



Lutherville-Timonium Residents Support HB510, HB574, SB964

Common Sense Regulation of a Growing
Industry To Protect The Health of Maryland's
Most Vulnerable Citizens

February 25, 2025

Elizabeth Forbush

- My name is Elizabeth Forbush. I am retired and have lived in my current home for 18 years. My house is 300 feet from a farm that grew industrial hemp under the 2019 Pilot Program in Maryland.
- For those of you who may not be familiar with this odor of hemp growing, it smells like skunk. Or many skunks. Hemp plants emit the odor when they begin to bloom in mid-June, and it continues, relentlessly and oppressively, until the plants are harvested in November. There is absolutely no escape from this smell, indoors or outdoors, for months.
- My physical response to the smell was nausea and irritated eyes. My active response was to stop inviting friends and family to my home simply for their comfort and safety.
- Currently, enough study is being conducted to warrant prohibiting the growth of hemp in densely populated residential areas until we have hard scientific data that proves that the fumes are NOT harmful to people and animals.
- That makes a lot more sense than waiting to prohibit hemp growth when we prove that it IS physically dangerous to us because by then, we will be assessing the damage, not preventing it.
- I understand there may be positive economic impact of a hemp crop to farmers and to the State of Maryland. And I acknowledge that there may, perhaps, be value in CBD products derived from hemp. But please, consider public safety above all else.

We are here
because we
are concerned
about our
health and the
health of all
Marylanders

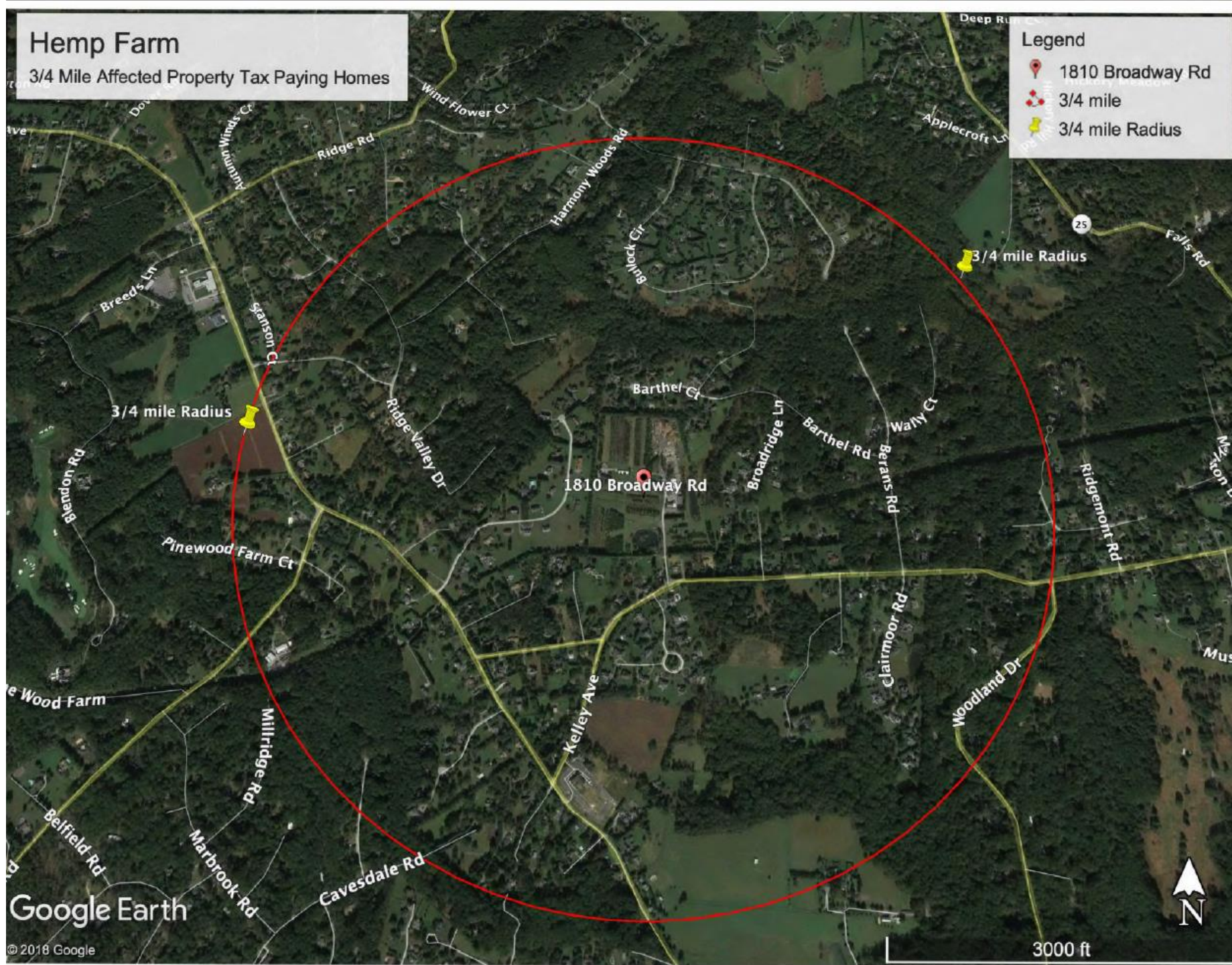
- Five of us are speaking at the February 25th Maryland General Assembly hearings to give a voice to the many hundreds of our neighbors affected by unregulated hemp agriculture.
- We also speak for many more Marylanders who do not yet know that they may soon be living near hemp fields.
- We didn't know what was about to hit us last year, and they don't know yet what is about to hit them. Unless the law changes, they soon will.
- Most affected by this nightmare cannot be here today because most are working families, but please read their statements of concern about risks to their health and read the pleas of people across America living near hemp fields that were submitted to the USDA.
- **Hemp fields stink like dead skunks. But our primary concern is the health of our own families, particularly our children, our grandchildren and the elderly, and the health of all Maryland families.**

Hemp Farm

3/4 Mile Affected Property Tax Paying Homes

Legend

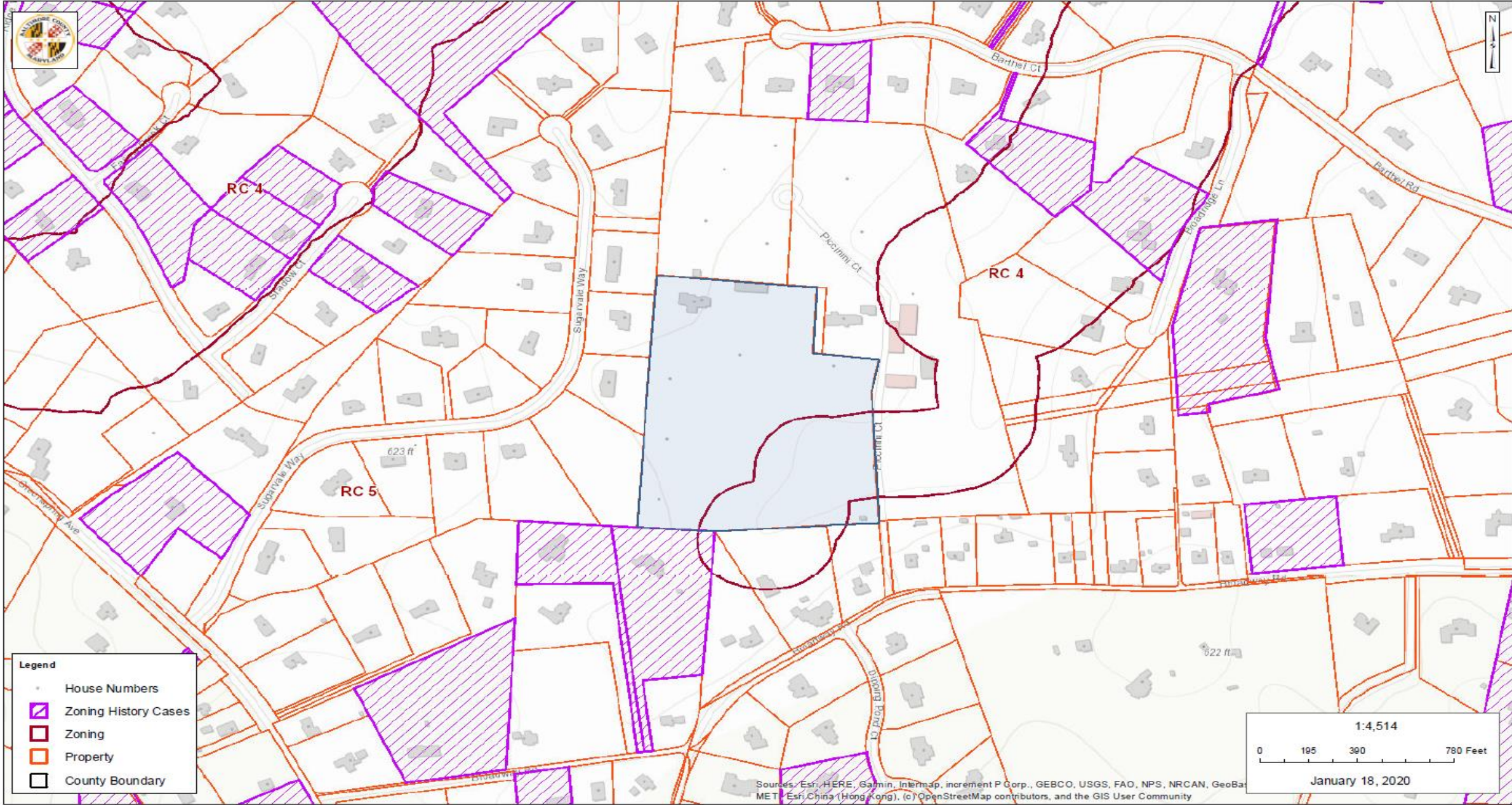
- 📍 1810 Broadway Rd
- 📏 3/4 mile
- 📍 3/4 mile Radius



Google Earth

© 2018 Google

Baltimore County - My Neighborhood



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBasis, METI, Esri, China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Hundreds of us live
near one hemp field

Anyone's Maryland
neighborhood near a
field growing corn,
soybeans, wheat or any
crop might soon find a
hemp field in their
neighborhood

- As you can see from these maps, there are hundreds of homes directly surrounding **just one Maryland hemp field.**
- We count over 130 properties just within the inner bullseye of $\frac{3}{4}$ mile radius of this farm – there are hundreds more within a 2-mile radius.
 - This hemp farm planted only 5 of 33 acres of hemp in 2019, could it plant all 33 this year?
 - Another 10-acre farm located within the $\frac{3}{4}$ mile radius shown didn't grow any hemp last year, but could it this year?
 - Properties zoned for agriculture lie close to the medical facilities at Johns Hopkins at Greenspring – could they grow hemp this year as well?
- **In 2020, hundreds of farms in Maryland may begin growing hemp in numerous other neighborhoods like ours.**
- **We're here because we've already experienced what it is like to live near a hemp field.**
- **That's why we understand why Maryland needs to act now in extending reasonable restrictions on the permissible locations of hemp fields.**

Few Maryland
hemp farms
last year, but
expect five-
fold growth
this year

- Maryland's Department of Agriculture issued **63 hemp licenses** in 2019 for about **73 locations**, representing **less than one-half of one percent of approximately 18,000 total Maryland farms**.
- The surge in popularity of CBD is driving hemp agriculture growth.
 - If Maryland is like other states, we **may see five times that many** hemp fields licensed in 2020 – or **365 (i.e., 5 X 73)**
- Why? Nationally, hemp planted and reported to the USDA grew nearly five-fold from 2018 to 2019
 - Montana, the largest hemp producing state in 2018 with ~13,000 acres, saw growth to ~45,000 acres in 2019.
 - Sparsely populated Montana was responsible for a ~30% share of total US hemp acreage.

Hemp Fields May Be Licensed Near Residences In Every County In Maryland

- The Maryland Department of Agriculture granted hemp licenses in nearly every Maryland County in 2019
- Without changes in our laws -- with demand for CBD products surging, and with the Maryland Department of Agriculture licensing hundreds of new hemp fields -- neighborhoods like ours will face the same health risks we experienced in:
 - Montgomery County
 - Prince George's County
 - Frederick County
 - Harford County
 - Carroll County
 - St. Mary's County.....
 - **Anywhere in Maryland with a new or existing housing development abutting one of Maryland's nearly 18,000 farms that could be licensed by the MDA to grow hemp in 2020 and beyond.**

Reasonable Changes
In The Law Will
Have Limited
Impacts on Some
Farmland, But Will
Not Hurt Maryland
Agriculture or The
Public

- We cherish Maryland agriculture. We understand the farm economy has been stretched thin by low prices and high debt.
- But there's plenty of farmland in Maryland away from homes – enough to plant as much hemp as Maryland CBD consumers could possibly need.
 - **There were over 1.5 million acres of Maryland farmland for all crops in 2019:**
 - Even with high growth, hemp would still be a tiny fraction of the 1.5 million acres.
 - Even with expanded Maryland hemp acreage in 2020, only acreage located near residences would be impacted by reasonable restrictions on hemp agriculture permitting.
- **We encourage you to require that Maryland Department of Agriculture's hemp permitting protect the health of our citizens, particularly children, the elderly and those with asthma and other respiratory conditions.**

Elizabeth Forbush Exhibits

Maryland Farms and Acreage

Only 73 of 17,798 MD farms licensed to grow hemp in 2019. Hemp Farms Located In Nearly Every MD County

	Acres, All Crops	Number Farms, All Crops	Number Hemp Farms
Allegany	3,588	97	1
Anne Arundel	14,194	230	2
Baltimore	53,546	1,046	3
Calvert	9,115	218	1
Caroline	134,943	1,297	3
Carroll	109,871	1,554	4
Cecil	68,372	623	4
Charles	25,449	429	1
Dorchester	109,514	983	2
Frederick	128,561	1,582	7
Garrett	16,469	400	5
Harford	52,971	831	3
Howard	13,273	184	1
Kent	137,802	836	4
Montgomery	47,096	431	6
Prince George's	11,421	239	0
Queen Anne's	172,771	1,218	6
Saint Mary's	38,759	767	0
Somerset	39,965	699	3
Talbot	116,139	986	2
Washington	61,034	721	6
Wicomico	55,181	1,179	9
Worcester	82,248	1,248	0
Total	1,502,279	17,798	73
Percent Hemp Farms in 2019			0.4%
Percent Hemp Farms if Number Doubles 2020			0.8%
Percent Hemp Farms if Number Up Five Times 2020			2.1%
Data sources: 2019 USDA Farm Services Administration (Report Dated 1/2/2020), Maryland Department of Agriculture			

Growth of Hemp Farming In US

United States, Total

Hemp Acres 2018 32,317

Hemp Acres 2019 147,471

State of Montana

Hemp Acres 2018 13,141

Hemp Acres 2019 44,965

Source: USDA Farm Service Agency Crop Acreage Data Dec 2018 and Dec 2019

<https://www.fsa.usda.gov/news-room/efoia/electronic-reading-room/frequently-requested-information/crop-acreage-data/index>

Michele Pearlman

- My name is Michelle Pearlman. I live in Lutherville-Timonium and I am a mother, wife, retired physical therapist, and most importantly, a grandmother of three.
- My family has lived in Lutherville-Timonium for over 30 years. Our home and property directly abuts a farm that grew industrial hemp under the 2019 Maryland Hemp Pilot Program.
- Last year, I watched in amazement from my backyard as that farm, which was a tree nursery, plowed down row after row of trees to convert to hemp growing. We had no idea what that might mean to us but soon found out.
- An unknown emittance along with the odor from the hemp terpenes from that farm invaded our house, our clothes, our cars...we couldn't get out from under it.
- During 2019's Pilot Program, my husband and I experienced health issues we never had before in over 30 years of living in this neighborhood. Once the stench began, I noticed increased headaches and increased symptoms in my post-nasal drip. I am currently under an allergist's care for the post-nasal drip and take several medicines to help me. My husband noticed his eyes were very irritated and had to use drops to ease the irritability.
- Very sadly, my grown and married children have decided it is not safe for them and their children, my grandchildren, to visit during the pilot hemp growing season from July to November. They have made this decision because of the unknown effects of terpenes emitted from the growing hemp and their foul odor that could have irreparable damage to them. I'm not happy about this but I must wholeheartedly support their decision.
- These bills do not prohibit the growing of industrial hemp, they merely establish a parameter to keep us safe from the unknowns of what the terpenes emit upon us.
- The passage of these bills is imperative to the health and well-being of all the neighbors that have suffered these and many other medical issues just because they live near a farm growing hemp under the Maryland Hemp Pilot program.
- Additionally, these bills will also protect many of your constituents in the future before they have to suffer these medical issues as more farms decide to grow hemp.

People Living Next To Hemp Fields All Over America Report The Same Health Concerns

- I've read newspaper stories from **Oregon, California, Colorado, Rhode Island, New York, Pennsylvania and elsewhere -- all tell similar stories:**
 - **People are distressed by the stench, but they care more about what is happening to their health, the health of their children and the elderly.**
 - Some of these stories are heartbreaking: For example, bus routes near hemp fields in one Oregon community had to be changed out of concern that the health of school children was at risk.
- The most telling stories from people that suffer from hemp agriculture from around the country can be found in the comments of families who live next to hemp fields in these other states.
 - Their comments come directly from the USDA website.
 - The USDA Agricultural Marketing Service issued its Final Interim Regulations for hemp mandated by the Agricultural Improvement Act of 2018 (the 2018 "Farm Bill").
 - The USDA collected comments on those hemp regulations from their effective date, Oct. 31, 2019, until the end of the (extended) comment period, January 29, 2020.
 - Health concerns are buried among over 4,685 comments, most of which concern THC testing issues directly addressed by the USDA.
- **Commenters living near hemp fields shared their stories about their health concerns – PLEASE READ WHAT THEY SAID -- in their own words -- what they must have felt compelled to say:**

USDA Health Related Comments By People Living Near Hemp Fields

- **“If we sit inside at night, the stench permeates our home, taints our belongings, makes my breathing issues worse.”**

M. Dobbs, Longmont CO, Comment on USDA Interim Regulations,
<https://www.regulations.gov/document?D=AMS-SC-19-0042-1849>

- **“This crop/product is the most noxious smell/odor I've encountered in my 74 years. It makes me nauseated unlike anything I've come across.”**
Audra Seldeen, Camarillo, CA, Comment on USDA Interim Regulations,
<https://www.regulations.gov/document?D=AMS-SC-19-0042-0808>
- **“While the stench is unpleasant and put a damper on our outdoor lifestyles, the serious problem is how it affected people's health. For many, allergy symptoms began to be manifest in August and continued into November. Those with asthma suffered greatly. I took antihistamines for 3 months as did my husband. His reaction was much more severe and included a couple weeks of actually being ill with a sore throat and cough. After seeing his doctor he was prescribed an inhaler. We are also concerned for the children in our area.”** Anonymous
Comment on USDA Interim Regulations,
<https://www.regulations.gov/document?D=AMS-SC-19-0042-0962>

USDA Health Related Comments By People Living Near Hemp Fields

- **“Sick neighbors are suffering from the air pollutants, the pollen and smell of hemp aggravate both old and very young lungs,”** Carrie Lamontagne, Outside Ithaca, NY, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-1249>
- **“We cannot live like this.** Not only have our lives been disrupted, but **some are suffering from severe allergies and breathing problems.** In addition, since the **crops are located close to the freeway and major roadways, we feel the VOCs cause poor air quality in our community.”** Stephanie Maio, California, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-0602>
- **“The preschool is not able to allow the children into the outdoor playground because fo the strong skunk-like smell.** This is effecting property values, people's enjoyment of their homes and the health of residents. **Many complain of headaches from the smell.”** Terry Meredith, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-1358>
- **“There was 40 acres of hemp growing less than 300 ft from my home this summer and the stench was beyond disgusting. My children are developing headaches and cant sleep at night”** Ann Meyers, Roseburg, OR, <https://www.regulations.gov/document?D=AMS-SC-19-0042-0263>
- **“The NOXIOUS smell seeps into home through closed doors and windows . Elderly and children , and people with compromised lung conditions cannot breathe.** It causes **headaches , respiratory distress, and vomiting .** Local doctors are seeing increase in patients coming with allergic reactions and complaints. This is a crop that has not been studied for its affects on lungs , and long term health. **ARE we are just collateral damage?”** Monica Arduini, Moonpark, CA, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-1359>

USDA Health Related Comments By People Living Near Hemp Fields

- “I have met countless folks who suffer from allergies brought on by the hemp plants & the processing of the crop.” Anonymous, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-1861>
- “The stench from the many hemp fields that are planted in and near populated towns, neighborhoods, and schools is offensive to many and for some both the odor and the processing of the hemp have triggered allergic or respiratory reactions.” Mary Wolf, Jacksonville, OR, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-2162>
- “hemp-cannabis production SMELLS just like cannabis grows as they emit VOCs of the same time -- the emitted stench has adverse effects upon others who live and work within a mile or more from the hemp grows (headaches, nasal problems, blood shot eyes, sneezing, nausea)”
“persons who developed allergies they had not had before or who had worsening allergic responses.” Anonymous, California, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-1857>

The Lutherville-Timonium Community Asks What People All Over America Ask

- **“I am concerned not only for my neighbors' and my own health and quality of life, but most especially for the children's health who live in my community.”** Anonymous, Lutherville, MD, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-0756>
- **“I am writing you directly because I think it is important not only to help the farmers, but to keep the public safe. I am not against hemp farming, but safeguards need to be in place.”** ” Fotini "Tina" Lignos, Lutherville-Timonium, MD, Comment on USDA Interim Regulations, <https://www.regulations.gov/document?D=AMS-SC-19-0042-1713>

Link to All USDA Hemp Regulation Comments:

<https://www.regulations.gov/document?D=AMS-SC-19-0042-0001>

Tina Lignos

- My name is Tina Lignos. I live in Lutherville-Timonium and I am a working mother with two children.
- My family has lived in Lutherville-Timonium for 16 years. Our house, which is the home I grew up in, abuts a farm that grew industrial hemp in 2019.
- Imagine stepping out of your home every day from the beginning of August through mid-November and being hit with a stench so pungent that it smells like you have 100 people in your yard smoking marijuana 24/7. Then imagine exposing your children to that smell on a daily basis.
- This is what we endured last summer and fall. The smell was so strong that my husband and I could not play basketball or soccer outside with our children. We could not have a barbecue or even open our windows. Even with the windows closed, the stench emitted from the hemp plant seeped into our homes, our clothing and our cars. I sent my children to school smelling like marijuana.
- Both my daughters and I experienced health issues that we believe may have resulted from 24/7 exposure to the hemp field directly next to our backyard. Our symptoms included watery eyes and constant eye irritations, as well as daily headaches, and persistent migraines. All of these symptoms dissipated after the hemp was harvested.
- As a mother, my biggest concerns are the additional unknown health risks my children could face being exposed to whatever is being emitted from my neighbor's hemp farm. Could this turn into another vaping epidemic?
- As an attorney, I strongly believe laws should be enacted not only to protect our quality of life, but to protect us from these unknown health risks before they manifest into severe problems.

Our Concerns About the Unknown and Possibly Irreversible Health Effects of Living Near Hemp Fields

- As these USDA regulation comments, newspaper stories and statements from the five of us and my neighbors show, residents near hemp fields all over America report the same concerns about their health:
 - **Breathing problems, including asthma, are most frequently mentioned, but also:**
 - Cough, sore throat
 - Nasal problems
 - Allergic reactions, sometimes severe, welts
 - Eye irritations, itchiness, blood shot eyes
 - Headaches, sometimes severe, migraines
 - Sleeplessness
 - Nausea

We are particularly concerned about our prolonged exposure to substances we must inhale for months from hemp – for example, certain volatile organic compounds from hemp called “terpenes”

- **“The typical smell of cannabis comes from roughly 140 different terpenes, according to “Chemistry and Analysis of Phytocannabinoids,” written in 2007 by Rudolf Brenneisen, professor of phytochemistry at University of Bern, Switzerland. He studied cannabis for 20 years. The odoriferous secretion of skunks is primarily volatile thiols: ϵ -2-butene-1 thiol (about 40 percent) and 3-methyl-1-butanethiol (about 22 percent).”**

- **“Cannabis growers overcome the powerful scent,” The North Bay Business Journal, May 29, 2017**

Our Prolonged Exposure To Skunk-like Terpenes

- **Might our breathing problems and other symptoms be the result of prolonged exposure to very high doses of the particular terpenes in hemp that cause such a stench?**
- **Could our symptoms be from uncontrolled dosages of other terpenes in combination with other substances in hemp like cannabidiol (CBD)?**
- **Marylanders are forced to breath these substances 24-7 for four months, indoors or outdoors, if they live near a hemp field. How do we know this is safe?**

The FDA Warned Consumers that Hemp-Derived Cannabidiol ("CBD") May "Harm You"

- In November 2019, the US Food and Drug Administration ("FDA") said that their data "point to real risks," that "CBD has the potential to harm you," and that it "can cause liver injury" (please read their words in the attached Exhibit)
- While scientific research is advancing, neither the FDA nor other regulatory bodies can assure the public that CBD is generally safe or safe when consumed at specified dosages.
- Nor can they assure us that combinations of CBD and added terpenes are safe
- **Why?**
 - (1) Hemp has not been a major crop since the 1930s and
 - (2) Federal research funds were limited because hemp was a controlled substance since 1970.
- Scientific research take years, and when commercial considerations get ahead of public safety, the results can be disastrous e.g., asbestos, vaping.

What Little We Appear To Know About CBD Dosing In Particular Is Worrisome

- I'm told one recent scientific study found liver damage in mice if CBD dosage was high enough.
- I also understand there are limited/no long-term data available on safe CBD dosages in humans, and no scientific studies on the impact of CBD dosages for people living near hemp fields.
- Even at otherwise safe short-term controlled CBD dosages, human side effects, including allergic inflammation in lungs, have been reported in published scientific studies.
- **How high a dosage of CBD do people living near hemp fields involuntarily vape?**
- **Are our breathing problems side effects of our prolonged exposure to CBD?**
Or even worse:
Might our prolonged exposure to CBD =
dangerously high dosages of harmful substances?
- **Might high doses of hemp substances we are forced to inhale 24/7 from stench surges at harvest time, damage resident:**
 - Livers?
 - Lungs?
 - What else?

The FDA and Others Advise Pregnant or Nursing Mothers Not To Use CBD Oil.

Could Dosage-Related Toxicity Concerns Apply To Our Children and Elderly Too?

- The FDA already advises pregnant or nursing women not to use CBD oil.
- The UK's Food Standards Agency also issued the same warning because of "toxicity concerns."
- We should be asking ourselves if our four-month+ a year prolonged exposure to cannabidiol vapors we involuntarily inhale could threaten our children and elderly as well.
- The FDA says that it is studying other potential health risks – this may just be the beginning.
- While our children and grandchildren involuntarily inhale 140 types of terpenes, CBD oil-related vapors, and other substances 24/7 for four-month stretches, are they to be Maryland's medical guinea pigs?

Tina Lignos Exhibit

FDA Warnings to Consumers, CBD “Dosage Matters” Study, Side Effects to Lungs

November 2019 FDA Statements and Facts About CBD

- “The FDA recognizes the significant public interest in cannabis and cannabis-derived compounds, particularly CBD. However, there are many unanswered questions about the science, safety, and quality of products containing CBD.
- The FDA is concerned that people may mistakenly believe that trying CBD “can’t hurt.”
- **The FDA has seen only limited data about CBD safety and these data point to real risks that need to be considered before taking CBD for any reason.**
- **CBD has the potential to harm you**, and harm can happen even before you become aware of it.
 - **CBD can cause liver injury.**
 - CBD can affect the metabolism of other drugs, causing serious side effects.
 - Use of CBD with alcohol or other Central Nervous System depressants increases the risk of sedation and drowsiness, which can lead to injuries.”
- **“What You Need to Know (And What We’re Working to Find Out) About Products Containing Cannabis or Cannabis-derived Compounds, Including CBD” U.S. Food & Drug, 11/25/2019, <https://www.fda.gov/consumers/consumer-updates/what-you-need-know-and-what-were-working-find-out-about-products-containing-cannabis-or-cannabis>**

Recent scientific study showing dose-dependent liver damage in mice:

- “Hepatotoxicity of a Cannabidiol-Rich Cannabis Extract in the Mouse Model,” *Molecules* 2019, 24, 1694; doi:10.3390/molecules24091694, <https://www.ncbi.nlm.nih.gov/pubmed/31052254>

Scientific study referencing CBD’s allergic inflammation of human lungs:

- “Safety and Side Effects of Cannabidiol, a Cannabis sativa Constituent,” Mateus Machado Bergamaschi, Regina Helena Costa Queiroz, José Alexandre S. Crippa, and Antonio Waldo Zuardi, *Current Drug Safety*, 2011, Vol.6, No. 4, http://files.iowamedicalmarijuana.org/petition/2012/Bergamaschi_2011.pdf

Richard Sciacca

- My name is Richard Sciacca. I am a retired senior citizen and live in Lutherville-Timonium.
- My wife and I have lived in Maryland for over thirty years, and we moved to Lutherville-Timonium from Baltimore just two and a half years ago. Our house lies a little over one-half mile (as the crow flies) away from a farm that grew industrial hemp in 2019.
- My wife and I both experienced health issues last year that we believe may have resulted from breathing whatever the nearby hemp field was emitting.
- Starting last August, for the first time I can recall, my nose ran pretty much continuously for months. That stopped as soon as the hemp was harvested in early November.
- My wife has asthma, and she nearly died when she was young from an acute respiratory illness. Her doctors have cautioned her about her asthma through the years, and they prescribed two types of inhalers.
- Asthma can become dormant, and my wife's was until last summer when she began reaching for her inhalers for the first time in years. We are very concerned that the nearby hemp field may have triggered this recent return of her asthma.
- I believe new restrictions on open-field hemp growing would be as justified as Maryland's laws prohibiting smoking in public places to protect those of us who do not smoke from the health threat of secondhand smoke.

Our Health Concerns Are Also Based on Health Risks Facing Hemp Workers

The Center For Disease Control and Prevention **Bacteria** Warning

- The CDC tested air breathed by cannabis workers on a 5-acre farm in Washington State in 2015 for 3 days. They found airborne “**actinobacteria**” and warned of potentially:

“adverse health effects, such as hypersensitivity pneumonitis, chronic bronchitis, organic dust toxic syndrome, asthma, and allergic sensitization”

- Hemp workers’ exposure stops each day when they go home after their shifts – there’s no escape in the growing season if you live near a hemp field, particularly if you are very young or old. The CDC study authors say we need longer-term studies.
- Our prolonged exposure to the same endotoxins, fungi and actinobacteria the CDC measured in the air that hemp workers breathe has not been studied.

The CDC's Cannabis Farm Study Warned of Hemp Worker Respiratory Risks

The Center For Disease Control and
Prevention Hemp Worker Warning

**“Occupational hemp exposure can
result in a variety of clinical
symptoms including sinusitis,
byssinosis, and reductions in lung
function.”**

The CDC Tested the Cannabis Farm for THC, But Not For CBD or Terpenes

The CDC cannabis farm study also did not report testing for worker exposure to CBD or terpenes, but is enough known about the potential health threats of either in hemp? Or their combined effect?

- These are complex chemicals that may pose health risks.
 - Most terpenes are harmless, but some are not.
 - Experts found thiols and butanethiols are the terpenes that make cannabis smell.
 - This type of terpene appears to pose serious health risks at high enough exposures, and others might too.
 - Might synergistic combinations of these substances in uncontrolled dosages pose as-yet untested health threats to residents near hemp fields?

Occupational Asthma Warnings From Major Medical Institutions

“Occupational asthma is asthma that's caused by breathing in chemical fumes, gases, dust or other substances on the job. Occupational asthma can result from exposure to a substance you're sensitive to — causing an allergic or immunological response — or to an irritating toxic substance.”

“Like other types of asthma, occupational asthma can cause chest tightness, wheezing and shortness of breath. People with allergies or with a family history of allergies are more likely to develop occupational asthma.”

Mayo Clinic

- **The Mayo Clinic, the Cleveland Clinic, and Johns Hopkins list these Occupational Asthma Symptoms:**
 - Wheezing, chest tightness, shortness of breath
 - Cough
 - Runny nose, nasal congestion
 - Eye irritation, tearing

Workers With Occupational Asthma Have The Same Symptoms As Residents Near Hemp Fields

- **Workers suffering from Occupational Asthma -- including hemp workers according to these medical institutions -- report symptoms like those of residents living near hemp fields all over America.**
- **Once again, hemp workers go home when their shifts are done, residents are home, in their homes, exposed to what may be “irritating” and potentially “toxic substances” 24-7 for months.**
 - **Some people living near hemp fields already have asthma and allergic sensitivity.**
 - **The risk that other people will develop these and other respiratory problems grows each year that hemp is allowed to grow near residences.**

Our Health Concerns Are Also Based on Recent Preliminary Scientific Research On Cannabis Terpenes and Ground-Level Ozone

- Ground-level ozone threatens the growing lungs of children and the vulnerable lungs of the elderly (think “Code Orange”)
 - A Code Orange air quality alert means that air pollution concentrations may become unhealthy for sensitive groups, including children and the elderly, and people suffering from asthma, heart disease or other lung diseases.
- Two Independent Teams of Scientists Recently Warned That Cannabis Terpenes May Worsen Ground Level Ozone (also called “Smog”)

Peer-reviewed published research studies found that terpenes from cannabis can combine with car exhaust in the presence of ultraviolet light directly from the sun and elevate ground level ozone

Their Findings:

- “The same chemicals responsible for the pungent smell of a cannabis plant may also contribute to air pollution on a much larger scale.”
- “If the farms are putting out a significant amount of terpenes, there is not a worse place [next to congested roads] to put them.”

The Hemp Field In Our Lutherville-Timonium Neighborhood Is Located In The Worst Place For Ozone Creation If These Scientists Are Right

- The hemp field in our Lutherville-Timonium community abuts Broadway Rd., a busy commuting route.
- It is one property away from a very congested major commuting route, Greenspring Avenue.
- Similar to locations tested by these scientists (Denver, Colorado, four cities in Nevada and California).

Did hemp terpenes from the field near Broadway and Greenspring Ave. combine with car exhaust from those congested roads to produce elevated ground level ozone?

If so, did this contribute to 2019 resident breathing problems?

Must the same risk of elevated ozone await other people in Maryland living near hemp fields and major roads in 2020?

Richard Sciacca Exhibits

The CDC Measured Bacteria, Fungi, et.al. at 5-Acre Cannabis Farm, Warned Of “Adverse Health Effects”

- “We focused our evaluation on three exposures: endotoxins, microbial biodiversity (fungi and bacteria), and delta-9-tetrahydrocannabinol (THC).” [Terpenes not measured or studied, but warnings on Hemp in Appendix C]
- Our evaluation included the following: (1) ergonomic evaluation of work tasks, (2) air sampling for endotoxins, (3) assessment of airborne microbiological diversity (fungi and bacteria), (4) surface wipe sampling for THC, and (5) confidential medical interviews with employees.
- We collected 26 full-shift, personal breathing zone and area air samples using a National Institute for Occupational Safety and Health (NIOSH) two-stage bioaerosol sampler. We collected full-shift personal breathing zone air samples from four employees over 3 days (12 samples in all). We collected 14 area samples: eight in the drying room, three in the greenhouse, and three outdoors. We interviewed all four employees about their health and safety concerns related to cannabis processing.
- What We Found:
- Botrytis cinerea was the main fungal species in the air. **Actinobacteria** was the most frequently identified bacterial phyla in the air.
- **Actinomycetes, are known to cause adverse health effects, such as hypersensitivity pneumonitis, chronic bronchitis, organic dust toxic syndrome, asthma, and allergic sensitization** [Lacey and Crook 1988; Mackiewicz et al. 2015; Park et al. 2006; Pepys et al. 1963]. **Airborne exposure to Actinobacteria and fungus like B. cinerea can increase the risk of allergic and respiratory symptoms.**
- Research on occupational health issues in the cannabis industry is limited.” [The authors called for longer-term studies.]
- “Evaluation of Potential Hazards during Harvesting and Processing Cannabis at an Outdoor Organic Farm,” CDC 2017
- https://www.researchgate.net/publication/316605701_Evaluation_of_Potential_Hazards_During_Harvesting_and_Processing_Cannabis_at_an_Outdoor_Organic_Farm

The CDC Did Not Test For CBD or Terpenes, But Some Terpenes May Produce Serious Health Effects

- **“The typical smell of cannabis comes from roughly 140 different terpenes,** according to “Chemistry and Analysis of Phytocannabinoids,” written in 2007 by Rudolf Brenneisen, professor of phytochemistry at University of Bern, Switzerland. He studied cannabis for 20 years. **The odoriferous secretion of skunks is primarily volatile thiols: ϵ -2-butene-1 thiol (about 40 percent) and 3-methyl-1-butanethiol (about 22 percent).”**
- “Cannabis growers overcome the powerful scent,” [The North Bay Business Journal](https://www.northbaybusinessjournal.com/northbay/sonomacounty/7008462-181/cannabis-smell-management), May 29, 2017

<https://www.northbaybusinessjournal.com/northbay/sonomacounty/7008462-181/cannabis-smell-management>

- **“Butanethiol is a very noxious and caustic chemical compound, and at sufficiently high concentrations, it produces serious health effects in both humans and animals, especially as a result of prolonged exposure.** Higher concentrations can lead to unconsciousness and coma after prolonged exposure. Contact with the skin and mucous membranes causes burns, and contact with the eyes can lead to blurred vision or complete blindness.
- **Inhalation may cause weakness, confusion, cough, dizziness, drowsiness, headache, nausea, vomiting, and shortness of breath. The substance irritates the eyes, the skin, and the respiratory tract. It may cause effects on the thyroid and the nervous system and could cause lowering of consciousness.”**

Butanethiol, Wikipedia

<https://en.wikipedia.org/wiki/Butanethiol>

Hemp workers suffering from “Occupational Asthma” report symptoms like health concerns of people living near hemp fields all over America

- “Occupational asthma symptoms are similar to those caused by other types of asthma. Signs and symptoms may include:
 - Wheezing, sometimes just at night
 - Coughing
 - Shortness of breath
 - Chest tightness
- Other possible accompanying signs and symptoms may include:
 - Runny nose
 - Nasal congestion
 - Eye irritation and tearing”
- “Occupational Asthma,” Mayo Clinic <https://www.mayoclinic.org/diseases-conditions/occupational-asthma/symptoms-causes/syc-20375772>
- See also Cleveland Clinic <https://my.clevelandclinic.org/health/diseases/9572-asthma-occupational--work-related-asthma>
- See also Johns Hopkins <https://www.hopkinsmedicine.org/health/conditions-and-diseases/asthma/occupational-asthma>

Two Independent Groups of Scientists Found Cannabis Terpenes Combine With Car Exhaust and Ultraviolet Light To Produce Elevated Ground Level Ozone

“Researchers have long known that VOCs emitted by plants can contribute to smog. VOCs can mix with nitrogen oxides—produced by cars and industrial sources—in sunlight-driven reactions that produce ground-level ozone, a pollutant. Vizuete's study confirmed that pot plants are a rich source of potent VOCs called terpenes, which give cannabis its dank smell.”

“As legal pot farms expand, so do air pollution worries,” *Science*, Jan 24, 2019. <https://www.sciencemag.org/news/2019/01/legal-pot-farms-expand-so-do-air-pollution-worries>

“Leaf enclosure measurements for determining volatile organic compound emission capacity from Cannabis spp.,” Chi-Tsan Wanga, Christine Wiedinmyerb, Kirsti Ashworthc, Peter C. Harleyd, John Ortegad, William Vizuete, *Atmospheric Environment*, Volume 199, 15 February 2019, Pages 80-8, <https://www.sciencedirect.com/science/article/abs/pii/S1352231018307416?via%3Dihub>

“As previous research has shown, biogenic volatile organic compounds (BVOCs) emitted from plants can react with other urban air constituents (e.g., NO_x, HO radical) and thus negatively affect regional air quality. In this pilot study, BVOC emissions from Cannabis plants were analyzed at four grow facilities. High concentrations of VOCs emitted from Cannabis grow facilities can lead to the formation of ozone, secondary VOCs (e.g., formaldehyde and acrolein), and particulate matter.”

“Dominant volatile organic compounds (VOCs) measured at four Cannabis growing facilities: Pilot study results,” Vera Samburova, Mark McDaniel, Dave Campbell, Michael Wolf, William R. Stockwell & Andrey Khlystov, *Journal of the Air & Waste Management Association*, 2019, VOL. 69, NO. 11, 1267–1276 , <https://doi.org/10.1080/10962247.2019.1654038>

Steven Troy

- My name is Steven Jared Troy. I live in Lutherville-Timonium and I am a working father of three children.
- My family has lived in Lutherville-Timonium for 21 years. Our house lies within 300 feet of a farm that grew industrial hemp in 2019.
- Like so many of my neighbors, my wife, my children and I experienced unexpected health problems last year. We believe these were the result of breathing whatever is being emitted from the hemp field just across the way from our home.
- Our symptoms included coughing, scratchy throat, nasal problems, eye irritations and nausea. These problems miraculously went away after the hemp farming was completed towards the end of the fall season.
- As a long-time attorney, I believe these bills are simply common-sense law needed to protect all Marylanders from a clear and present danger to public health and well-being.

Hemp Farming Next To Homes Threatens The Health of Our Most Vulnerable Populations, Including Children and the Elderly

- Based on American Lung Association data, over 850,000 people in Maryland, or about 14% of our population, is “At Risk” of “Lung Diseases,” including:
 - Pediatric or adult asthma
 - COPD
- These are serious diseases: over 4,000 in Maryland die of respiratory diseases annually
- Lutherville-Timonium’s population is about 38,000, roughly 40% are children or elderly
 - Over 6,000 Age 14 or younger
 - Nearly 9,000 Age 65 or older
- At Maryland’s 14% at-risk rate for lung diseases:
 - About 5,400 people in Lutherville-Timonium alone are “At Risk”
 - About 33 die of respiratory diseases annually
- **If the incidence of these respiratory diseases increases by even 10% because of e.g., forced prolonged terpene or CBD inhalation from proximity to nearby hemp fields, 15 or more people in Lutherville-Timonium alone might die over the next five years.**
- **More medical research will come too late for them.**

Faced With This Same Nightmare, People in Other States and in Canada Have Begun to Act

- States including Ohio, Kansas and Kentucky, and communities in California, Washington State and elsewhere have placed geographic bans on hemp farming.
For example:
 - In Ohio, hemp cultivation is prohibited within 100 feet of residential purpose buildings.
 - In Kansas, hemp cultivation is prohibited within 50 feet of residences or within a quarter mile of public or recreational areas.
 - In Kentucky, hemp cultivation is prohibited adjacent to residential buildings
 - As of Sept 2019, 7 of 23 California counties had at least a temporary moratorium in place on hemp farming
 - The city of College Place in Washington state instituted a moratorium in December 2019 after receiving complaints regarding the odor of industrial hemp.
- Metropolitan Vancouver, Canada is looking to regulations because of the same ground level ozone (smog) and associated respiratory issues scientists in the US identified in Colorado, Nevada and California.
 - How many of their citizens needlessly suffered?
 - How many might have died because of delay and inaction?

The 2019 Pilot Program Regulations Were Temporary and Provided No Guarantees To Maryland Hemp Farmers

- Under the 2018 Farm Bill, Pilot Program Regulations could be extended until October 2020.
 - The Maryland Department of Agriculture chose to extend the Pilot Program for the 2020 growing season.
- The Pilot Program must expire by this October, and it provided no guarantees.
- The MDA is now poised to draft permanent regulations for 2021 and beyond.

We Need to Act Now Before the Maryland Department of Agriculture Hemp Regulations Are Finalized

- **Now is the time to assure that Maryland citizens at risk for respiratory diseases are not afterthoughts.**
 - Otherwise, Maryland taxpayers may be fixing the damage done because of our inaction today for years to come.
 - Medicaid is stretched thin already.
 - **For some, the damage done may be irreversible.**

The Health of Maryland's Children and Elderly is in your hands.

Please adopt practical and common-sense restrictions on hemp agriculture that protect public health and safety in Maryland.

Steven Troy Exhibits

Groups At Risk American Lung Association, “State of the Air, 2020” <https://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/maryland/>

Total Population:	6,052,177	Risks to the population
Pediatric Asthma:	130,274	Risks to people with Asthma
Adult Asthma:	447,889	Risks to people with Asthma
COPD:	271,145	Risks to people with COPD
Lung Cancer:	3387	Risks to people with lung cancer

Centers for Disease Control and Prevention, National Center For Health Statistics, Underlying Causes of Death, Baltimore County, CDC Wonder Online

Baltimore County Population	832,468
Deaths from Diseases of the Respiratory System in 2017	721

Baltimore County Residents “At Risk” from Lung Diseases, Respiratory Disease Deaths

People At Risk In Lutherville-Timonium

- Total L-T Population 38,224
 - Under 5 years 1,777
 - 5 to 9 years 1,956
 - 10 to 14 years 2,545
 - 65 years & over 8,872

Estimated deaths from Respiratory Diseases if same death rate as Baltimore County:

$$(721/832,468) * 38,224 = 33$$

If 10% increase: $10\% * 33 = 3.3$, over 5-years $5 * 3.3 = 16.55$ more deaths

Source: US Census Bureau,
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP05&prodType=table

Examples of Other States and Communities Restricting Hemp Growing Near Residences

- Ohio <https://www.jdsupra.com/legalnews/ohio-department-of-agriculture-releases-45621/>
- “Seven [California] counties have at least a temporary moratorium in place, which could be extended for up to 22 months and 15 days if the county board of supervisors so decides.
- Seven counties have banned production until 2020. This includes Santa Clara County, which doesn’t currently have a moratorium but has banned hemp production until the federal and state regulations are implemented. The rest of the counties voted to extend their respective hemp moratoriums until spring 2020.
- Four counties have put hemp production bans in place until 2021.”

“Hemp in California: Counties, cities remain divided on production,” Hemp Industry Daily, Sept. 30, 2019,

<https://hempindustrydaily.com/hemp-in-california-california-counties-cities-split-on-hemp-production/>

“The regional body that governs air quality in and around Vancouver is exploring new regulations that would reduce the stench from industrial-scale cannabis farms and the plant’s volatile organic compounds that can lead to spikes in ground-level ozone, which increases smog.

The compounds, known as terpenes, in cannabis, but present in other industries, react with nitrogen oxides in the atmosphere and sunlight to form ozone, which causes air pollution and can hurt people with respiratory problems, he [Roger Quan, Metro Vancouver’s director of air quality and climate change] said.

In the past 12 months, 326 complaints have been received about the skunky scent of cannabis or the sprays companies use to mask the aroma, most of the complaints are from Langley, Delta and Maple Ridge – municipalities with cannabis farms.”

“Metro Vancouver exploring new regulations to reduce stench of industrial cannabis operations,” The Globe and Mail Canada, March 29, 2019,

<https://www.theglobeandmail.com/canada/article-metro-vancouver-exploring-new-regulations-to-reduce-stench-of/>



Thank You

Lutherville-Timonium Residents Support HB510,
HB574, SB964