the center of their property to use. A 100 ft setback would be more appropriate.

For 20 acre parcels, a setback of 300 ft was suggested. Most 20 acre parcels are the result of a split of a 40 acre parcel and are also rectangular in shape. The dimensions are 660x1320. The 300 ft setback will result in the landowner having a narrow 60 ft wide strip of land to work with. Most owners strive to locate their dwellings in the center of their property for privacy reasons making this difficult to implement. A 200 ft setback would be more realistic.

Throughout the ordinance reference is made, such as iv)1(a) on pages 29 and 30, that the permit holder "Not allow any person under the age of 21 on the premises." I agree that persons under 21 should not be in the grow area, but to prohibit any family members under 21 to ever visit their relatives again is unduly harsh. If an owner of a 100 acre property has a small cottage grow on their ranch that meets the criteria of fencing and security, there is no danger from letting family or friends of any age to visit them. Also, as President of the Lake County Association of Realtors, I can't agree that some of our younger agents will be prohibited from crossing a property with a permitted grow site in order to show a property that is not being used for cannabis. The sentence should be changed to read "inside the grow area".

Page 45 outlines the need to meet a “score” of different criteria that amounts to at least 100 points. I am very familiar with the operation of Ceago, a certified biodynamic farming operation between Nice and Lucerne. The owner, Jim Fetzer, is a friend and client and I have gone on numerous tours of his ranch with him. His operation has been widely acclaimed for his environmentally friendly farming practices. I used his operation as a practice model and it scored around 80 points. To expect every cannabis farmer in the County to reach a score of 100 is unrealistic. The score is a very useful tool and I hope this stays in the final ordinance, but the total should be reduced to 75.

In the slideshow documents distributed, reference is made to excluding or limiting cannabis operations in certain Ag areas and now AVA's. The Association of Realtors has always felt that our General Plan and zoning ordinances are very clear on the fact that a diverse agricultural base is important to this County. This is the most lucrative agricultural opportunity to come along for small farmers in decades and we do not agree that any owners of the agriculturally zoned parcels (A, APZ, RL, TPZ) in the County be denied the opportunity to participate. The setback restrictions, size of operations, and permitting already make this the most regulated crop in the history of Lake County.

Reference was also made to permits not being assignable. I hope this can be changed to allowing a permit to be assignable only with County approval. If a permitted cannabis site is being operated in a very professional manner in a very good location, and something should happen to the permit holder, such as illness, injury, family emergency, allowing the operation to be transferred to an acceptable new owner should be allowed. The continuity of the business would be good for the County and employees of the operation, and allow the former owner to be rewarded for their efforts.

There is a map showing the overlay for the larger outdoor cultivations sites. Since the entire County has been reduced to a 9x11 page, it's a little difficult to see if some of the best ownerships are included. Valleys with dead end or private roads, plentiful water, and proper zoning should be utilized as much as possible. New Long Valley, Bachelor Valley, Clover Valley among them. The map looks like it includes some of these areas, but missing is Benmore Valley. This is on the County line at the west side North of Hwy 175. I have sold numerous properties in this area. The larger ranches have licensed reservoirs for irrigation, the smaller ones have excellent wells, they are surrounded by BLM or large hunting properties, seems like an ideal place for this.

Again, the ordinance is coming along very well and your hard work is greatly appreciated.

Bobby Dutcher

Mireya Turner

From: Andrew Bernier <andrew@kaexperiential.com>
Sent: Friday, December 16, 2016 11:36 AM
To: Mireya Turner
Subject: Cannabis Policy Feedback

Hi Mireya,

Thank you for all of your hard work and help for everything.

After the meeting I would like to provide some issues / recommendations on the draft ordinance below. Most of my concerns were voiced during public input but not everything. I also have a few questions for clarification.

Issues

- (25) Type 2 & (5) Type 3 licenses are not nearly enough to accommodate the thousands of growers in Lake County who provide massive economic support to local businesses and feed our families.
- Since it is the intention of the policy to bring growers out of the shadows, the county should draft regulations that provide a clear path in order for us to transition into legitimate, tax paying businesses. The current regulations discourage compliance with such a limited number of licensing opportunities.
- Some of the regulations are prohibitively strict for small to mid size growing operations. Especially having 3 - 4 wells for an operation that is 2,500 - 10,000 sq ft in canopy size.

Recommendations

- **Provisional Licenses:** My recommendation would be to give out 3-month provisional licenses asap to begin the outdoor medicinal growing season.
- Each grower would need to pay a fee for a provisional license in addition to a deposit towards an annual license.
- These fees could be placed into a trust which will be used to hire a cannabis team to inspect / monitor, as Bob indicated that the only reason the licenses are so limited is that he doesn't have the staff / budget to enforce the regulations.
 - It states in the Prop 64 bill that each county is allowed to charge fees reasonable to cover their administrative costs to enforce the program. Growers will be happy to pay these fees.
- **Inspections:** County Staff or 3rd Party Inspection. Mendocino & Humboldt counties have Sheriff-approved 3rd party inspectors that growers can schedule to inspect their operation for compliance (at the growers expense). To alleviate some budget constraints on the county, 3rd party inspectors should be considered.
- Once county staff or a 3rd party inspector monitors a grower's operation, the county would have 3 options:
 - 1) Approve an annual permit if the operation is in full compliance

- 2) Provide mandated adjustments to the operation and extend the provisional license for another 90 - 180 days for growers to come into full compliance. Growers would be required to pay for a follow up inspection.
- 3) For operations that have gross negligence or disregard for regulations after inspection, revoke the provisional permit and require abatement
- **Grandfather Clause:** As discussed during the meeting, a grandfather clause should be included for growers compliant with Article 72 as of the date when the ordinance is signed.
- **Lottery:** The lottery is a moot point if grandfathering is allowed and there are only 25 licenses available. There are hundreds if not thousands of growers who will apply for grandfather licenses. This is another reason the # of licenses must either have no cap or have a finite date when growers must apply by.
- **Wells:** It is unreasonable to expect small growers to build out 3 additional wells before beginning cultivation this season. Requiring this in the 1st year without any relief or pathway to come into compliance will lead to many growers staying in the shadows.
- My recommendation is to remove this 3 well requirement for operations under 10,000 sq ft OR give local growers who are compliant with Article 72 1 - 2 years to plan out for the expense and schedule the monitoring wells to be dug.
- **Setbacks:** There should be guidelines but flexibility based on the particular piece of land unique to its size / layout and neighboring properties. The main goal of the setbacks should be to not have grow operations visible or creating a nuisance to neighboring homes.
- **Cottage:** Cottage licenses should have the flexibility to be allowed to have up to 50 plants if their property is conducive in size and location. For instance, if cottages lie on 10+ acre properties, they can have 50 plants & 5,000 sq ft.
- **Cultivation / Canopy Area:** Growers should be taxed on canopy size and not cultivation area. We shouldn't be paying taxes on a space that is empty or used for trimming, storage, etc and not actual cultivation.
- **Pg 68:** Prop 64 indicates State Licenses won't be issued without local licenses or approval. So in order to get a state licenses I believe we 1st need a local permit. I think this clause should be removed as its a catch 22.

Questions:

- The draft ordinance mentions an 'overlay district' and permits allowed within & outside the overlay district. Does this mean the orange areas from previous maps? I didn't see it in the most recent powerpoint. To be specific, while reading page 14, 15 & 20. My question is if I have property located in an RR or RL zone that is outside of the overlay district and not within the proposed cultivation areas, will I still be allowed to receive a 2B NM/MC permit as long as its not within the city growth boundaries, viticultural areas and not near a school, etc?
- **Microbusiness:** Prop 64 gives clear direction for Microbusinesses. There is nothing written in the draft to accommodate these licenses. I think it would be a great thing for the county to have cannabis tours similar to the Wine Tours. Where consumers can see small scale grows, try out products, learn about the growers process/organic techniques, strains, etc. and purchase directly from the microbusiness. This would drive tourism tax revenue to hotels, restaurants and more.
- **License Caps:** Just wanted some clarity, for instance on page 75, it says 1B MC, 1B NM, 2B MC, and 2B NM - 25 permits. Does this mean 25 each, for a total of 100 licenses? Or 25 total between these licenses?

Thanks!

Andrew

Mireya Turner

From: Craig Shell <konoctifarms@gmail.com>
Sent: Friday, December 30, 2016 1:27 PM
To: Mireya Turner; Robert Massarelli
Subject: Cannabis draft ordinance

Follow Up Flag: Flag for follow up
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Robert Mazzarelli

Regarding planning department proposal December 15, 2016.

If one set out to design a regulatory scheme to benefit a small special interest group One could have done no better than the regulatory program advanced by the planning department at the December 15, 2016 Cannabis policy update.

By limiting the available parcels to a handful in the county.

By Capping type 2 and type 3 permits to 25 and 5 respectively.

Only large well capitalized entities will be allowed to cultivate Cannabis in lake county.

These enterprises maybe organizations from outside the county.

However it is more likely to be the same existing agribusiness, which has here to for decried the advent of local Cannabis farmers.

I.e. The farm bureau!

The farm bureau arguments of terpene contamination, smells, and even rising land value is little more than a smoke screen. The real issue is power, maintaining the political and economic control of this county.

Mistakenly or intentionally the planning departments proposed regulations services those interests exclusively.

To the detriment of the will of the people of lake county and setting aside the Board of supervisors mandate.

AUMA not only passed at the ballot state wide but also here in lake county.

Measure C passed overwhelmingly in lake county.

The BOS mandate,

1. Tax revenue
2. Jobs
3. Bringing existing cannabis farmers into compliance

The planning departments proposed regulations will do nothing to address these issues.

To achieve the BOS revenue goals we estimate that a minimum of 600 cultivation permits will need to be issued. This number represents less then one quarter of existing cannabis farmers currently operating in lake county.

Planning department personnel have made public statements that 90% of existing Cannabis farmers will not qualify for a local permit.

We feel that 25% to 50% is a much more realistic goal.

Not only from a tax revenue and jobs stand point.

If we want to become an exporting county and a identified Appalachian in the marketplace.

The theory that Lake and Mendocino could become the Napa and Sonoma of cannabis will require a critical mass of products entering the market.
We cannot discount the benefits flowing to the poorest county in California by a diversified income to a large number of small farmers.

If we adopt the same consolidation as the existing wine grape industry.
Lake counties wealth will continue to be extracted providing little to no benefit to county residents.

Recommendations,

Removal of the AVA exclusion zone and 1/2 mile exclusion from public lands, tribal lands, AVA's.
This approach leaves very little if any land available for cannabis cultivation.

Removal of the requirement of three monitoring wells per site.
This sets a very dangerous precedent. If the county is going to require three monitoring wells for a 10,000 square-foot or less permit. One should extrapolate that all further permits issued on projects of 10,000 ft.² or more will require three monitoring wells irrespective of cannabis.

Caps on permits, for optimal results we feel that permits should be issued based on market forces. The argument the County planning does not have the staff to handle an influx of permits can be easily remedied by the issuance of provisional permits.

By issuing provisional permits The county will be able to collect the necessary revenue, (permit fees and taxes) at the onset.

Secondly this addresses the Board of Supervisors mandate to bring existing farmers into compliance. By issuing provisional permits, existing farmers will be identified and start the compliance process.

The concept of provisional permits with regards to cannabis cultivation is not new. It is been implemented successfully in at least two other counties in Northern California.

Removal of the 300 foot setback requirement from adjacent property.

This will require 600 feet setback total (300 feet either side) In practice 20 acre parcel's will not be able to meet the setback requirement.

Also a good number of larger parcels will not be able to meet this setback requirement do to optimal placement for the grow site.

We suggest that cannabis setbacks are aligned with requirements for other existing agricultural uses.

Qualified third-party site inspections.

We feel this will expedite the permitting process and relieve much of the burden from the planning department personnel.

We're looking forward to a thoughtful and considerate reevaluation of the planning department proposal dated December 15, 2016.

We are hopeful that any final draft will take into consideration the need for a regulatory environment which will facilitate the time sensitive growth of this nascent industry.

Mireya Turner

From: Bob <bob@thevillabarone.com>
Sent: Friday, December 30, 2016 4:10 PM
To: Robert Massarelli; Mireya Turner
Subject: Upcoming cannabis ordinance

Follow Up Flag: Flag for follow up
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Hello Bob & Mireya,

I hope you are enjoying the holidays and getting a few days of needed respite from the challenges of the cannabis ordinance.

I would like to share with you some of the findings and information regarding water consumption and cannabis and grapes. I found the comparison interesting and informative and I hope you will consider this information when finalizing the cannabis ordinance. This information was gathered from speaking to industry experts in both viticulture planning and cannabis producers and references the Lake County Watershed Protection District publication dated March 2006 (<http://www.co.lake.ca.us/Assets/WaterResources/IRWMP/Lake+County+Water+Inventory+and+Analysis.pdf>) My goal in collecting this information was to determine the environmental impact specifically to water usage of growing cannabis in Lake County.

Vineyard water consumption can be calculated to be from 0.3 to 0.8 acre ft per year per acre. This number depends on the soil type on which the grapes are grown (sand, or clay, etc). For this analysis, I am using the middle of the range (0.5 ac ft per year). The conversion of ac-ft to gal is 326,000 gal per ac-ft. Using this calculation, a one acre vineyard will use approximately 163,000 gallons of water per year. $1\text{ac} \times 0.5\text{ac-ft} \times 326,000 = 163,000$ gallons of water.

An alternative method to measure vineyard water consumption is: # vines X water requirement per vine X number of weeks of water per season. Using this method, a one acre vineyard will consume 154,000 gallons of water in one season. These numbers are in close agreement with the avg usage calculated above of 163,000 gallons. $1,400\text{ vines} \times 5\text{ gal} \times 22\text{ weeks} = 154,000$. A 10ac vineyard would consume an astounding 1,630,000 gallons of water in one season.

In comparison, a 10,000 sq ft cannabis planting will consume 150,000 gallons of water in one season. Using the approximate values of 100 plants X 10 gal water per day X 150 days = 150,000 gallons of water. This is a very generous estimate as many organic cannabis farmers use more like 5 gal of water per day, not 10, which would reduce the annual water consumption to 75,000 gal. Sticking with the 10 gal per day estimate a 20,000 sq ft planting will use 300,000 gallons of water.

I think we would all agree that no one would bat an eye at a 1ac grape planting.....No requirement for test wells or anything else for that matter, even though it would consume more (probably much more) water than a 10,000 sq ft cannabis plot. A 10ac vineyard project (tiny by industry standards) would not require any test wells and I suspect little to no prohibition, yet it would consume 1.6 million gallons of water. It is my understanding that even very large vineyard plantings are not generally "required" to have monitor wells unless there is significant objections from local residents.

Another important point with regard to water consumption and the water table is to consider the relative size of the proposed project to the size of the parcel. For example a ½ ac cannabis grow on a 160 ac parcel (as would be the case in my situation) will have absolutely NO impact on the water table. Based on the Lake County Watershed Protection District publication dated March 2006 (see link above), The average annual rainfall for the county is ~30" (2.5 ft). The typical recharge rate of rainwater into the aquifer is 10-15% per ac-ft. A 160ac parcel will collect and recharge the

aquifer several million gallons of water per year. Much more than even a 1ac cannabis plantation could ever use. $2.5\text{ft} \times 0.10 \text{ recharge per ac-ft} \times 160 \text{ ac parcel} = 40 \text{ ac-ft per year of recharge}$. $40\text{ac-ft} \times 326,000 \text{ gal per ac-ft} = 13,040,000$ gallons of water recharged per year.

Let's work with facts not fear. Organic cannabis grows of the size under consideration in most if not all cases will not impact the available water in this county. I urge you to remove the well monitoring requirement and refrain from broad brush ordinances and move toward permitting that strongly takes into consideration case by case situations. Legal growers want a vibrant, safe, environmentally and economically healthy Lake County. Please work with us to help make that a reality.

Sincerely,
Bob

Bob@thevillabarone.com
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PO Box 1078
21825 Jerusalem Grade Road
Middletown, CA 95461
707-987-8823

Donna Dailey Lee
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QPN#s 004-038-040-000 and 004-040-050-000

6 January, 2017

To: Bob Mezarelli and Miryaya Turner
Lake County Planning Department

I am contacting you regarding the rules being developed to govern Lake County's recently passed Measure C.

I have owned my property at 8367 15th St, Mendocino National Forest, since 1976 and I wish to continue growing my Medical Cannabis outside, organically. I cannot tell if my property falls within your designated boundaries, and I would never consider growing medical cannabis inside due to unavoidable risks from pests, molds etc. What determines where your boundaries fall within the National Forest on private lands?

My other specific concern regards the statement that any person for whom a caregiver grows must be a resident of Lake County? This seems cruel to me. I grow for my 71 year old sister, my closest blood relative, whose problems with arthritis just led to a knee replacement. She owns her own home in San Mateo County and works full time with a long commute. She is paying California taxes. Why shouldn't I be able to grow her medicine for the salves and tinctures she relies on for pain management?

Thank you for your time and patience resolving issues.
Please add me to your e-mail list for updates.

Thank you,
Donna Dailey Lee

Bill Stockton

January 9, 2017

RECEIVED

Robert J. Massarelli, AICP
Director
Community Development Department
255 N. Forbes Street
Lakeport, CA 95453

JAN 09 2017
LAKE COUNTY COMMUNITY
DEVELOPMENT DEPT.

Dear Mr. Massarelli,

As I learn more about the development of the marijuana grow project I am more concerned about the development of this project. From my observation, you have no concept regarding the struggles small farmers endure just to survive in this county. Even more of a concern is the fact that you have absolutely no knowledge of farming activities. You're familiar with the odors, dust, sounds or chemicals used in farming activities. So how can you develop a fair ordinance regulating a farming activity when you have no knowledge of farming activities? I don't think it is possible to do the project justice unless you take the time and put in the effort to learn at least a minimal amount about farming. Growing marijuana is one of the most benign farming activities of nearly all farming operation in this county. However, you have no ability to compare it to any other farming activity because you know nothing about the other activities. How can you compare the odor from a marijuana plant to that of other farm activities if you have not experienced any of their smells and odors? I don't believe you have ever experienced your eyes burning from the nitrogen (and other gases) given off by chicken manure or experienced the difficulty breathing from the effects of the sulfur being sprayed on the vineyards. I doubt that you have ever experienced the smell from a hog farm or that of a goat farm. Furthermore, I don't think you have suffered from the hay fever one (like myself) may experience from the pollen in the air during the haying season. The chemicals used for marijuana plants are far less toxic than many of the chemicals used for other agricultural crops. Yet, from some of the comments made at the Planning Commission hearings, you expressed concern over the chemicals used on marijuana plants. Are you equally concerned over some of the chemicals used in other farming activities which can be much more toxic? I don't think so and that isn't right. You have the obligation to at least learn the basics about the various smells, sounds and dust associated with farming activities so you can make a fair and impartial assessment of growing marijuana with that of other farming activities. As it is, you have clearly demonstrated that you know nothing of any farming activity, including marijuana. Let me enlighten you on a few facts:

1. The State of California has passed several Right-To-Farm bills. All of them serve one purpose and that is to give the farmer the right to farm their land. I have included a copy of the benefits received from farming as outlined in the *2014 FARM BILL* (Agricultural Act of 2014). I have also included a copy of the *NOTICE OF FARMING PRACTICES* one must sign if they construct or buy a single-family dwelling in a rural agricultural area. By signing the document, they indicate that they *understand* and *agree* to the conditions of the Right-To-Farm. In this county, marijuana growing has been classified as a farming activity. It should be treated as a farming activity. The state classified the cottage license as a "Cottage Cannabis FARMING License". You don't seem to be aware of Lake Counties *NOTICE OF FARMING PRACTICES* document or what it means. Your ignorance of this is an atrocity because it clearly states that "*Lake County has determined that INCONVENIENCES or DISCOMFORTS associated with such AGRICULTURAL operations or activities SHALL NOT be considered to be a NUISANCE*". Yet, you stated that you wanted to minimize the negative impact on surrounding residences by imposing a large setback from the property lines. This document states that the residences MUST be AWARE and willing to ACCEPT that there could be an inconvenience if they choose to live in an agricultural area. Therefore, by this mandate, *it is not the responsibility of the farmer to protect the residence in the area*. It's the responsibility of the residence to accept any inconvenience or discomfort from living in an agricultural area. Please read the document!

2. Find any other farming activity that has as a setback from the property line. Hogs, goats, chickens, cattle or any farm crop can go to the property line. You stated at the last Planning Commission hearing that you wanted to use the setbacks to minimize the *negative impact* of a marijuana grow. Exactly what 'negative impact' are you trying to minimize. I assume it is odor. I don't think you have a clue about the odor given off by a blooming marijuana plant. A marijuana plant gives off zero odor until it starts to bloom and then, it only last 30 to 45 days. The smell from a blooming plant is nothing compared to the above mentions farm animals, and they can go to the property line. I suspect that most of the complaints regarding the smell from marijuana is from someone smoking it and not from the blooming plant. Most people associate the same odor from both processes but the odors are not even close to being the same. The blooming plant has 10 times less odor than someone smoking it. If you really want to reduce the negative impact, stop people from smoking it. A reminder that the NOTICE OF FARMING PRACTICES states that "*Lake County has determined that inconveniences or discomforts associated with such agricultural operations or activities shall not be considered to be a nuisance*". This is referring to odors, noise, insects, fumes, dust and operation of machinery. Additionally, most of the complaints I heard were from people living in residential areas and not from people living in rural agricultural areas. Therefore, there should be no setbacks from the property line. Restricted from view, okay but no setbacks.
3. You made the statement at one of the hearings that Rural Residential parcels are generally located near a residential area. Are you kidding? The zoning of parcels is based entirely on the parcel size. In absolutely no way is the zoning related to geographical location. My property is zoned Rural Residential and I am approximately seven miles from Kelseyville, seven miles from Lower Lake and about sixteen miles from Lakeport. There are Rural Residential parcels located half way between Upper Lake and Lake Pillsbury. If you check your maps you will probably find parcels along South Main Street Zoned Agriculture, located amongst commercially zoned parcels. The fact that rural residential has the word "residential" associated with it, does not in any way suggest it's geographical location.
4. No other farming practice has a permit allocation. You have recommended twenty-five permits for marijuana farms. Do you have any idea how many agricultural parcels there are in Lake County? With this miniscule number of permits, you will simply force current growers to continue growing illegally. The county will neither have control of the marijuana grown in this county or collect any of the permit fees. Additionally, the county will not be able to collect any of the taxes associated with the processing and sale of medical cannabis. You will continue to drive the practice underground. No one benefits from such a limited number of permits. You have the option to create a sensible and reasonable ordinance to maximize the financial benefit as well as gain the most control over the cannabis practice or create some sloppy, ineffective ordinance that continue to keep the practice underground. Unfortunately, too many administrators think it's ok to create some ill-conceived regulation with the ideas that it can be fixed sometime later. There never seem to be enough time to do it right the first time but there is always time to do it over. There should be no allocations for permits or licenses. Supply and demand will regulate the proper number of sites. While the Federal Government won't openly recognize the medical benefits for cannabis, doctors, medical professional, hospitals do recognize the medical benefits. I use a tincture to eliminate the pain from my arthritis. IT WORKS better than any other medication I can buy.

Cc Supervisor Moke Simon, Supervisor Jeff Smith, Supervisor Jim Steele, Supervisor Tina Scott,
Supervisor Rob Brown



COUNTY OF LAKE
COMMUNITY DEVELOPMENT DEPARTMENT
Planning Division
Courthouse - 255 N. Forbes Street
Lakeport, California 95453
Telephone 707/263-2221 FAX 707/263-2225

Construction of any single family dwelling in Lake County requires the following "Right to Farm" form to be signed by property owner(s). (Lake County Code, Chapter 3, Section 3-44.3)

NOTICE OF FARMING PRACTICES

"The County of Lake recognizes and supports the right to farm agricultural lands in a manner consistent with accepted customs, practices, and standards. Residents of property on or near agricultural land should be prepared to accept the inconveniences or discomforts associated with agricultural operations or activities, including but not limited to noise, odors, insects, fumes, dust, the operation of machinery of any kind during any twenty-four (24) hour period (including aircraft), the application by spraying or otherwise of chemical fertilizers, soil amendments, seeds, herbicides, and pesticides, the storage of livestock feed and other agricultural commodities and the storage, application and disposal of manure. Lake County has determined that inconveniences or discomforts associated with such agricultural operations or activities shall not be considered to be a nuisance. Lake County has established a grievance committee to assist in the resolution of any disputes which might arise between residents of the County regarding agricultural operations or activities. If you have questions concerning this policy or the grievance committee, please contact the Lake County Agricultural Commissioner."

Signature of Property Owner

Date

A.P.#

Zoning



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California and the Farm Bill

A VISION FOR FARMING IN THE TWENTY-FIRST CENTURY

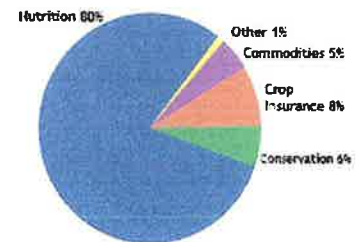


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THE 2014 FARM BILL (Agricultural Act of 2014)

Projected outlays under the 2014 Farm Act, 2014-2018



Total outlays = \$489 billion

Source: USDA Economic Research Service using data from Congressional Budget Office, Cost Estimates for the Congressional Budget Act of 2014, Jan 2014

- Nutrition
- Crop Insurance
- Conservation
- Commodities
- Other

The Farm Bill creates jobs. Farming is the backbone of our economy and our daily lives, providing healthy fruits and vegetables, nuts, dairy, grapes and grains that we eat and drink, cotton for the clothes we wear, and energy to power our lives. California produces more than 400 crops on 81,500 farms that employ 800,000 laborers (double the number of state employees). Farm Bill programs expand job training and resources, foster job creation in the green economy, and build resources in rural communities to improve the business environment.

[Expand](#)

The Farm Bill improves public health and nutrition.

The Farm Bill is not just for farmers; it provides funds to grow, promote and purchase safe and healthy foods. California, one of only five Mediterranean growing regions in the world, is able to provide an abundance of crops, over half the nation's fruits, nuts and vegetables alone. Today, with a renewed interest in products that are healthier, safer and more locally grown, California's farms are even more important. This resurgence is building bridges between our food policy network and our rural communities and food deserts, between farms and urban environments, between nutritionists and farmers.



[Expand](#)

The Farm Bill protects our environment and promotes renewable energy.

The resources and tools for California to address climate change, conservation and renewable energy are found within the Farm Bill.



Protecting the Promise of CA Ag

Report: Improving Food Access

California Agricultural Vision 2030

Strategic Plan for CDFA: 2013-2018

Planting Seeds: The CDFA Blog

Cal Roundtable: Ag & Environment

CA Agricultural Production Statistics

Invasive Species Council

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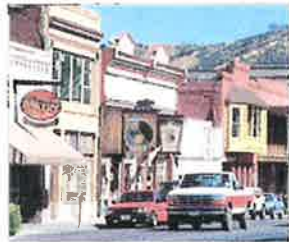
California Climate Change Portal

More than 43 percent of the land in California is used for food production. In contrast, our urban footprint is about 5.5 million acres, or five percent of California's land base. Farming is our backyard and provides us many benefits in addition to food and fiber.

[Expand](#)



The Farm Bill revitalizes rural communities.



The Farm Bill is also about rural communities, supporting healthcare, housing, communications, and economic development within critical areas of our state. In building jobs for the future, we need to develop infrastructure, improve water and sewer facilities and improve employment opportunities. The Farm Bill helps connect these dots – supporting more than \$59 million in water and wastewater grants and loans, as well as over \$115 in loans supporting new job opportunities and business planning.

The Farm Bill invests in education.

Research is critical to advance and sustain productivity as well as spur innovation within our economy. The farm bill invests in California's university systems, providing research funding to improve air and water quality, integrated pest management, food safety, and on-ground resources to enhance farming. By investing in education and research the farm bill is supporting California's world-renowned universities and contributing to the important research that assists the largest farm state in the nation.

California needs to speak with one voice to create bold change in food and agricultural policy – becoming a driver for jobs, the environment, rural communities, and improved health for the state and nation.

News Resources

[The 2014 FARM BILL \(Agricultural Act of 2014\)](#)

[USDA Blog Post: The President Signs the Farm Bill: "A Jobs Bill, an Innovation Bill, a Research Bill, and a Conservation Bill"](#)

[The Washington Post: The \\$956 billion farm bill, in one graph](#)

[Planting Seeds Blog » Wanted: Ag Leaders for Public Policy Duty – Many Potentially Groundbreaking Initiatives Now on Table](#)

5

Mireya Turner

From: Lawrence-Havenwest <lawrence@havenwest.co>
Sent: Tuesday, January 10, 2017 12:30 PM
To: Mireya Turner
Cc: Robert Massarelli
Subject: Additional information regarding set backs and odor control
Attachments: Lake County Draft Ordinance Considerations and Recommendations.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Mireya and Bob,

I hope this email finds you well, and that you've had a warm and joyous New Year celebration.

Since our last conversation, per request, I've looked into more data and findings research on setbacks and odor control. I was able to look further into what other county's have done, and found that their results were based on some thorough research that we can leverage on for Lake County. Please see findings and explanation as attached for your consideration.

Another note, as I was researching these, I came across some interesting numbers as it relates to permit numbers. I understand our biggest challenge at Lake is having the staff bandwidth to properly review the applications and this doesn't change that. But it might be good information to have as you consider Lake's permits. Lake county currently holds certain strategically advantageous position in this industry, and the benefits from community development, job creation, and tax revenues will serve the county well in many years to come.

Lake County Population - 63860 (2013)
Square mile (land) - 1256 sq mi
permits:?

Calaveras County Population - 44515 (2013)
square mile (land) - 1020 sq mi.
permits: 1015

Humboldt County Population - 134493 (2013)
square mile (land) - 3568 sq mi
permits applications: 2337

Best regards,
Lawrence

Lake County Draft Ordinance Considerations and Recommendations

Consideration 1:

Humboldt County imposed setbacks of **30** feet from property line, parcels under 5 acres set back at least **300** feet from existing residences on adjoining parcels, and **600** feet from any School, School Bus Stop, Church or other Place of Religious Worship, Public Park, or Tribal Cultural Resources. The minimum setback required from property lines or adjacent uses may be waived or reduced with the express consent of the adjacent property owner and occupant.

Mendocino County imposed setbacks for outdoors or using mixed light within **50** feet of a legal parcel under separate ownership, within **100** feet of any occupied legal residential structure located on a separate legal parcel, and within **1000** feet of a youth-oriented facility, a school, a park, or any church or residential treatment facility.

Calaveras County imposed setbacks of **30** feet from property line, and **1000** feet from any parcel containing a "sensitive use" as that term is defined in Calaveras County Code 17.91.060(B).

Recommendations:

All the above counties have had extensive research in considerations for the public and actual land usage. The common set back from property line for outdoors and mixed light use is **30-50** feet. The set back from nearest adjacent residential structure is **100** feet (Mendocino County), and/or may be waived or reduced with the express consent of the adjacent property owner and occupant.

Ultimately, we recommend the county to impose the following set backs for outdoor and mixed light

- 50 feet from property line of a legal parcel under separate ownership
- 100 feet from nearest adjacent residential property owner and occupant.
- The minimum setback may be waived or reduced with the express consent of the adjacent property owner and occupant.

Consideration 2:

The reasoning for imposing set backs is due to odor mitigation caused by cannabis plants. By looking at other countys' research and findings, the impact of odor from commercial cannabis cultivation is "less than significant with mitigation incorporation"

- Humboldt County's Final Mitigated Negative Declaration – Less Than Significant With Mitigation Incorporation
 - Cannabis cultivation operations may have odors associated with them, especially during the final parts of the cultivation cycle (typically beginning in August and continuing until harvest). Generally, the larger the size of cultivation activities, the greater the potential for odor to be evident. Many of the operators who will participate in local regulation and oversight under the ordinance are located on large parcels (> 5 acres in size) where cultivation sites enjoy greater separation from neighboring land uses, and where attendant odors are less likely to be detectable from neighboring lands. Preventing nuisances associated with the odor of cannabis under cultivation was one of the primary goals of the second phase of the County's Medical Marijuana Land Use Ordinance (Ordinance # 2523), which restricts personal use cultivation on parcels that are 5 acres or smaller in size. Under the proposed ordinance, larger cultivation operations will be subject to discretionary permits where neighboring landowners will be given an opportunity to comment and be notified of pending permit decisions. This will provide opportunity for dialogue and mitigation through careful siting and operational restrictions to address potential odor issues. With mitigation measures, potential odor presents a less than significant impact.
 - <https://humboldt.gov/DocumentCenter/View/53373>
- Mendocino County's Initial Study-Mitigated Negative Declaration - Less Than Significant With Mitigation Incorporation
 - The proposed MCCR provides several mechanisms to prevent air quality impacts, particularly odors, from impacting sensitive receptors and large numbers of people who may object to the strong odor associated with cannabis cultivation during the flowering phase. Furthermore, cannabis cultivation is identified as an agricultural use. Odors from agricultural operations on appropriately zoned parcels are a typical and anticipated circumstance and are not typically defined as a nuisance. According to the MCAQMD, there is currently insufficient evidence that the burning of vegetated matter from the growing of cannabis would not result in significant odors that could affect nearby receptors. Therefore Mitigation Measure AIR-2 will be applied to prohibit burning of excess cannabis plant material. If concentrated by ventilation systems, the odors from larger indoor, and greenhouse cultivation operations have a substantially greater potential to generate offensive odors on adjacent properties, even where mandatory setbacks from property lines and adjacent residences have been

met. Mitigation Measure AIR- 3 addresses this impact by requiring filtered ventilation systems be installed in mixed light and artificial light cultivation structures. With mitigation incorporated, these impacts are reduced to less than significant level.

- [http://www.co.mendocino.ca.us/planning/pdf/1.mccr is public draft 2016 1107.pdf](http://www.co.mendocino.ca.us/planning/pdf/1.mccr%20is%20public%20draft%202016%201107.pdf)

Recommendations:

Both Humboldt and Mendocino County have done initial CEQA reviews for air quality management. In both cases, odor is considered less than significant with mitigation incorporation. In Humboldt's case, they have set requirements >5 acres as parcel requirements for commercial cultivation. Comparably, Lake County's existing ordinance requires a 20 acre minimum, which results in a larger separation between adjacent parcels, thus are less likely to detect odors from neighboring lands.

In Mendocino County, cannabis is treated as an agriculture use. Odors from agricultural operations on appropriately zoned parcels are a typical and anticipated circumstance and are not typically defined as a nuisance. Since the land use is appropriately zoned for its use, just as any agriculture product, there should not be prejudice against a specific crop as you would for example towards corn or tomatoes. Instead, the odor coming from greenhouses or indoor are much more significant based on the density coverage and concentration of odor in a smaller area. But this can be resolved with a simple air filtration system, which reduces the impact to less than significant level.

Since the county already has a minimum 20 acre requirement (as compared to Humboldt's 5 acre), we already have are requiring a larger parcel that will increase the spacing between cultivation site and neighboring residence. This should more than account for the possible A possible element on the point merit ranking system would be recommended for applicants to receive higher points if they implement an air filtration system for greenhouse and indoor structures.

Mireya Turner

From: Robert Adelman <rob@metalogosinc.com>
Sent: Sunday, January 08, 2017 2:12 PM
To: Robert Massarelli; Mireya Turner
Subject: Follow up on meeting - Benmore Valley Ranch
Attachments: ML_canna_es.pptx; profile_susan.pdf; ConservationPerformanceSummaryBenmore.pdf; ConservationPerformanceDetailBenmore.pdf; conservation_program_guidelines.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi,

Thanks for the time on Friday. It was a pleasant and unexpected surprise to see such professionalism, deep experience, and expertise in Lake County. I look forward to working together!

Attached are a few documents:

1. An executive summary for Meta Logos, Inc. I would love to locate the business in Lakeport and, when appropriate, create a steering committee on economic development. I agree that having a seed business and bringing high-tech to Lake County makes sense. Many small businesses are being priced out of the Bay Area.
2. A short profile on Susan Bandura, the branding guru. She may be able to make our tentative meeting on Wednesday.
3. I've attached information on the NRCS conservation program as reference criteria for best practices in land management.

I strongly suggest you scrap the point system and two-tier application process based on best farming practices - letting lack of staff drive process protocol is a bad idea. Re-creating a bureaucracy for farming practices to be administered by front line planning staff at the beginning of the applications process is inefficient.

There needs to be an analysis that:

1. Bifurcates the mitigation of potential environmental damage from the cash flow/staffing issue.
2. Bifurcates the poor farming practices from the past business model for cannabis from the new business model. Solving a problem from that past that does not apply to the future, for political reasons, does not make sense. Rather than send a negative message of more overhead in the application process, have a program with positive incentives for the good actors.
3. Takes into account both the internal cash flow problem and the perception of investors. Often these are at odds and I believe there is a middle ground. As of now, the ship is sinking, all the big money is avoiding Lake County. I work with some of the biggest law firms in Sonoma County and they are advising their clients to steer clear. We can fix that and I am happy to offer my expertise (Mireya, feel free to contact Jim Burns as a reference for my work).

Creating a point-system bureaucracy to be self-administered by the county seems a waste of time, instead use an existing standard by reference and have financial incentive to participate (e.g., NRCS, CCOF, or any of the four independent companies vying for leadership in the organic cannabis farm certification market, for example <https://www.facebook.com/envirocann/> is a spin off of SC Labs, a partner of Meta Logos). The political issue the point system is addressing - environmental degradation - will be addressed in other ways once the state law kicks in, the real issue in that regard will be the illegal grows. Also, it makes no sense to treat cannabis *that* much different than other crops -- again, I removed 110 acres of vines being sprayed with Roundup and destroying a watershed, so getting raked over the coals for 1 acre of organic cannabis seems unreasonable. People are looking at solutions to problems of the past that will not apply to the future industry, it is changing at lightening speed.

The perception of political instability is causing investors to steer clear of Lake County, for now. We can change that. Time is of the essence since timelines to invest are tight to meet 2018 deadlines and the money is being invested as we speak. The methodology to publish an incomplete ordinance, with the goal of instigating a response from the public to help get it right, is understandable, but, adds to the misconception of instability. I wonder if there is a better top-down method to draft it without publishing drafts that scare people away? There are 2 or 3 law groups in Sonoma County that are advising a large majority of the investment community. I have been in contact with them, and, once we have a clean draft we can leverage these connections to change the perception quickly. Someone should work on a one-page targeted marketing document that summarizes, in concrete terms, that it is safe to invest in Lake County. I can ensure that it ends up in the right hands. As time allows, and with your approval, I would help with the drafting. We need to be paying attention to where the money is coming in and who is advising the investors.

The issue of changing the image of being "the poorest county" is an interesting one. Publishing the "placeholder" that only 25 permits can be issued, due to staffing limitations, scares the daylights out of investors. Who is going to come and invest, losing opportunity elsewhere, thinking that if they do everything right they still might not get a permit? Imagine what that would do to housing starts if there was an analogous limit on building permits published. Allowing the lack of staff available to process permits that would, in turn, bring in substantial income to the county, to dictate policy, ironically reinforces the "poor" image and perpetuates the problem. I recommend not publishing that limit, keeping that discussion internal, streamlining the process, and front loading permitting fees to ramp up the resources as applications come in. I know you mentioned that this is a 2017 problem and that you would increase staff by 2018, but, due to the timing of Prop 64 and the lead time to ramp up these projects, that is too late. Most of the money is coming in hot now, and by 2018 most investors will have staked claims and established franchises.

Please note this email is not for the public record. I will email you a more organized analysis for the public record.

Our meeting for 2PM Wednesday afternoon in the Benmore Valley is tentative. I will decide on Tuesday AM, depending on weather. Ideally we can all be there - Tim Blake and the Emerald Cup tea, Susan, and you.

Regards,

Rob

Meta Logos, Inc.

Cannabis Assay + Genetic Analysis

Molecular analysis is a critical, limiting component of specifying the profile of cannabinoids, terpenes, toxins, genetic markers, and other molecules present in a cannabis plant at various stages of growth, development, curing, and processing.

There is a *strong and growing market demand for more specific, robust, versatile, and less expensive analysis* to support intellectual property development and forthcoming lab testing standards.

Nanopore technology has seen rapid growth over the past decade as a new analysis technique that can dramatically improve the throughput and accuracy of molecular analysis, allowing direct observation of a single molecule. A nanopore is a tiny hole in a substrate. When the substrate is immersed in a solution, an electric current can be passed through the hole. When a molecule in the solution blocks the hole, the current is disrupted in a specific way that allows that molecule to be identified with high resolution in its 'native' solution soluble environment. *Meta Logos is the only company using transduction technology coupled to a nanopore device. Patent applications are pending for a variety of novel applications.*

Nanopore transduction was invented by Meta Logos' founder **Dr. Stephen Winters-Hilt** following over a decade of research in this area. Dr. Winters-Hilt has collected a large body of data on fully functional nanopore transduction detectors in which a transducer molecule is captured in the nanopore and "rattles around" in a characteristic way, producing a distinct signal under an applied electric current. The free end of the transducer molecule is designed to react with the molecule that is being detected. When this reaction occurs, the signal from the transducer molecule changes. The reaction duration is as long as necessary to allow for a very precise measurement of this signal change *by leveraging proprietary machine learning based analysis techniques also developed by Dr. Winters-Hilt.* Third party validation of the technology has been verified by publication of multiple peer reviewed papers and funded grants from **NIH** and **NSF**.

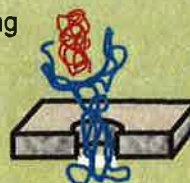
The Nanopore Transduction Detector (NTD) enables detection and direct observation of a single molecule with unprecedented sensitivity & specificity

At a Glance...

- **Nanopore transduction technology**
 - Fully functional nanopore transducers
 - Direct observation of a single molecule
 - Unprecedented sensitivity & specificity completely disrupts the molecular detection and analysis markets
- **Rapidly growing new market**
 - Broad range of applications in cannabis quality assurance, genetics, and intellectual property specification
- **Initial application partners**
 - Lab testing companies
 - Genetic Analysis companies
 - Concentrate producers refining processing parameters.
- **Seasoned executive team in place**
- **Capital efficient business plan**
 - ~\$380K invested to date
 - Over \$2M in federally funded research
 - Grant program to offset expenses
 - **\$2M - \$3M investment required to develop cannabis assay.**

Meta Logos Nanopore Transduction

- Molecule reacts with vibrating transducer molecule
- Multiple vibration cycles are measured for **very precise detection**



Meta Logos, Inc.

Marketing Strategy

Lab Testing- Meta Logos' Nanopore Transduction Detector is a fundamental tool that can be used across a broad range of cannabis related lab applications, including a high resolution cannabinoid assay and identifying genetic markers in support of intellectual property development.

Genetic Biomarkers – The discovery and specification of the composition of the genome and transcriptome for various strains of cannabis plant, under different growing conditions, with different curing processes, with possible post-processing into concentrates, etc., will allow for a rich foray into virgin realms of intellectual property development. Deep data collection will also provide a robust foundation for building predictive models which can be deployed in a clinical environment, enabling delivery of the most effective medicine for a specific malady. No other technology can “see” the fine conformational/binding interactions of interest or assay genomic and transcript structure.

NTD Devices - Meta Logos will sell a Nanopore Transduction Detector (NTD) and software as a Statistical Analysis Service (SAS) to the lab testing and genetics community. Once the lab is trained to collect data, Meta Logos' world class bioinformatics software will allow for unprecedented analysis, which will be used as a basis for intellectual property development.

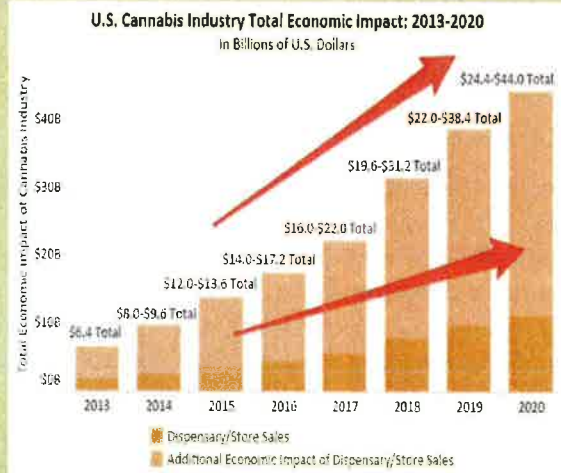
Partnerships - A key part of Meta Logos' strategy is to develop partnerships with companies that have leading positions in the rapidly growing and dynamic cannabis industry. As the cannabis industry matures and established molecular diagnostics firms enter the market, *Meta Logos technology will provide a distinct competitive advantage over established technologies such as mass spectroscopy, x-ray crystallography, FRET, and NMR.* Time is of the essence when it comes to establishing these strategic partnerships; once larger firms enter the market and establish a franchise around lab testing and patentability, it will be significantly more difficult to penetrate the markets. *Our Partnerships will be the first to develop advanced platforms for understanding and leveraging the unique composition and structure of the cannabis plant families' profound medicinal and industrial potential, and more...*

Product Development & Licensing Business Model with Multiple Revenue Sources - Meta Logos will co-develop the NTD cannabis assay and related genetic analysis platform to drive long-term revenue primarily through proprietary technology, licensing to labs for quality assurance, genetic analysis, and clinical applications. The company collaborates with partners and in its own lab to provide proof of concept and prototypes, serving as a bridge between the research bench and commercial products and services based on Meta Logos' nanopore and informatics technologies.

“Meta Logos’ development of the Nanopore Transduction Detector is akin to the invention of the microscope.”

Dr. Andrew Peck, CEO
PxBiosciences

The Cannabis Market Potential is Exploding



“This is probably the optimal time for market entry into the molecular diagnostics field for those who have viable alternative or enhancing technologies.”

Kalorama Information

Meta Logos, Inc.

Brief Company History and Intellectual Property

Meta Logos, Inc. was founded in 2009 to commercialize the groundbreaking inventions of Dr. Stephen Winters-Hilt, based on over a decade of important research in this area. The company's **Nanopore Transduction Detector** (NTD) is a biosensing platform that works at a scale where physics, chemistry, and biology merge, providing a complex and rich landscape for intellectual property (IP) development. Nanopore transduction is a fundamentally new concept supported by a portfolio of pending patents.

Future generations of scientists may see the development of the NTD as a watershed moment in the understanding of single molecule interaction on a nanometer scale, akin to the invention of the microscope. State-of-the-art results have been demonstrated in biosensing, multiplex assays, gene prediction, assays of cellular surface properties and SNP detection ("Single Nucleotide Polymorphism" in which a single base in the DNA differs from the usual base at that position, sometimes causing disease and very difficult to detect). Meta Logos' IP portfolio also includes adaptive machine-learning based signal processing algorithms that can be applied over multiple domains including bioinformatics, cheminformatics, robotics, and general machine-learning based signal processing.

Meta Logos' independent and partnership research efforts continue to yield valuable intellectual property for the company, which includes a recent patent application filing around the NTD Cannabis Assay in June 2016, copyrighted software, and trade secrets. Our partnership strategy is a synergistic relationship in which Meta Logos develops the platform while co-development partners drive the development of application-specific technology and markets. Dr. Winters-Hilt's ongoing academic research also supports Meta Logos business directions, including authoring multiple peer reviewed papers, books in progress, review articles, and conference presentations.

Dr. Winters-Hilt has raised \$2.4M in grant funding for nanopore research in his academic endeavors. We are confident Meta Logos can replicate that in the commercial realm, having raised \$350k in grant funding.

Key Competitive Advantages

Nanopore transduction technology provides a label-free mechanism to measure molecular dynamics via an electrical signal. It has the following key advantages, which position Meta Logos extremely well to capture market share in cannabis lab testing and genetic analysis.

Leveraging the Meta Logos Cannabis Assay, the company expects to form collaborative development efforts to carve out an industry-leading position in lab testing and genetic analysis. Fine discrimination between the 100+ distinct cannabinoids and other genetic markers will form the basis for uniquely identifying new strains and sub-strains, new processes for making concentrates, and refining clinical applications, while also providing the foundational data necessary to patent the discoveries. *Together we can be the first to discover, define, and patent a world of new inventions while advancing the science of cannabis for future generations...towards safer, higher quality, more affordable - **more effective medicine.***

- | | |
|--------------------------|---|
| High sensitivity: | We will be able to detect more distinct cannabinoids, with higher specificity, than competing technologies. |
| High speed: | A serial "tasting" process is used, unique to nanopore transduction. |
| Inexpensive: | No bulk preprocessing of samples, inexpensive device, easy to operate. |
| Versatile: | The direct study of single large molecules allows for the testing of multiple analytes from a single sample – antibody binding analysis, DNA/genetic biomarkers, or engineered probes based on aptamers can be detected from a single sample in one lab test. |

Meta Logos, Inc.

Executive Team

Chief Science Officer and cofounder - Stephen Winters-Hilt, Ph.D.

Dr. Winters-Hilt laid the foundation for his inventions in 1987 when he earned dual Bachelors of Science in Physics and Electrical Engineering, and a Master's of science in Applied Physics, from the California Institute of Technology. Mathematical theory learned as a visiting mathematical physics fellow at Oxford University (Roger Penrose, mentor) has inspired and directed his inventions. Dr. Winters-Hilt went on to earn his first Ph.D. in Physics, specializing in General Relativity and quantum field theory at the University of Wisconsin, followed by a second Ph.D. in Computer Science from the University of California, Santa Cruz (specializing in Machine Learning and Bioinformatics, with a research focus of developing original signal processing algorithms, based on machine-learning techniques, for application to gene prediction and nanopore current cheminformatics). Professor Winters-Hilt developed the NTD platform during nine years as a dual appointee with University of New Orleans and Children's Hospital of New Orleans before co-founding Meta Logos Inc. *Dr. Winters-Hilt has a unique academic and research background which enables him to study single molecule interactions at nanometer scale, using very sophisticated, original, signal processing algorithms.* His groundbreaking work is based on a deep understanding of core principles and the leveraging of original inventions both in nanopore device physics and advanced signal processing.

CEO and cofounder – Robert Adelman [rob@metalogosinc.com]

Silicon Valley Entrepreneur. B.S. Computer Engineering, University of Arizona 1987. Research at University of Arizona on clinical application of EE for new cancer therapies. Independent Consultant, Director of Information Technology at TGV, Inc., including business development, through initial public offering on the NASDAQ. TGV was Acquired by Cisco Systems; Senior Engineer with Cisco Systems. Managing partner and CEO of Adelman Development, a diversified real estate development firm. Rob learned to program computers at the age of 14 and has over forty years experience in the full life cycle of software engineering and business development.

CFO - Jay Leite

Former CFO of Borland, Inc. Background in finance, business development, licensing, and fund raising. One highlight of Jay's career is arms length negotiation with Bill Gates, CEO of Microsoft.

Marketing Strategy – Susan Bandura

Susan is one of the preeminent creative marketing and branding professionals in the US. She spent decades in direct marketing, received an MBA from Stanford, worked at large agencies on major accounts, and has been an independent consultant for 20+ years. Her clients include Microsoft, Netflix, Coors, Levis, and Banana Republic. Her expertise is in brand development and strategy. In boardrooms across the country, directors speak in hushed tones: "What would Susan Bandura say?"

Business Development and Operations – Kevin Chandler

Kevin earned his bachelor's degree in Chemistry from California State University, Fresno. Throughout the last nine years, he has worked in all aspects of the cannabis industry including cultivation, manufacturing, retail development, and branding.

Advisory Board – Mihai Manoliu

Mihai received his B.Sc. in Science, Technology & Society / Physics from MIT. He has over thirty-five years of consulting experience in technology and media, and served as the Director of Media and Technology for the American Board of Integrative Holistic Medicine.

In addition to our seasoned executive team, Meta Logos continues to attract world class advisors under a non-disclosure agreement.

Conservation Stewardship Program
Conservation Performance Summary Report

Application Number: 81910410095

Applicant: BENMORE VALLEY RANCH

Date: 2/8/2010

Geographic Area Ranking Pool: Agricultural Lands-N.Coast/Sierras-BF-Agricultural Lands - Beginning Farmer

Conservation Performance

Application Information for Payment Calculations:

	Acres	Existing Activity Points	Additional Activity Points	Conservation Performance Payment Points
Rangeland	173.1	218.14	293.57	511.71
Total	173.1	218.14	293.57	511.71

Application Ranking Information:

	Cropland, Pastureland, Rangeland
Total Acres	173.1
Conservation Performance Ranking Score	493.03

Stewardship Threshold Requirements Met:

Resource Concerns	Priority	Cropland		Pastureland		Rangeland	
		Time of Application	End of Contract	Time of Application	End of Contract	Time of Application	End of Contract
Air Quality		NA	NA	NA	NA	No	No
Animal	X	NA	NA	NA	NA	No	Yes
Energy	X	NA	NA	NA	NA	No	Yes
Plants	X	NA	NA	NA	NA	No	Yes
Soil Erosion		NA	NA	NA	NA	Yes	Yes
Soil Quality		NA	NA	NA	NA	Yes	Yes
Water Quality	X	NA	NA	NA	NA	No	Yes
Water Quantity	X	NA	NA	NA	NA	Yes	Yes

Existing Activities			
Conservation Performance Levels			
	Cropland	Pastureland	Rangeland
Air Quality	0.00	0.00	17.78
Animal	0.00	0.00	17.50
Energy	0.00	0.00	0.00
Plants	0.00	0.00	13.99
Soil Erosion	0.00	0.00	34.89
Soil Quality	0.00	0.00	51.44
Water Quality	0.00	0.00	29.71
Water Quantity	0.00	0.00	52.83
Existing Activity Points	0.00	0.00	218.14

Additional Activities			
Conservation Performance Levels			
	Cropland	Pastureland	Rangeland
Air Quality	0.00	0.00	28.64
Animal	0.00	0.00	77.44
Energy	0.00	0.00	30.77
Plants	0.00	0.00	57.46
Soil Erosion	0.00	0.00	28.25
Soil Quality	0.00	0.00	43.15
Water Quality	0.00	0.00	24.56
Water Quantity	0.00	0.00	3.30
Additional Activity Points	0.00	0.00	293.57

Activity Summary

Code	Unit	Activity Name	Year 1 Amount	Year 2 Amount	Year 3 Amount	Year 4 Amount	Year 5 Amount	Total Amount
<i>Rangeland Activities</i>								
ANM11	Acres	Patch-burning to enhance wildlife habitat	10.00	10.00	10.00	10.00	10.00	30.00
ANM18	No.	Retrofit watering facility for wildlife escape	0.00	0.00	1.00	0.00	0.00	1.00
ENR04	No.	Recycle 100% of farm lubricants	1.00	1.00	1.00	1.00	1.00	1.00
PLT02	Acres	Monitor key grazing areas to improve grazing management	173.10	173.10	173.10	173.10	173.10	173.10
SOE02	Acres	Protection of cultural resource	0.00	0.00	2.00	0.00	0.00	2.00
WQL03	Acres	Rotation of supplement and feeding areas	5.00	5.00	5.00	5.00	5.00	15.00

Conservation Performance Summary Report - Applicant Certification

Completed by applicant at time of program application:

I certify that the conservation activity and production system information and the written records or documentation supporting that information are accurate to the best of my knowledge. Written records or documentation are available and are being used for the management of my conservation activities and production system. If my application is pre-approved for funding, NRCS will request records and conduct on-site field verification to substantiate that the conservation activity and production system information represented was accurate.

I also certify that I have notified NRCS of all active agreements or contracts where I receive payments from another USDA conservation program on any of the land being offered for enrollment in the Conservation Stewardship Program.

I understand that the Farm Bill and Conservation Stewardship Program regulation prohibit payments to participants for new activities that were applied with financial assistance through other USDA conservation programs on the same land at the same time.

By my signature, I expressly agree with my agricultural operation's conservation performance levels represented on this Conservation Performance Summary Report and agree with all information contained on this report.

Applicant Signature: _____ Date: _____

Completed by NRCS and applicant during on-site field verification of pre-approved applications:

A. Verification of all potential duplicate payments has been completed with the applicants and all contracts have been reviewed to prevent duplicate payments.

B. NRCS will request written records and conduct on-site field verification to substantiate that the conservation activity and production system information represented by the applicant during the application process was accurate. Upon completion of the field verification, NRCS will identify the appropriate condition and action from below.

- ☐ NRCS verified information provided by applicant was accurate. Proceed with conservation stewardship planning, contract development, and contract obligation.

NRCS determined information provided by applicant was inaccurate because:

- ☐ Written records or documentation are unavailable. Determine the application is ineligible consistent with 7 CFR 1470.36.
- ☐ Field conditions or written records do not substantiate the use of the conservation activities and production system information represented. If NRCS determines the misrepresentation was intentional, then determine the application is ineligible consistent with 7 CFR 147.36.
- ☐ Field conditions or written records do not substantiate the use of the conservation activities and production system information represented. If NRCS determines the misrepresentation was unintentional, then rerank the application based on the conservation activities that can be substantiated.

Explanation (needed if inaccurate information is found):

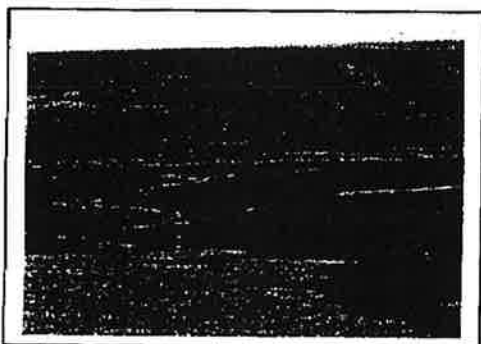
Designated Conservationist: _____ Date: _____

Applicant Signature: _____ Date: _____

This Conservation Summary Report is a part of the CSP application and contract documentation and must be maintained in the applicant case file.



Animal Enhancement Activity –ANM11- Patch-burning to enhance wildlife habitat



Patch-burning to enhance wildlife habitat

Use prescribed burning to create patches of different vegetation structure and species composition for the benefit of wildlife.

Land Use Applicability: This enhancement is applicable to pastureland, rangeland and forest land.

Benefits

Patch-burning is a grassland management activity for landowners interested in improving habitat for wildlife

while still maintaining forage production for livestock. This management activity helps create a mosaic of diverse vegetative structure and plant composition in the same pasture. Livestock also benefit as different plant species may be available, especially during mid-and late growing season vegetation slumps. Patches of different vegetation composition can extend and/or supplement livestock during the grazing season.

Criteria for Patch-burning to enhance wildlife habitat

1. Burn at least 10% and not more than 40% of the pasture in any year.
2. Avoid burning during peak nesting season for targeted wildlife species.
3. A minimum of two burn treatments should be applied during a 5 year period. Annual application by burning a different patch each year is acceptable and desirable for many wildlife species.
4. A written grazing management plan that identifies:
 - a) Wildlife management objectives describing how patch burning will accomplish those objectives.
 - b) Percentage of area planned to be burned by year.
 - c) Locations, total acres, planned year and season of burns.
 - d) The desired frequency of burning (example: burn same area once every 4 years) should be stated and based on the desired plant community's adaptation and response to fire.
 - e) Stocking rates that will allow for proper forage utilization.
 - f) Areas where fire is to be excluded for habitat considerations, such as desirable shrub stands, stream sides, etc.
5. Prepare a written prescribed burn plan for each prescribed burn that identifies:
 - a) Locations to receive burn treatment and level of patchiness desired
 - b) Time of burn
 - c) Firebreaks locations, if needed
 - d) Weather parameters for the burn (temperature, wind speed, relative humidity)⁵



- e) Burn plans must be conducted in accordance with all state laws.

Documentation Requirements for Patch-burning to enhance wildlife habitat

- Written prescribed burn plan identifying pasture, acres and dates of prescribed burn.
- A map showing where the activities are applied.

References

1. Fuhlendorf, S.D., and D.M. Engle. 2004. Application of the grazing-fire interaction to restore a shifting mosaic on tallgrass prairie. *Journal of Applied Ecology* 41:604-614.
2. Fuhlendorf, S.D., and D.M. Engle. 2001. Restoring heterogeneity on rangelands: ecosystem management based on evolutionary grazing patterns. *BioScience* 51:625-632.
3. Townsend, Darrell E. 2004. Ecological heterogeneity: Evaluating small mammal communities, soil surface temperature and artificial nest success within grassland ecosystems. Oklahoma State University. PhD Dissertation. 162 p.
4. Vermeire, L.T., R.B. Mitchell, S.D. Fuhlendorf, and R.L. Gillen. 2004. Patch burning effects on grazing distribution. *J. Range Manage.* 57:248-252.
5. USDA-NRCS. Prescribed burning (338) standard for respective state.
6. USDA-NRCS. Prescribed grazing (528) standard for respective state.



Soil Erosion Enhancement Activity – SOE02 - Protection of Cultural Resource



Cultural Resource Protection

Stabilization and protection of identified cultural resource and/or historic properties with vegetation to prevent damage from erosion and loss of cultural and historic deposits, including associated artifacts.

Land Use Applicability

Cropland, pasture land, range land and forest land.

Benefits

Culturally important and historic sites can be damaged by erosion. Historic and prehistoric cultural deposits, including associated artifacts and features can be lost or destroyed making later study or interpretation of the sites impossible. Revegetating these areas with conservation cover can protect the sites from further damage and loss of cultural and historic remains.

Criteria for Protection of Cultural Resources

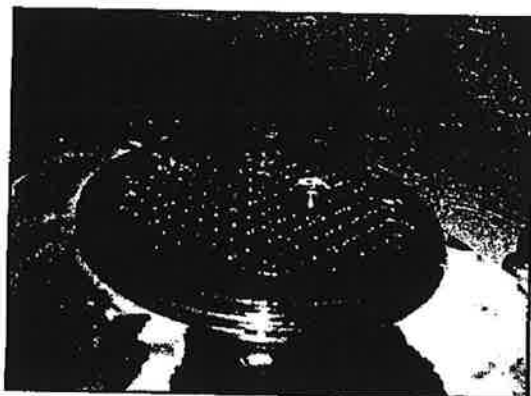
- Areas to be protected must be identified as a culturally significant or historic site and documented as such in one of the following ways:
 - 1) Listed on the National Register of Historic Places (NRHP)
 - 2) Determined eligible for listing on NRHP through Section 106 review (National Historic Preservation Act compliance).
 - 3) State government or Tribal government registry.
 - 4) State government or Tribal government inventory of historic places.
- Areas must be protected from further degradation by revegetating with conservation covers that emphasize the use of native species that enhance fish and wildlife habitat including pollinator habitat.

Documentation Requirements

- Documentation that the site meets one of the 4 criteria listed above.
- A map or sketch showing the location and extent of the area that is protected.
- Documentation of the plant species used for revegetation.



Energy Enhancement Activity – ENR04 - Recycle 100% of Farm Lubricants



Recycle 100% of Farm Lubricants

All farm lubricants such as oils, fluids, or greases, including all mineral-based oils, synthetic oils, or semi-synthetic oils used to reduce friction in equipment and machinery must be recycled. Recycling involves disposal of the lubricants through a recycling company or community recycling program.

Land Use Applicability

This enhancement is applicable on cropland, pastureland, rangeland and forest land.

Benefits

Lubricants are widely used on farms and ranches to reduce friction in a variety of machinery and equipment. Without proper disposal, lubricants enter the environment, especially groundwater or surface water. Good management of these wastes can help protect the quality of the groundwater and of drinking water supplies furnished by the watershed. The first step in reducing potential water quality degradation is to carefully purchase and use only essential products, reuse them when possible and recycle them at a oil recycling centers. Recycled lubricants may be converted back into lubrication oil or used to make asphalt or other oil-based products. It takes less energy to convert recycled oil back into lubrication stocks than to refine motor oil from a barrel of crude.

Criteria

Recycle 100% of lubricants used on the farm through a commercial recycling company or a community sponsored recycling program. Lubricants are defined as oils, fluids, or greases, including all mineral-based oils, synthetic oils or semi-synthetic oils used to reduce friction in equipment and machinery.

Documentation

- Documentation of the types and quantity of lubricants used on the farm during the year.
- Documentation of where and when the lubricants were recycled.



Plant Enhancement Activity – PLT02 – Monitor Key Grazing Areas to Improve Grazing Management



Monitoring Key Grazing Areas to Improve Grazing Management

Monitor key grazing areas on pastureland and rangeland to determine if current grazing management is meeting management goals and objectives. A key grazing area is a small area of a pasture that is identified as being representative of the entire pasture.

Land Use Applicability: This enhancement is applicable to pastureland, rangeland and forest.

Benefits

Proper grazing management will maintain and improve vegetation and soil conditions, improve water quality, and enhance wildlife habitat. Monitoring can be utilized to determine if current grazing management actions are having the desired effect on natural resources. Monitoring enable managers to make decisions and adjust management strategies as needed

Criteria for Monitoring Key Grazing Areas to Improve Grazing Management

1. Key grazing areas will be established for each pasture.
2. Key grazing areas in each pasture will be monitored each year.
3. Monitoring will include a photo point for each pasture of key grazing area and use of one or more of the following techniques:
 - a. Rangeland Apparent Trend
 - b. Rangeland Health Assessment (for rangeland)
 - c. Pasture Condition Scoring (for pastureland)
 - d. Plant productivity determinations
 - e. Measurements of key forage plant heights (before and after grazing)
4. A written grazing management plan that outlines specific goals and objectives.

Documentation Requirements for Monitoring Key Grazing Areas to Improve Grazing Management

- A map showing the location of each key grazing area.
- Photographs from the photo point locations.
- Written documentation of the monitoring data collected.
- Written documentation of how monitoring data was evaluated and utilized to adjust grazing management plans.