



September 15, 2025

The Planning Commission Should Not Recommend Certifying the Final Environmental Impact Report

The Neighborhood Coalition advocates for sustainable, environmentally sound, and neighborhood-compatible cannabis policies in Sonoma County. We incorporate by reference the comments filed by Shute Mihaly & Weinberger on behalf of Save Our Sonoma Neighborhoods.

The Planning Commission Should Not Recommend Certifying the Final Environmental Impact Report (FEIR). It does not fully and adequately respond to most comments, especially those filed by the Neighborhood Coalition (O1, O5-O10, O18, and O19), Shute Mihaly & Weinberger on behalf of Save Our Sonoma Neighborhoods (O24), Friends of the Mark West Watershed (O4), the League of Women Voters (O12, O13), Neighbors of West County (O14), Preserve Rural Sonoma County (O16), the Bennett Valley Community Association (O17), Friends of Franz Valley (O25), Bennett Valley Residents for Safe Development (O2, O11), and the California Department of Fish and Wildlife (A4). The FEIR does not and cannot support the findings required by CEQA.

The FEIR is written to obfuscate instead of fully disclose the environmental impacts of the cannabis ordinance. The County has not shown a good faith effort to consider public input, much less modify the DEIR as a result. The County must provide a reasoned analysis supported by factual information. CEQA Guidelines § 15088(c). Comments must be “addressed in detail giving reasons why specific comments and suggestions were not accepted.” *Id.* The County’s approach, to put it mildly, does not achieve the goals of CEQA.

The arrogance of the drafters of the responses to comments is exemplified by this statement (p. 3-12):

None of the comment letters on health effects from exposure to cannabis odors provide resources of similar expertise or a comparable health effect analysis as provided by Trinity and SafeBridge.

The County is misusing a false claim about the experts’ qualifications to justify ignoring or dismissing many valid comments and data that contradict its chosen approach. Many so-called “responses” are either non-responses or rely on inaccuracies, omissions, and misrepresentations. Even when commenters pointed out obvious calculation mistakes, the FEIR consultants refused to make any corrections. “Conclusory statements unsupported

by factual information” are never an adequate response. Guidelines § 15088(c); *City of Maywood v. Los Angeles Unified Sch. Dist.* (2012) 208 Cal.App.4th 362, 391.

Details on the failings of the FEIR to address comments are found in Critique of FEIR Analysis of Health Impacts in Master Response 1 (“Health Critique,” Attachment 1) and Critique of FEIR Analysis of Odor Detection, Setbacks, and Dispersion Modeling in Master Response 1 (“Emissions Critique,” Attachment 2).

These comments may be incomplete due to the FEIR’s 628-page length and the limited time the Neighborhood Coalition had to review it. The Neighborhood Coalition reserves the right to raise other issues as this process continues.

I. Summary and Overall Pattern of Failures in Responses to Comments.

The failures and inadequacies of the responses to comments is summarized below:

- a. Licensed physicians and medical specialists with decades of experience are ignored or trivialized.
- b. Even documented life-threatening medical emergencies are minimized or not addressed.
- c. Scientific evidence is cherry-picked - multiple peer-reviewed studies are dismissed in favor of single “supportive” studies which even then are misrepresented; this makes a mockery of CEQA’s goal of disclosing to the public a project’s significant environmental effects.
- d. Carcinogen risks downplayed - known cancer-causing compounds are minimized using irrelevant and discredited arguments.
- e. Worsening impacts ignored - the reduction in existing health and safety protections is not acknowledged.
- f. Pretending to respond using generic references to "Master Response 1" instead of addressing specific evidence.
- g. Minimizing odor impacts as "annoyances" despite abundant evidence reports of their negative health effects.
- h. Ignoring contradicting data from their odor analysis and myrcene dispersion models.
- i. Ignoring contradictory evidence when residents provide maps, studies, or real-world data.
- j. Failure to address technical solutions proposed by residents.
- k. Failure to explain how proposed setbacks align with documented odor travel distances.
- l. Violation of primary program objective of “protection of public health and safety and racial and socio-economic equity.”

II. Ten Fallacies in Sonoma County's Master Responses on Cannabis Odor, Health Impacts, and Setbacks.

- a. **False Equivalency Between Cannabis and Agricultural Odors.**

FEIR Statement: "It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Land uses typically associated with odor complaints include wastewater treatment plants, sanitary landfills, composting facilities." (p. 3-8).

Fallacy: The county deliberately conflates cannabis odors with wastewater treatment plants and typical agricultural odors, ignoring that cannabis odors contain carcinogenic compounds like beta-myrcene not found in traditional farm and wastewater odors. *See* Letter O9 "Unlike Typical Agricultural Odors, Cannabis Odors Pose Health Risks."

b. Circular Logic on "Significant and Unavoidable" Impact.

FEIR Statement: "Given these circumstances and the inability to establish setbacks that would completely eliminate cannabis odors, this impact was identified as significant and unavoidable." (p. 3-11).

Fallacy: The acknowledgement that odor is a "significant and unavoidable impact" is used to justify the inadequate setbacks that Permit Sonoma has proposed and circumvent discussing the simple well-known mitigation of implementing larger setbacks.

c. Dismissing Health Concerns Through False Authority.

FEIR Statement: "Key personnel involved in the Draft EIR at Ascent, Trinity, and SafeBridge have specific, extensive and unique experience. None of the comment letters on health effects from exposure to cannabis odors provide resources of similar expertise." (p. 3-12).

Fallacy: Appeal to authority fallacy - dismissing citizen health concerns and expert critiques by claiming their consultants are uniquely qualified, while ignoring the extensive qualification of experts, documented resident experiences, and scientific evidence contradictory to their claims.

d. Misrepresenting Beta-Myrcene Cancer Risk.

FEIR Statement: "Beta-myrcene causes a type of cancer in rats by a mechanism that is specific to rats and impossible to achieve in humans." (p. 3-192).

Fallacy: The county selectively interprets cancer studies to belittle risk to humans, ignoring that regulatory agencies classify beta-myrcene as a potential carcinogen for humans and that no safe exposure threshold has been established for humans. The county ignores the detailed response and analysis by regulatory authorities in California showing that assertion that these rat cancers are irrelevant in humans are erroneous and do not meet even one of 7 required criteria for challenge. The attached Health Critique (p. 24) provides more information. It is unscientific to cite a study that was later refuted by a state environmental regulatory body.

e. False Precision in Modeling vs. Reality.

FEIR Statement: "The modeling identifies that setbacks provide substantial decreases in odor concentrations... approximately 50 percent reduction in odor concentration" at 100 feet (p. 3-376).

Fallacy: The FEIR presents precise percentages from theoretical modeling while ignoring empirical emissions data showing odors detected at 2 miles distance and resident reports of odors traveling 8,000 feet. The county acknowledges relevant parameters required for correct modeling (e.g., topography, air inversions, wind patterns) that are especially prominent during fall harvest time yet states that such parameters would not change modeling results. They ignore its consultants' own data from 2020 that showed about 100 times higher odor levels from an identical size grow site and only 25% odor reduction at 100 ft, thus half the percentage reduction they claim from their current modeling. The attached Emissions Critique (pp. 29-31) provides further explanation of this glaring error that should embarrass Trinity Consulting.

f. Inconsistent Protection Standards for Children.

FEIR Statement: Proposes "1000 ft setbacks from schools and daycare centers" but "only 100 ft setbacks for Ag and RRD parcels and 600 ft for residential zoned parcels, where children live" (p. 3-344).

Fallacy: Logical inconsistency. If 1,000 feet is needed to protect children at schools, the same distance should apply to homes in all zoning where children spend much more time than at school.

g. Deflection Through Averaging Periods.

FEIR Statement: "The modeling reflects an annual averaging period and should not be expected to reflect an instantaneous reading at any given time or location" (p. 3-198).

Fallacy: Red herring fallacy - using annual averaging to dismiss peak exposure periods when cannabis odors are strongest during flowering season, affecting residents' daily lives for months. Obviously, it is the peak exposures that present the health risks. Annual averages are irrelevant.

h. False Assumption About Indoor Exposure.

FEIR Statement: "People tend not to stay outdoors on their property around the clock, instead spending time indoors" to minimize exposure concerns. (p. 3-262).

Fallacy: False premise - assumes homes provide protection from odors when residents report being unable to open windows for weeks and odors penetrating homes. This ignores the reported experience by numerous residents and protections against nuisance on one's property (thus including their land outside the home) provided by law in California (CCC § 3479). Moreover, people tend to spend most of their time outdoors during harvest, which is peak odor season.

i. Vague Language Masquerading as Scientific Fact.

FEIR Statement: "Odors would decrease substantially by 600 feet and further at 1,000 feet" without quantifying what "substantially" means (p. 3-261).

Fallacy: Using imprecise language ("substantially," "further") to create an impression of scientific certainty while avoiding specific measurements that could be verified. The FEIR obfuscates because it has no measured emissions data, unlike the Neighborhood Coalition. The FEIR even states "the Draft EIR does not state or imply that odors for individual receptors would decrease," contradicting their statement that "Odors would decrease substantially by 600 feet and further at 1,000 feet." The FEIR is designed to obfuscate instead of fully disclose the environmental impacts of the cannabis ordinance, in violation of CEQA.

j. Ignoring Cumulative Effects.

FEIR Statement: The EIR fails to analyze residents living near multiple cultivation sites, stating only that analysis assumes single operations.

Fallacy: Composition fallacy - analyzing single operations while ignoring that residents may be exposed to multiple sites simultaneously, potentially doubling or tripling exposure levels beyond what their models predict as "safe."

III. The FEIR Fails to Disclose the Adverse Health Effects of Cannabis Emissions.

The adverse health effects of cannabis emissions is a central environmental issue of the proposed cannabis ordinance. It is key to meeting one of the primary objectives of the proposed cannabis ordinance (DEIR, ES-2):

- **Consider the protection of public health and safety and racial and socio-economic equity when implementing the above objectives.**

Nowhere in the DEIR or FEIR does Permit Sonoma mention that many of those most affected by the county's cavalier approach to public health and safety are agricultural workers and their children. Many agricultural workers live on Ag- and RRD-zoned lands and will be among the most impacted by inadequate (as little as 100 feet) setbacks from residences as well as the County's decrease of the minimum parcel size. The families and children of ag workers will inhale very high levels of unhealthy cannabis emissions in their homes and be exposed to carcinogens. Even if the parents or children escape developing cancers years later, their lives will be impaired by suffering from nausea, headaches, vomiting, difficulty breathing, asthma, coughing, eye irritation, sore throat, respiratory irritation, and sleep disruption. Many if not most ag workers in Sonoma County today are Hispanic or other minorities who occupy the lower rungs of the socio-economic scale.

In [Environmental Justice: Addressing the Burden of Air Pollution](#), the American Lung Association supports relieving the disproportionate burden on communities of color and achieving environmental justice by formulating health and environmental laws and policies to address the factors contributing to the disproportionate levels of exposure in these communities. Surely exposing ag workers and their families to unhealthy air in their homes is such a policy.

Many ag workers have poor command of English and are relatively new to this culture. It is evident that few attend hearings and none filed comments on the proposed ordinance (if they are even aware of it; few supervisors announce the cannabis ordinance process in their newsletters, perhaps fearing how an informed citizenry might react). While the voices of ag workers are not heard during the EIR process, equity demands that their health and safety be greater priority than increasing business opportunities for affluent cultivators who rarely live at or near the cultivation sites that are the source of their income and air pollution.

Inadequate Responses to Cannabis Emissions Concerns.

This section provides eleven examples of the FEIR's inadequate responses to concerns raised about unhealthy cannabis emissions.

a. Bennett Valley Odor Map Evidence.

Comment (I76-2, O11-2, O19-3): Residents provided a detailed map showing odor complaints from a one-acre cultivation site at 2274 Wellspring Road in Bennett Valley, with documented complaints extending over 2,500 feet away. One family could not open the windows for weeks and could not use natural air conditioning.

Response: The county refers readers to "Master Response 1" without directly addressing the specific evidence presented or explaining how 100-foot setbacks could possibly protect residents when documented odors travel 2,500+ feet.

Inadequacy: The response ignores and belittles concrete evidence and fails to explain the contradiction between the proposed setbacks and documented odor travel distances. The attached Emissions Critique shows that unhealthy emissions, as verified by measurements in the field, often extend as far as 2,500 feet.

b. Health Impact Dismissal.

Comment (I117-10): A resident cited multiple scientific publications documenting adverse health effects from cannabis VOC emissions, including formation of carcinogens such as formaldehyde and ground-level ozone, with references to peer-reviewed studies.

Response: The county dismisses this comment by incorrectly claiming cannabis VOC emission rates are "low" based on a single 2019 Colorado study, without addressing the specific health evidence or the formation of secondary pollutants.

Inadequacy: The response cherry-picks and distorts findings from a single study while ignoring multiple peer-reviewed publications the resident referenced. It fails to address secondary pollutant formation. This obfuscates this issue and fails to fully disclose the environmental impacts of the cannabis ordinance.

c. Real-World Odor Experiences.

Comments (Multiple): Residents described being "confined in their homes for days or weeks," children with breathing problems exacerbated by cannabis emissions, and odors detected 6-8 miles away from cultivation sites.

Response: The county consistently refers to odors as mere "annoyances" and directs readers to Master Response 1, rather than acknowledging the severity of reported health impacts. The county has not done a scientific odor analysis but rather relies on theoretical models.

Inadequacy: The response minimizes and dismisses lived experiences without providing substantive technical analysis of why these impacts occur or how to prevent them. The attached Emissions Critique provides empirical field measurements confirming the experience of the commenters. The attached Health Critique explains the many errors the FEIR consultants made in calculating human safe myrcene exposure levels, including (1) assuming protecting a 154-pound worker equally protects children, developing fetuses, the infirm and the elderly (ignoring that small children are then exposed to much higher emissions levels); (2) a failure to acknowledge that inhalation provides much higher levels than oral consumption; (3) a failure to understand that a higher OEL is less protective than a lower OEL; (4) a failure to understand that fat-soluble molecules such as myrcene accumulate in humans but not in rats, skewing the safety analysis; and (5) a failure to understand that inhalation provides a direct route to the brain.

d. Setback Inadequacy.

Comment (O19-3): Residents pointed out the "illogical" nature of protecting children at school with 1,000-foot setbacks while the same children at home have only 100-foot protection, citing documented odor impacts at 2,500+ feet.

Response: The county acknowledges the difference in setbacks but does not address the logical inconsistency raised or explain why residential setbacks are so much smaller (as little as 100 feet) than school setbacks.

Inadequacy: The response fails to address and explain the core logic of the concern about inconsistent health standards. There is no factual or policy explanation of the differences.

e. Gas Chromatography Testing Demand.

Comment (O11-2): Residents requested that cultivation permits require growers to demonstrate with quantitative Gas Chromatography that no terpenes, carcinogens, or odors at human detection limits leave the property.

Response: No substantive response to this specific technical mitigation suggestion - only generic references to Master Response 1 which does not address this issue.

Inadequacy: The county completely ignores a specific, technically feasible monitoring solution. The attached Emissions Critique shows that unhealthy emissions, as verified by measurements in the field, travel far and often invade neighboring properties.

f. Paraplegic Child's Life-Threatening Breathing Problems.

Comment (O2-1, O18-1): Residents cited a federal lawsuit filed in August 2018 where neighbors in Petaluma reported that "strong skunky smell of cannabis cloaked the neighborhood" causing "significant breathing problems" for a young paraplegic who relied on a breathing tube and was at risk of suffocation.

Response: The county provides no direct response to this life-threatening medical emergency case. It only refers to generic Master Response 1, without acknowledging the regulatory failure to protect a disabled child being at risk of suffocation.

Inadequacy: The response completely ignores a documented case where cannabis odors created a life-threatening medical emergency for a vulnerable child, showing callous disregard for disability rights and public health. It highlights the failure of the FEIR to fully disclose the impacts of unhealthy cannabis emissions. The attached Health Critique explains the many errors the FEIR consultants use to conclude there is no health risk from beta-myrcene, and notes it refused to modify any calculations based on its clearly-demonstratable errors apparently because it thinks its “guns for hire” consultants have more experience than the Neighborhood Coalition’s volunteer experts who collectively have over 150 years combined experience, hundreds of peer-reviewed publications, and expertise in pharmaceutical toxicology, regulatory development, inhalation technology and public health. The “Master Response 1 Health Critique” contains a comparison of the consultants on both sides of this issue.

g. Medical Professional's Expert Concerns Dismissed.

Comment (I114-4): A practicing physician expressed "serious concerns about the health hazards posed by the molecular debris in the air associated with cannabis operations" and stated that "adequate safety measures are not included in the proposed regulations."

Response: The county only refers the medical professional to Master Response 1 without addressing the physician's specific medical expertise or concerns about molecular debris.

Inadequacy: The response dismisses a licensed physician's professional medical opinion without any substantive technical rebuttal or explanation of why the medical concerns are unfounded. The attached Health Critique explains why the physician is correct. Apparently, those who wrote the response for the FEIR think that pretending their experts have superior credentials is an excuse for ignoring germane comments and information, in violation of CEQA.

h. Pediatric Pulmonologist's Expertise Trivialized.

Comment (O18-37, O18-38): Dr. Alan H. Cohen, a board-certified pediatric pulmonologist with over 35 years of experience at Stanford University and other leading medical centers, provided detailed medical analysis about inhalation risks to children, pregnant women, and vulnerable populations from cannabis emissions.

Response: The county dismissed the pulmonologist's concerns by claiming that "pulmonary drug administration in pediatric populations" is "fundamentally different from incidental community exposure," completely missing the doctor's point about inhalation exposure risks.

Inadequacy: The response mischaracterizes the expert's concerns and fails to address his specific warnings about vulnerable populations being exposed to carcinogens through inhalation. The attached Health Critique explains why Dr. Cohen is correct. This is another example of the FEIR’s arrogance in claiming their experts have superior credentials as an excuse for ignoring germane comments and information. This violates CEQA.

i. Beta-Myrcene Carcinogen Risk Minimized.

Comments (Multiple): Residents extensively documented that beta-myrcene is a known carcinogen listed by California's OEHHA, comprises 50-70% of cannabis VOCs, and that "no safe limit for ingestion or inhalation has been determined." They noted that cannabis workers wear protective "moon suits" to avoid exposure.

Response: The county minimized these concerns by claiming that beta-myrcene "does not accumulate in the body" due to its 4.75-hour half-life in rats, completely missing the point about continuous 24/7 exposure to a carcinogen and failing to understand that lipophilic (fat-soluble) molecules such as myrcene have substantially longer half-lives in humans who have much more fat tissue where the molecules accumulate than rats. This results in much higher exposure levels in humans.

Inadequacy: The response ignores that continuous exposure to a carcinogen (even with a short half-life) can cause cumulative DNA damage and cancer risk. The half-life argument is incorrect as compounds have much longer half-lives in humans than rats, especially lipophilic compounds such as myrcene, and they can accumulate for two or more weeks. The attached Health Critique (p. 26) explains in detail why the FEIR's opinion about half-life is wrong. It also explains (p. 24) why the FEIR is wrong in rejecting the National Toxicology Lab's 2-year carcinogenicity study citing data that was definitively refuted in 2015 by California's OEHHA when listing beta-myrcene for Proposition 65. It is unscientific to rely on a study that was later refuted by a state environmental regulatory body.

j. Secondary Pollutant Formation Ignored.

Comment (117-10, O18-2): Residents provided multiple peer-reviewed scientific references showing that cannabis terpenes react with air to form secondary pollutants including formaldehyde (a Proposition 65 carcinogen), formic acid, and ground-level ozone, causing "nausea, burning of eyes and throat, cough, and respiratory distress."

Response: The county dismissed these concerns by referencing a single 2019 Colorado study about indoor facilities and claiming that outdoor cultivation would have "lower" ozone formation because "precursors would more readily dissipate into open air."

Inadequacy: The response ignores multiple peer-reviewed studies about secondary pollutant formation and provides no scientific evidence to support their claim that outdoor cultivation reduces these chemical reactions. The "dissipation" argument does not address the formation of harmful secondary compounds. The attached Health Critique" (pp. 23-24) explains in detail why the FEIR's opinion about ozone formation is wrong.

k. Reduced Setback Impacts Ignored.

Comment (O18-1): Residents pointed out that the ordinance eliminates the current 300-foot setbacks and reduces them to only 100 feet, meaning residents who "currently have an inadequate buffer of 300 feet from their residences could see that buffer cut by two-thirds."

Response: The county provided no response to this specific concern about reducing existing protections and making unhealthy odor impacts worse for current residents.

Inadequacy: The response completely ignores that the ordinance would worsen conditions for existing residents by reducing already inadequate setbacks, violating CEQA's requirement to analyze increased impacts. The attached Emissions Critique shows that unhealthy emissions, verified by measurements in the field, will often invade neighboring properties, especially with a mere 100-foot setback. The response fails to address equity concerns for ag workers and their families being exposed to unhealthy air pollution.

IV. Responses to Comments that Proposed Setbacks and Parcel Sizes Do Not Protect Public Health or Achieve the Stated Goal of Neighborhood Compatibility; Greatly Increasing Setbacks and Parcel Sizes Are A Feasible Means of Mitigation.

The County is legally required to mitigate or avoid the significant impacts of the projects it approves whenever it is feasible to do so. Pub. Resources Code § 21002.1(b). This includes much greater setbacks that Permit Sonoma has proposed.

Comment O19-3 stated the setbacks are inadequate, and it is illogical to protect children at school more than at home or to have to send them to school so they can be more protected during harvest. Zoning has no bearing on whether to protect a residence. A map depicting odor complaints for a one-acre cultivation operation was provided showing widespread problems including a home 2,500 feet from the cultivation site where the residents could not open their windows for weeks.

Response O19-3 cites Master Response 1 and response to Comment O18-2 which fail to respond to this comment. They belittle the odor map, deeming it to be mere “lay evidence” that cannot be verified. They claim the comment provides “no evidence” that a 2,500-foot setback from all residences provides enhanced mitigation. If 2,500 feet were effective, it claims that parcels would have to be so large and remote that they could not be used for cannabis cultivation. There is no support in the record for such a claim. As explained in the attached Emissions Critique, the FEIR relies on unverified theoretical modeling to assess the dispersion of cannabis emissions and ignores abundant empirical measured data that show 2,500-foot setbacks are needed. It is unscientific and illogical to rely on theoretical models when empirical data show the models produce wrong results.

Comment O19-4 stated the minimum lot size for cultivation should be retained at 10 acres, if not increased to 20 acres.

Response O19-4 cites only Master Response 1, which does not respond to the comment. As explained in the attached Emissions Critique, the FEIR relies on inaccurate and theoretical dispersion modeling instead of empirical measurements of the carcinogen beta-myrcene to assess the health effects of cannabis emissions. The FEIR's reliance on unscientific methods to disclose the environmental impacts of the proposed cannabis ordinance has led to erroneous conclusions about minimum lot sizes. The County Supervisors increased minimum parcel size to 10 acres in 2018 to improve neighborhood compatibility. The FEIR now proposes to reduce this to 5 acres, which is only possible with setbacks of only 100 feet. The FEIR provides no reason that greater

setbacks than Permit Sonoma has proposed are not feasible with larger parcel sizes. Therefore, they are required under CEQA. Further, the FEIR is incomplete because it did not study any option to increase parcel size, which based on the county's economic modeling could have easily accommodated such growth and provided adequate setbacks.

V. Responses to Comments that Crop Swaps Do Not Qualify for Ministerial Permits are Inadequate.

Comment 019-7 stated the crop swap proposal “assumes that there are no new or different environmental impacts to be analyzed when marijuana replaces an existing crop, and that no site-specific review or input from neighboring property owners or residents is warranted.”

Response 019-7 cites Master Response 4: Crop Swap Approval, about 80% of which discusses the approval process for individual cannabis projects in the DEIR (which is non-germane) and a reiteration of the fact that crop swaps are ministerial. None of Master Response 4 responds to the comment. It also states that if there are cumulative impacts they can be imposed as part of a ministerial process without public participation. This is Kafkaesque and violates *Protecting Our Water & Envtl. Resources v. County of Stanislaus* (“POWER”) (2020) 10 Cal.5th 479, 501.

Comment 019-8 objects to the proposed “no net increase in groundwater” requirement because almost no water monitoring data exists in Sonoma County for agricultural crops, so the standard relies on a County official exercising judgment as to the baseline. This is forbidden by POWER.

Response 019-8 cites Master Response 2: Legality of Cannabis which explains how the county justifies a preferred alternative that violates the California Supreme Court's POWER ruling. It also cites Master Response 5: Water Supply. About 80% of Water Supply discusses groundwater pumping in specific watersheds, together with Mitigation Measure 3.10-2a (protect groundwater resources) which deals with use permits, not ministerial crop swaps. It is irrelevant. Water Supply does discuss Mitigation Measure 3.10-2b (ZPC), which applies to ministerial permits. This policy requires “net zero” during the dry season (April to October) and groundwater metering. It does not address the problem that there is no baseline monitoring. It does not address the violation of POWER when county officials exercise judgment in determining what the baseline may be and their use of judgment in determining adaptive management measures if the grower fails to achieve no net zero.

Comment 019-9 challenges the assumption that achieving no net increase on an annual basis protects the environment. It notes that a gallon of water consumed in spring is not identical to a gallon of water consumed in late summer, and that cannabis (unlike other crops) consumes water voraciously during late summer when stream flows and watersheds are most stressed. It also notes that Sonoma County's procedures are insufficient to establish a baseline for historic water use.

Response 019-9 cites only Comment O24-18 regarding differing rates of cannabis water demands and Master Response 5: Water Supply. These provide no responses or information regarding the stress on watersheds or the threats to the creatures that live in riparian habitats during late summer. It provides no response about the lack of valid baselines for water use.

Comment O19-10 notes that crop swaps would stress neighboring wells, riparian habitats, and the watershed during late summer and autumn, which impacts amphibians in riparian zones and salmonids. For this reason, water use needs to be evaluated on a case-by-case basis. A program EIR cannot make such a determination. Response A2-1 admits that programmatic EIRs lack the “site-specific and project-specific information” that is needed for most projects.

Response O19-10 cites Master Response 5: Water Supply and Responses to Comments O24-18 to -O21 and O24-46 to -61. While these have general information, none address the issues raised in this comment. Once again this response is intended to obfuscate rather than disclose information. Certain comments refer to yet other comments, so the reader must look for a needle in a haystack while vainly searching for a germane response. Some responses refer to Mitigation Measures 3.10-2a and 3.10-2b which, as discussed above, do not address the late summer water issues. Response O24-20 is particularly disingenuous. It asserts there is no discretion in issuing a crop swap permit, yet states the county must exercise its discretion to determine if a project qualifies for a non-discretionary permit in the first place. This response is Kafkaesque.

The FEIR assumes that the effects of water use on endangered amphibians and on other flora and fauna that require healthy riparian habitats to survive is only the footprint of the cultivation site (Letter O17 notes that the Matanzas Creek watershed in Bennett Valley has good riparian habitat and the presence of at least four endangered, threatened, or sensitive species: California giant salamander, red-bellied newt, red-legged frog, and yellow-legged frog). Cannabis water use during the driest months can drain the watershed and destroy riparian habitat, thereby killing the flora and fauna that need it to live. The FEIR fails to disclose the environmental effects and instead obfuscates it.

Comment O19-11 notes that cannabis fields, unlike other crops in Sonoma County, emit large amounts of noxious and unhealthy compounds including carcinogens that harm neighbors. The proposed setbacks do not account for site-specific issues due to topography, winds, and inversions that trap air for days (*see* DEIR, p. 3-3-7). These must be addressed in a conditional use permit, and ministerial crop swap permits violate CEQA.

Response O19-11 cites Master Response 1: Evaluation of Cannabis Odor Impacts. As discussed in the attached Health Critique, it utterly fails to address these issues.

Comment O19-12 notes that cannabis cultivation generates much more traffic than vineyard or orchard operations, especially during the autumn harvest. This is a serious problem on the County’s narrow, rural roads, particularly during emergency evacuations. The crop swap proposal assumes this problem away by selecting an arbitrary number of employees, much lower than those reported in Sonoma County.

Response O19-12 fails to address how cannabis operations can credibly operate with traffic volumes anywhere near the levels for orchards or vineyards. Perhaps Permit Sonoma is encouraging applicants to grossly under-report their actual traffic, after which Permit Sonoma will allow them to operate with excess traffic. What is important is peak traffic during harvest, not “average” traffic over an entire year that includes many months without traffic. There is no

explanation of how to address evacuations, and the use of “average” traffic masks the serious problems because peak fire season and harvest occur simultaneously.

Comment O19-13 notes that ministerial permits have no mechanism to analyze and consider cumulative impacts resulting from a concentration of cannabis cultivation sites. It depicts a portion of Bennett Valley where merely 10 parcels could engage in crop swaps to allow 58 acres of cannabis cultivation. The proposal authorizes this example, and thousands of others, which raises all issues discussed in Comment O19-10 to Comment O19-12 in the cumulative impact context. Examples include odor, traffic and the destruction of riparian habitat needed for survival by endangered and threatened amphibians because of excessive groundwater pumping. The programmatic DEIR does not (and cannot) assess these issues with the degree of granularity that is needed.

Response O19-13 is a non-sequitur. It discusses the six alternatives studied and generally refers to a discussion of cumulative impacts in the DEIR, the certification process, and statement of overriding considerations. It does not address the issues raised here and states instead “there are no specific issues pertaining to the adequate or accuracy of the Draft EIR for which further response can be provided.” However, the FEIR (p. 3-11) concedes that unhealthy cannabis emissions “can accumulate in low land areas such as valleys that exist in the county under certain topographic and climate conditions during various time periods of the year (e.g., temperature inversions where dispersion of pollutants is suppressed), especially during outdoor cannabis harvest periods that primarily occur in the fall months.” Yet the FEIR states that including these conditions would not change the results of their modeling. The FEIR does not and cannot study the health problems created by a concentration of cultivation sites because with ministerial permits under crop swaps there is no mechanism to consider cumulative effects. The FEIR cannot conclude that crop swaps will not contribute to cumulative impacts simply because a single project might have a less than significant impact. *See Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d at 720-21 (“Cumulative impacts can result from individually minor but collectively significant projects”). Under the proposal, permits must be issued even if catastrophic environmental consequences are known to ensue.

Comment O24-5 noted that cannabis production is substantially different from traditional agricultural crops, such that an “apples to apples” comparison of it to other crops’ water usage—and for that matter, these crops’ uses of and impacts to many other environmental resources—is unjustified. Moreover, as the experiences of other jurisdictions show, crop insurance for traditional agriculture can become unaffordable when adjacent fields convert to growing a higher value product like cannabis, and dust and chemicals from traditional agriculture can trigger complaints or even legal action from cannabis operators.

Response O24-5 states the comment addresses financial issues and implies that adjacent cannabis uses would harm existing agricultural pursuits, and it is not clear how the Cannabis Program Update could affect other agriculture. This response fails to acknowledge that ministerial permits would never review the viability of a neighboring agricultural operation from a new potentially incompatible cannabis operation.

VI. Responses to Comments that Rural Farm Stands and Cannabis Events Invite Crime and DUIs.

Comment O19-16. Allowing farm stands, cannabis tasting, and sales at events at rural cultivation sites invites crime. The Neighborhood Coalition submitted a detailed crime report with facts from Bay Area law enforcement agencies showing that cannabis operations are linked to a rise in violent crime. It noted that because Napa and Marin do not allow cannabis grows Sonoma County is an inviting target. The DEIR's crime statistics are incredibly low, failed to include information from Santa Rosa or other Bay Area counties, assume that criminals restrict their activities to their own neighborhoods, and fail to acknowledge that the proposal could increase existing outdoor cannabis cultivation by 14 times. The Sonoma County Sheriff's Office has emphasized the dangers of rural crime. The California Highway Patrol emphasized the dangers of violent crime related to rural cannabis operations. Cannabis consumption in rural areas encourages stoned driving on narrow roads, and the proposal lacks DUI safeguards.

Response O19-16 refers to Section 3.2.3, "Master Response 3: Law Enforcement and Crime," and response to Comment O24-41. The responses fail to address the concerns of the Sheriff or the Highway Patrol, or concede that most cannabis crime is undertaken by non-residents of Sonoma County. They fail to explain the vast discrepancies between their data (10 crimes) and our verified crime report (1,972 crimes), or update the DEIR's crime statistics with those from Santa Rosa where much of the county's dispensaries and associated crime are located. They fail to discuss cannabis murder statistics. They fail to acknowledge that decreasing security requirements would likely invite more crime. They state that they expect cultivation sites to be fenced because current operators have fences without acknowledging that current sites are fenced because the ordinance requires fencing! They fail to acknowledge that the DEIR's projected 14-fold increase in cultivation would increase crime correspondingly. The responses fail to address DUI concerns. While Response 08-1 notes it is illegal to drive under the influence of drugs, it assumes that drivers will obey the law. It does not acknowledge that 20% of traffic deaths now involve marijuana use or that, unlike alcohol, there are no methods to field test for marijuana use for suspected DUIs.

VII. Posting Cleanup Bonds to Protect the Environment.

Comment O5-5. The Neighborhood Coalition suggested requiring growers to post bonds to remediate damage when they abandon their grows. This is a feasible mitigation requirement.

Response O5-5 cites an SWRCB Order that requires cultivation sites to implement a Site Closure Plan for cultivation to stabilize the site as well as filing a Site Closure Report and the Notice of Termination. These requirements seem to only apply to water discharges and are often not enforceable. The response fails to acknowledge that many growers that have terminated in Sonoma County have filed for bankruptcy, have no assets, simply disappear, and leave the cultivation site with great environmental damage that no one (e.g., the County) cleans up.

VIII. Alternative 2 Reduces Energy Consumption Impacts and is the Environmentally Superior Alternative.

Comment O6-1. The Neighborhood Coalition asked the County to analyze an "indoor cultivation only" option. The DEIR (Table 5-2) wrongly concludes that Alternative 5, which assumes fossil fuel use can be mitigated by energy efficiency standards alone, would eliminate more significant and unavoidable impacts than Alternative 2, which relies on renewables. This false premise is based on the finding that Alternative 2 invariably increases energy impacts. Correcting this error, through substantial analyses, would make Alternative 2 the environmentally superior alternative.

Response O6-1. Alternative 2 increases energy impacts. The Neighborhood Coalition proposed scenarios where warehouse-grown cannabis energy can be supplied with 100% renewable energy using solar power generated in Sonoma County or green energy provided by Sonoma Clean Power. The unsubstantiated and false conclusion that fossil fuel impacts for operations, groundwater pumping and worker commutes to remote locations can be mitigated by EV chargers at the site, energy efficient building standards and Energy Star appliances is not supported.

Alternative 2 appears to be the environmentally superior alternative (DEIR, 5-33). The DEIR acknowledges that Alternative 2, limiting commercial cannabis cultivation to indoor,

would eliminate significant and unavoidable odor impacts and lessen related impacts to aesthetics, agricultural and forestry resources, greenhouse gas emissions and climate change, hydrology and water quality and wildlife.

Comment O6-2. The DEIR Table 5-2 asserts that indoor cultivation increases impacts related to energy. The Neighborhood Coalition suggested the energy issue can be resolved by having Sonoma Clean Power build a 5-acre solar plant in the airport area which could supply full power requirements for 4-5 cannabis cultivation warehouses.

Response O6-2 concedes this would reduce environmental impacts and implies that this could make Alternative 2 the environmental preferred alternative. Alternative 2 meets the CEQA Guidelines as well as the majority of Program Objectives. "The State CEQA guidelines Section 15126.6 (a) requires EIRs to describe "a range of reasonable alternatives to the project or location of the project, **which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects** of the project and evaluate the comparative merits of the alternatives." (emphasis added).

The response then states, "this scenario would not attain most of the project objectives" because it "would not regulate cannabis more similarly to other agricultural uses" and "would not increase business opportunities." And the one objective relied on to make this determination - Objective 4 - identifies the wide range of policy and environmental impacts associated with deeming cannabis as "Controlled Agriculture," a definition and proposed practice which do not comply with Federal or State regulations:

Objective 4. Regulate cannabis located on agricultural lands more similarly to other agricultural uses, **while recognizing its Federal classification**, legal history, **crop value, transaction security, distinct odor, and energy and water requirements.**

(Emphasis added).

Renewable energy and affordable/profitable business opportunities were set aside by citing only one of nine objectives, even though Alternative 2 performed better than other Alternatives relative to the other eight objectives. As to business opportunities, cannabis grown indoors has a significantly higher market value, produces more product while disturbing less land, and provides business opportunities for solar-power installers, maintenance personnel, and cannabis workers. Furthermore, Alternative 2 would remove the gross inequity proposed for all outdoor cultivation of only requiring a 100 ft setback to all Ag- and RRD-zoned land, where disproportionate numbers of low income, ag workers, and people of color and their children live.

Comment O6-3. The Neighborhood Coalition requested that the County provide incentives for cultivators to rent space in warehouses and allow only indoor cultivation on industrial-zoned lands while providing solar energy to power the indoor facilities.

Response O6-3 mostly discusses the various alternatives in the DEIR and wrongly suggests this comment proposed a cannabis ban. The comment proposed locating cultivation, production, and distribution facilities in areas with the lowest impacts, including cannabis lounges in commercial areas. These facilities and zoning codes have adequate infrastructure – roads, water, sewer, and police protection.

Comment O6-4. The Neighborhood Coalition provided analyses for total warehouse energy demand based on two sets of conservative assumptions and analyses for energy supply using various scenarios and information sources.

Response O6-4 states the DEIR does not evaluate energy impacts of specific commercial cannabis cultivation site construction and operation but focuses on the worst-case energy-related impacts that could occur from the implementation of the program. While the values presented in this comment may differ from those in the DEIR, the comment does not address the adequacy or accuracy of the information provided in the DEIR. The reader is referred to response to Comments O6-1 and O6-3.

Impact 3.6.1 is clear, the Cannabis Program’s Preferred Alternative will “result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.” The findings and justification of reliance on fossil fuels as “significant and unavoidable” are not backed up by substantive evidence or analyses of various scenarios even though data and methodologies are readily available to calculate GHG emissions and impacts, and the relative effectiveness of different energy efficiency measures. The FEIR found that the program did not comply with the County’s Climate Action Resolution’s energy goals, yet, it did not provide adequate mitigations for energy and other land use impacts.

Because of the many failures detailed above, the Neighborhood Coalition urges the Planning Commission to not recommend certifying the FEIR.

Sincerely,

Neighborhood Coalition
Nancy and Brantly Richardson, Communications Directors
SonomaNeighborhoodCoalition@gmail.com

Attachment 1. Critique of FEIR Analysis of Health Impacts in Master Response 1

Attachment 2. Critique of FEIR Analysis of Odor Detection, Setbacks, and Dispersion Modeling
in Master Response 1

ATTACHMENT 1



CRITIQUE OF FEIR ANALYSIS OF HEALTH IMPACTS IN MASTER RESPONSE 1

September 13, 2025

Executive Summary

1. The NC experts have provided 5 independent reports that address serious concerns with public safety of cannabis emissions/myrcene and fatal flaws in the FEIR analysis of safe exposure level and odor dispersion modeling. These experts have over 150 yrs combined experience, hundreds of peer-reviewed publications, and expertise in pharmaceutical toxicology, regulatory development, inhalation technology and public health.
2. The FEIR consultants have far less extensive or relevant experience, listing 25 yrs experience in workplace risk assessment and expertise in the flavor/food additive industry and no public health experience.
3. The FEIR has major errors in calculation of human safe myrcene exposure levels:
 - a. They state that protecting a 154-pound worker translates to protecting the community at large.
 - b. They ignore children, developing fetuses, the infirm and the elderly.
 - c. They don't understand that inhalation provides much higher levels than oral.
 - d. They don't understand that a higher OEL is less conservative (less protective).
 - e. They don't understand that fat-soluble molecules such a myrcene accumulate in humans but not in rats, skewing the safety analysis.
 - f. They based safe exposure level on a known carcinogenic dose with no subsequent lower adjustment to address this.
 - g. They fail to understand that inhalation provides a direct route to the brain.
4. The FEIR inappropriately rejects the National Toxicology Lab 2-year carcinogenicity study citing data that was definitively refuted in 2015 by California's OEHHA when

listing on Prop 65.

5. The FEIR does not address the many health-related comment letters concerning cannabis emissions, effects of multiple toxins, assumptions for calculation of safe exposure levels and levels of toxic exposure, nor address or modify any calculations based on the many factual and scientific comments. This approach contradicts CEQA's mandate that in responding to comments, an agency must provide a reasoned analysis supported by factual information (CEQA Guidelines § 15088(c)). The County has not shown a good faith effort to consider public input, much less modify the EIR as a result.
6. The FEIR consultants confirmed no human data exists with myrcene. Thus analyzing animal toxicity studies is essential in predicting human health risk from exposure to myrcene in cannabis emissions. Yet they cherry-picked and ignored data.

Comparative Scientific Credentials

As summarized below, the extensive credentials of the NC experts contradict the FEIR's statement that their consultants are superior and that our consultants should be ignored. The NC experts include Dr. George Rutherford, Dr. Alan Cohen, Dr. Srinivasan Venkateshwaran and Dr. Deborah Eppstein, who have over 150 years combined expertise encompassing public health, inhalation technology, pulmonary medicine and drug development including pharmaceutical toxicology testing and work with FDA regulators. In addition, Dr. Mark Kram has extensive expertise in quantitative, real-time field measurements of cannabis terpenes and distance they travel.

The expertise and experience of the NC consultants far exceeds that of the Trinity/SafeBridge consultants, who state that they have 25 years of expertise in performing risk assessments of chemicals, working for trade associations and biotechnology R&D. They have much more limited toxicology and pharmaceutical experience and lack public health expertise. Further, as noted by Ascent in Master Response 1, those Trinity/SafeBridge consultants have focused on the flavor/food additive industries. Their CVs also list experience in the chemical, electronics recycling, fiberglass, concrete and oil industries with their only apparent experience in cannabis from the Yolo EIR which is replete with inconsistencies, inaccuracies, and antiquated methodology, and is subject of an ongoing lawsuit. The NC experts are highly regarded in the scientific community concerning public safety and new drug development, with many FDA interactions and work with biotech and major pharmaceutical companies as well as major leadership roles in public health. Their hundreds of peer-reviewed scientific publications and invited lectures

further attest to their high regard in the scientific community. Their over 100 years' experience in pharmaceutical drug development provides a high level of expertise in understanding safety requirements for testing in humans, including regulatory/FDA, toxicity testing, inhalation and pulmonary drug development, brain chemistry drug development, medical affairs, pediatrics, cancer research and work with controlled substances. Dr. Rutherford also has extensive expertise in public health, including serving as California Public Health Officer and State Epidemiologist.

With all due respect to the Trinity and SafeBridge consultants, the expertise of the NC scientists and their independent expert consultants much better encompasses the areas relevant to analyzing the toxicities of cannabis emissions (including myrcene and other components discussed in their submissions) and safe exposure levels. Although the FEIR does acknowledge (Response O18-13, p3-174) "Dr. Eppstein has excellent credentials as a pharmacologist/virologist. The county appreciates the opportunity to consider her comments on this matter", they still ignore her comments as well as those of the other 4 independent consultants. None of the NC experts were paid consultants. This is in marked contrast to the FEIR consultants, as Trinity/SafeBridge were paid contractors.

Flawed Safety Exposure (OEL/REL) Analysis

As discussed in the NC comment letters, the FEIR's OEL/REL analysis of safe levels of myrcene is replete with major errors, ignoring basic facts of science and drug exposure. Trinity/Safebridge focused on "workplace exposure", stating that this would determine safe levels for the community at large. That statement is far from the truth, as they only analyzed safe levels for an "average 154-pound worker", ignoring children, developing fetuses, the infirm and the elderly. This lack of understanding of safe community exposure levels including for children may stem from their prior work on developing workplace exposure levels for the chemical industry and their lack of public health expertise. Their disregard of the National Toxicologic Laboratory (NTL) data on carcinogenicity counters science as discussed further below. The FEIR responses and frequent non-responses to the many points raised in the comment letters is severely lacking, as addressed below. It is noteworthy that the FEIR largely did not address or even acknowledge the many comments concerning calculation of safe exposure level, and did not make any changes to its conclusions and recommendations concerning safe exposure levels due to the data presented by the many pages of comment letters. This approach contradicts CEQA's mandate that in responding to comments, an agency must provide a reasoned analysis supported by factual information (CEQA Guidelines § 15088(c)). The County has not shown a good faith effort to consider public input, much less modify the EIR as a result.

The FEIR states that there are no documented cases of human cancer caused from myrcene. Of course there are not, as the time frame since widespread exposure of the public to cannabis emissions only started in 2017-2018 after the legalization of

commercial cannabis cultivation in California, which is far too short for appearance of cancers. Toxicities in workers (often undocumented and exploited) from the illegal industry are not likely to be made public. Cancers take decades to appear after the carcinogenic insult: for example, with tobacco use, lung cancers appear decades after smoking, or skin cancers appear decades after excess sun exposure.

1. **The Occupational Exposure Limit (OEL) and Relative Exposure Level (REL)**

calculations are orders of magnitude too high. The FEIR failed to address the points in the several letters concerning this as summarized below:

- a. As detailed in several comment letters (Dr. Cohen, Dr. Eppstein), the OEL was only calculated for a 154-pound (70 kg) worker, exposed 8 hours/day, for 5 days a week. The FEIR states that this risk exposure level is more than adequate to equate to safe exposure levels for everyone, which includes children, developing fetuses, the infirm and the elderly. That statement is absolutely false. For myrcene, exposure risk is determined by the amount of a toxic substance that a person is exposed to **relative to their body weight**. The FEIR SafeBridge consultants even discuss myrcene toxicities in a mg /kg basis in calculating the OEL for the 154-pound worker their OEL Monograph, yet they ignore these basic facts in their OLE/REL figures for the community at large. A 30-pound child weighs 1/5 as much as the “154-pound average worker”; a 15-pound child weighs 1/10 as much. Developing fetuses weight much less. Accordingly, the “safe” level determined for the 154-pound person needs to be divided by 5 for the 30-pound child, and by 10 for the 15-pound child. The level for the developing fetus is unknown, but significantly less (discussed in letters by Dr. Cohen and Dr. Eppstein. These factors requiring that **safe dose be scaled relative to body weight** dictate that the **OEL must be reduced by at least 10-fold**.
- b. The DEIR/FEIR stated that the OEL was calculated assuming that oral dosing of myrcene provided the same level in the body as did inhalation dosing. That is patently wrong. Inhalation provides 3-5 times higher uptake by the body as does oral dosing (references in Myrcene Report; further discussed in letters from NC and Dr. Eppstein). The FEIR non-scientifically, with absolutely no data at all, merely claimed that myrcene was distributed identically after oral or inhalation administration and thus its bioavailability was assumed to be the same. As discussed in detail below in #4, the FEIR also completely misunderstood that a higher OEL was less conservative (less protective of the public), not more conservative and more protective as they state. Thus, taking into account the **3-5 fold greater bioavailability by inhalation vs oral**, the **OEL calculated from**

oral dosing must be reduced by at least 3-fold for inhalation exposure.

c. The letter from Dr. Venkateshwaran discussed that **inhalation provides a direct route to the brain** as any molecule binding to the olfactory (smell) receptors is transported directly to the brain via the olfactory pathway. This can result in much higher levels in the brain than with oral delivery where the molecule is transported by the blood, as a blood-brain barrier exists as a protective mechanism that prevents most compounds from passing from the blood into the brain. No toxicity studies have been done on the inhalation route to assess brain toxicities. The FEIR response merely dismissed this comment as irrelevant with no data or valid explanation. It appeared that they did not to understand this science and the mechanism of direct delivery to the brain.

d. The OEL was calculated for 8 hr/day, 5 days/week exposure (thus exposure for 24% of the time). To account for **constant exposure, the OEL needs to be reduced by another factor of 4.**

e. The OEL was calculated from a dose that was known to be carcinogenic in the NTL two-year carcinogenicity studies, as the lowest dose tested was still carcinogenic. The DEIR/FEIR justified this by also calculating the OEL from a much shorter, 90-day subchronic dosing study done for the much lower doses used in the flavor industry (Baskaki et. al., ref. 1 in SafeBridge's OEL Monograph in DEIR). That 90-day study says nothing about carcinogenicity at the lower doses tested, as 2 years dosing in two species is required by FDA to evaluate carcinogenicity. Furthermore, they ignored that the Baskaki study even concluded, "The results in this study are indicative of the **target organ toxicity pattern** that at higher intake levels, such as those tested in NTP studies, produces more **severe toxicity and leads to associated neoplastic lesions**" and "...development of the neoplastic effects reported previously by the NTL are not relevant to human risk from low levels of intake of b-myrcene through the diet when used as a flavoring substance..." The Baskaki authors' conclusion that their lower-dose and shorter-duration study does not indicate safety at higher doses and in fact is **indicative of toxicities and carcinogenicities at higher doses** [eg, such as from inhaled cannabis emissions] confirm its lack of relevance to calculating a chronic safe-exposure level. Furthermore, the lowest dose tested in the NTL study showed other toxicities after 23-70 days dosing, long before the cancers appeared. Since the FEIR OEL was **based on a known toxic and carcinogenic dose, it needs to be lowered**

by at least another factor of 10.

2. In summary, based on the discrepancies listed above, the OEL of 5 mg/m³ (= 820 PPB, an extremely high level) **needs to be reduced** by at least 1/10 x 1/3 x 1/4 x 1/10 = 1/1200, or a **~1000 fold reduction**, to a value of 0.8 PPB, rounded up to **1 PPB**. This figure is consistent with the levels from the analysis in the Myrcene Report in Table 1 in the Appendix. **A huge omission and inaccuracy in the FEIR is its failure to address any of the above points detailed in several of the comment letters**, instead continuing to only rely on a single 10-fold reduction to account for continuous exposure, which was used in the DEIR to give an REL of 0.5 mg/m³, or 82 PPB. Even that is still a highly noxious level that causes immediate toxicities in neighbors (nausea, respiratory and eye irritation, headache, asthma) in addition to longer-term toxicities (Myrcene Report). Note that the NTL studies also showed toxicities in liver and kidney after 23-70 days dosing (~1.6 - 5 yrs in humans) in addition to carcinogenicity after 2 years.

The FEIR incorrectly stated that “If you protect the worker, which is potentially expected to have the highest exposure, you also protect adverse effects to the wider community.” (p. 3-15). They stated that their OEL provides a safe exposure level that did not cause any toxicities. Thus they are stating that there are neither short term/immediate (e.g., irritation, nausea, asthma, etc.), intermediate term (e.g., liver and kidney toxicities), nor long-term carcinogenicity as confirmed in NTL studies. The FEIR provided no data on the absence of immediate toxicities (e.g., irritation, nausea, headache, asthma) when people including children are exposed to 820 PPB myrcene, for 8 hr/day, 5 days/week, for 40 years, or even when reduced 10-fold (their REL) to 82 PPB of continuous exposure. Their OEL/REL calculation was solely based on the oral animal toxicity studies, which did not look at these immediate toxic effects. Furthermore, **inhaling cannabis emissions** results in **much higher doses to respiratory tissues where the immediate irritation occurs** than occurs from oral administration. Based on the known immediate negative effects in people at those cannabis emission levels and with no animal data on the immediate respiratory toxicities from inhalation, the statement by the FEIR that no immediate toxicities such as respiratory irritation, will occur at their REL is simply wrong, as well as is their assumption that there would be no intermediate toxicities or long-term carcinogenicity.

The FEIR did not address nor account for other toxins in addition to myrcene from cannabis emissions, as discussed in several comment letters. Myrcene reacts with air to make **formaldehyde, a potent carcinogen also listed on Prop 65**, as well as

formic acid and ground level ozone, potent irritants. Combination of carcinogens would be predicted to result in cancers at lower doses than with single carcinogens. There are no animal data on dose of myrcene in combination with formaldehyde on cancer formation (discussed in comment letters and in references 10, 11, 12, and 37 in Myrcene Report).

FEIR Inappropriately Dismissed the Carcinogenicity Data as Irrelevant

3. The FEIR discounted the NTL 2-year carcinogenicity studies as being irrelevant to humans due to rat specific mechanisms, referencing a 2007 paper. These arguments were thoroughly addressed and debunked in detail by the California Office of Environmental Health Hazard assessment (OEHHA) in 2015, with OEHHA concluding that the concerns raised by the commenter were not valid based on not meeting any of the 7 established criteria (Ref 36 of Myrcene Report, p. 13-15). NTL concluded that myrcene was unambiguously a carcinogen with “clear evidence of carcinogenicity” in two species.

The FEIR also ignored the intermediate toxicity data (long prior to appearance of cancers) in the NTL studies discussed in the comment letters, showing unambiguous toxicities to liver and kidney after only 23-70 days of dosing, thus far sooner than the malignant tumors appeared. They ignored that the Bastaki 90-day subchronic toxicity study done for the food flavoring industry that used lower myrcene doses (Food and Chemical Toxicology 120:222-229 2018) also noted the same target organ toxicity pattern that produced more severe toxicity and carcinogenicity at higher doses in the NTL study (discussed above under 1e). As noted earlier, the FEIR statement that no cancers have been reported in people is irrelevant as the exposure times since widespread legal cannabis cultivation is only a few years, not the decades generally needed before one sees cancers from prior exposures.

4. The FEIR cherry-picked data, saying that since the subchronic 90-day oral feeding study done for the flavor industry did not show cancers, myrcene was safe and the NTL studies showing **unambiguous evidence of carcinogenicity** after 2 years dosing in both rat and mouse were irrelevant. Note that as expected, the NTL studies also did not show carcinogenicity after 90 days; [FDA requires 2 years dosing in 2 species for carcinogenicity testing](#). As discussed above, the FEIR comments trying to discredit the NTL studies, referencing a 2007 publication, were addressed in detail and effectively countered in 2015 by OEHHA when California listed myrcene on Prop 65, showing that the data did not meet any of the 7 criteria that would be needed to discredit the mechanism as being unrelated to humans. Contrary to what the FEIR states (p. 3-13),

FDA has not rejected these studies. Rather, FDA has stated that at the very low levels used in food additives, they felt myrcene was safe. Those levels as food flavorings are in the microgram/kg range and are orders of magnitude lower than what caused cancer in animals or the doses inhaled by neighbors from outdoor cannabis fields (which are in toxic and carcinogenic levels, see calculations in comment letters, Myrcene Report).

The FEIR also noted that foods naturally containing myrcene are exempt from Prop 65; this is completely irrelevant as this exemption 1) does apply to cannabis emissions which are not foods and furthermore 2) if something is a known carcinogen, the county should not authorize it to be forced on neighbors in toxic levels. As detailed in many comment letters, toxins (more than just myrcene) from cannabis emissions from outdoor cultivation cause immediate adverse health impacts to neighbors, and long-term can cause cancer. Sonoma County needs to understand those facts and protect its residents.

FEIR Failed to Understand and Address Additional Toxicities and Impact of Higher Bioavailability from Inhalation

5. The FEIR failed to address data in the comment letters on route of delivery that inhalation provides significantly higher bioavailability of the drug as compared to oral dosing; for cannabis compounds this is 3-5 fold higher amounts absorbed from inhalation than when given orally (ref. 34 in Myrcene Report). The FEIR consultants clearly do not understand this, as they repeatedly stated that, by assuming ingestion gave similar bioavailability as from inhalation, this was a more conservative (more protective) approach, giving a higher OEL! That is completely backwards. **A higher OEL is less conservative** as it says the compound is safer at higher levels- thus less protection as it allows the public to be exposed to higher levels. Their lack of understanding of this significant fact highlights their lack of understanding of the factors that are important for calculation of OEL as detailed in many comment letters and discussed above under 2a-f. As oral bioavailability is much lower than inhalation, their assumption of equal bioavailability (which is scientifically very wrong) is rather a **much less conservative (less protective) approach**; it incorrectly will predict a 3-5 times higher safe level than is warranted for the inhalation route. This was addressed in comment letters. Their statement that bioavailability of myrcene does not change the findings of concern on carcinogenicity (FEIR p. 3-15) is also scientifically wrong, as bioavailability of dosing determines what levels in the body of the compound tested are carcinogenic. A higher bioavailability means that cancer appears at a lower administered dose. Thus the carcinogenicity dose determined from oral dosing would

need to be divided by 3-5 to give the equivalent carcinogenic dose after inhalation.

FEIR Failed to Understand that Myrcene, a Highly Fat-Soluble Compounds, will Accumulate in Humans

6. The FEIR states that since the half-life (time for half of the compound to be cleared from the body) of myrcene in rats is 4.5 hrs, it will not accumulate in humans (p. 3-15). They fail to account that [half-life of lipophilic compounds are proportionately much greater in humans](#) than in rats due to greater amounts of fat tissue in humans, where the drug accumulates. One publication lists 13 x higher half-life for some lipophilic compounds. As myrcene is very lipophilic (i.e., more soluble in fat than in water), one may predict that a 4.5 hr half-life in rats could be 60 hr or more in humans. As such, myrcene would be expected to accumulate in humans, magnifying the drug level and hence its toxic effects. It takes [5 half-lives to reach steady state](#), meaning that even after a single dose, for a 60 hr half-life, this is 12.5 days of continued drug accumulation in the body. With continuous dosing as occurs with inhalation of cannabis emissions, the exposure levels that a person experiences chronically is several times higher than if the drug did not accumulate. **Thus, contrary to the FEIR statement, myrcene is predicted to accumulate in the body potentially for 1-2 weeks or more, subjecting the person to much higher levels especially with continuous dosing than calculated from single daily exposure.** Note that as myrcene accumulation was not factored into the calculations of toxic levels in the Myrcene Report, those projected toxic levels may well occur at several times lower levels of myrcene in the air.

There Are No Human Clinical Data on Myrcene; Safety Must Be Assessed from Animal Studies

7. The FEIR makes other misleading and inaccurate statements. For example (p. 3-13), they state that myrcene has beneficial effects in humans, yet there are no studies in humans. The publication they reference (Surendan et al, ref. 22 in Myrcene Report) only cites small studies done in laboratory cells or laboratory animals, with no human clinical data. The DEIR confirmed there were “no clinical data” in their OEL Monograph.
8. The FEIR response also mentions that Dr. Karen Smith, Interim Health Officer for Sonoma County, reviewed the literature on the potential health effects of beta-myrcene on humans, and reported on August 18 that she found no evidence that b-myrcene from cannabis emissions posed health-risk to neighbors. Although we are not

aware of what literature she reviewed, we concur with that statement concerning no evidence of myrcene toxicity in people as there have been **no studies or publications on safety or toxicity of myrcene in humans**. This was also confirmed by the FEIR consultants, DEIR Appendix C, OEL Monograph section 5 that there are “no clinical data” on myrcene in humans. It is critical to understand that lack of studies in people clearly does not preclude identifying human health risks based on animal toxicity studies, including long-term effects such as cancer that can take decades to develop in humans. **Publications from the National Toxicity Laboratory showed both toxicity and ultimately carcinogenicity (also confirmed by California OEHHA) of myrcene in animals, which is how risk is assessed for humans prior to actual human testing.** NC’s meeting with County Health, they also concurred with our and our consultants’ concerns on toxicity of cannabis emissions including myrcene.

Responsible regulators clearly do not want to see cancer or other diseases developing in people decades after dosing a new drug (eg, thalidomide) or after exposure to [community air pollutants](#), hence the need to determine projected safe human doses based on animal toxicity and carcinogenicity studies prior to human exposure. It is critical that local regulators - who are not scientific experts in this area- be thoroughly educated on these scientific concepts. Such determinations are usually made by experienced scientists in pharmaceutical companies in conjunction with government agencies including the National Toxicology Laboratory and the FDA. Engaging experts in pharmaceutical development as well as public health is critical in educating local regulators. Concerning cannabis emissions, due to the only recent entry of cannabis as a legal industry, local regulators may have been unaware of or discounted such animal safety studies from ignorance and/or economic or political influence. In the current case, unfortunately the cart is now before the horse as the public is already being exposed while toxicity studies have been ignored.

It is critical that Sonoma County not make mistakes that jeopardize public safety by discounting validated animal toxicity studies, by not heeding reports from independent experts and by relying on a fatally-flawed EIR as discussed here and elsewhere in these current comments.

ATTACHMENT 2



CRITIQUE OF FEIR ANALYSIS OF ODOR DETECTION, SETBACKS, AND DISPERSION MODELING IN MASTER RESPONSE 1

September 15, 2025

EXECUTIVE SUMMARY

1. The FEIR fails to meet CEQA Guidelines
 - a. It does not protect residents from noxious odors, negative health impacts and the ability to enjoy their property as required (CEQA Appendix G; CCC § 3479)
 - b. It does not respond to many comment letters on odor. In other responses it states that its theoretical models of annual myrcene averaging are superior to the empirical findings presented in the comment letters, contradicting CEQA's mandate that in responding to comments an agency must provide a reasoned analysis supported by factual information (CEQA Guidelines § 15088(c))
 - c. The County has not shown a good faith effort to consider public input, much less modify the EIR as a result.
2. FEIR's Odor Analysis is arbitrary, subjective, inconsistent, uses antiquated technology, provides no data in Sonoma County and ignores health impacts
3. The FEIR's theoretical dispersion models have numerous false assumptions and inaccuracies and are not relevant to cannabis emissions Sonoma County
 - a. Not validated with and conflict with empirical data
 - b. Predict odor is not detectable at 1-acre grow
 - c. Conflict with FEIR's own prior odor data (~100-fold difference)
 - d. False assumptions include extremely low starting myrcene/odor levels
 - e. Annual averaging used is irrelevant: assumes terpenes and thus odor from 3 months is spread equally over 12 months
 - f. They confirm that weather, terrain and stage of plant growth affect odors and dispersion, yet state that modeling these would not change any conclusions!

- g. They state winds blowing to neighbors will only reduce odors (contradicts data)
4. Odor Mitigation and Setbacks-
 - a. Measured odor/myrcene levels dictate minimum 2500 ft from all parcels needed for protection from toxicities and noxious odors (Figure 3-1, Myrcene Report and Health Impacts Critique)
 - b. 600 ft proposed for residential zoning is inadequate to protect from noxious odors, respiratory irritation/asthma, and long-term cancer. For 1-acre grow, this is 9 Odor Units, 180-450 PPB myrcene; more if larger grows
 - c. 100 ft proposed for Ag and RRD: 30 Odor Units (600-1500 PPB myrcene), huge discrimination against low-income residents, Ag workers and people of color. Highly noxious and toxic levels, much more for grows over 1 acre
 - d. Violates a primary program objective of “racial and socio-economic equity”
 - e. Requirements for odor control for indoor grows very vague
 5. Big Loophole with Permanent Hoop Houses- enables several harvests but with no odor filter requirements
 - a. 8-9 months odor impacts from outdoor grows

1. The FEIR does not meet CEQA Guidelines and CCC§ 3479

The FEIR acknowledged that **CEQA Guidelines, Appendix G**, require that residents are to be protected from anything “*injurious to health, including offensive to the senses, ... so as to interfere with the comfortable enjoyment of life or property*”. See definition of nuisance in **CCC § 3479**. Yet other than this stated acknowledgement, they ignore the facts that this requirement is clearly not met when people cannot use their yards or open their windows due to strong cannabis emissions and odors that cause immediate negative health impacts including respiratory distress and asthma, cough, headache, and eye irritation. They also ignore the longer-term health impacts including carcinogenicity.

2. FEIR’s Odor Analysis is arbitrary, subjective, uses antiquated technology, has no data in Sonoma County and ignores health impacts

The FEIR discussed older EIRs (e.g., Yolo County, 2019 and Kern County, 2017) that used a subjective measure of odor. Those EIRs identified odors as far as 2 miles from the outdoor cultivation site. They said odor was dependent on size of the cannabis operation, topography, wind patterns and local climate conditions in order to do accurate modeling, but that was outside the scope of this EIR. Data do exist on distance of odor dispersion for some locations in Sonoma County where site specific details are known (provided to

Permit Sonoma early in EIR process and in comment letters), yet the county and Trinity did not use such data to validate their models. Rather, this FEIR relies on theoretical modeling that does not account for any of those above critical parameters. Furthermore, the FEIR merely states, with no data, that there was no determination that the odor levels present would cause harm to people pursuant to CCC 3479. The FEIR did not respond to data that the NC consultants have provided with scientific analysis of myrcene from cannabis emissions, at levels that will harm people based on equivalent toxic levels in animals and that additionally violate CCC 3479 as they are injurious to health, including offensive to the senses, ... so as to interfere with the comfortable enjoyment of life or property”. These data were validated by independent top level scientific experts.

The FEIR sets an **arbitrary definition of cannabis odor as a nuisance** only if its above a concentration that cannot be detected by a 7-fold dilution(D/T), for 3 consecutive days in a 2-week period. That 3-day limitation itself is arbitrary and illogical- what if an odor is objectionable for 2 out of every 3 days, but not for 3 consecutive days, or for 3 days every 2 weeks but again not for 3 consecutive days? This 7:1 limit was not developed for cannabis odors, has not been validated and does not take into account toxic effects of compounds such as myrcene. It rather relies on work published in 1960 and 2000 for other types of odors, long before commercial cannabis was legalized in California. This 7:1 dilution equates to ~140-350 PPB myrcene¹- levels that are known to be highly objectionable and also well above the toxic range (2024 Myrcene Report). Furthermore, non-quantitative measurement with the outdated Nasal Ranger that relies on subjective human nose detection is subject to nasal receptor fatigue, is not done in real-time when the odors are reported, and has been shown to be unreliable in the field (Dr. Kram October 15, 2024 letter to Coalition for Responsible Cannabis, Santa Barbara County, and information from manufacturer of the Nasal Range concerning field use vs lab setting.)

The FEIR acknowledges that cannabis odors have a unique profile and threshold of detection that skews analysis using subjective odor units. The FEIR states that what odor level is objectionable is subjective and may also depend on whether a person likes cannabis or not. That last statement shows clear bias. However, odor levels that cause immediate toxicities such as respiratory and eye irritation, cough, headache, nausea, and aggravate asthma are not subjective, nor are toxin levels that jeopardize long-term health. **Quantitating toxin levels such as myrcene in cannabis odors is not subjective and can be set as a defined threshold standard to protect health (Myrcene Report).**

The FEIR does not even attempt to provide any scientific data to refute the detailed data presented by the NC and its consultants on the toxic effects of cannabis emissions (including odors). The FEIR merely reiterates that their consultants are more reliable, and that a safe level for a 154-pound (70 kg) worker exposed 8 hr/day, 5 days/week is more than adequate to ensure safe community levels for children, babies, developing fetuses, the

infirm and the elderly. As discussed under the NC Critique of the FEIR's Master Response 1 Concerning Health Impacts, the NC and their consultants have provided scientific data employing methods validated and employed by the pharmaceutical industry and the FDA in determining safety levels for new drugs that contradict the FEIR's safe exposure levels (numerous comment letters). The FEIR fails to respond or explain why these data can be ignored.

Figure 3-1 (p3-11) from Trinity's 2020 odor analysis for Yolo County, which is included by Trinity as the odor analysis for this FEIR, shows that odor dispersion from a 1-acre outdoor cannabis cultivation (apparently incorrectly labeled as from a 0.5 acre facility) are generally consistent with distance odor travels reported by residents from a 1-acre grow in Bennett Valley (numerous comment letters) **but are orders of magnitude higher than the odor levels obtained from their current myrcene dispersion models.**

Data from Trinity Figure 3-1 in Odor Units and Equivalent PPB Myrcene Compared to New Trinity Myrcene Dispersion Models

Distance from 1-acre grow	Odor Units	Equivalent Myrcene¹	Myrcene in New Trinity Models
0	40 OU	800-2000 PPB	16 PPB
100 ft	30 OU	600-1500 PPB	12 PPB
600 ft	9 OU	180-450 PPB	3.6 PPB
1000 ft	5 OU	100-250 PPB	2 PPB
2500 ft	2.5 OU	50-125 PPB	1 PPB

Their Figure 3-1 shows 40 Odor Units at the edge of the field and 30 Odor Units at 100 ft. This is a 25% odor reduction at 100 ft, **contradicting their statement (p3-11) that a 50% reduction in odor occurs at 100 ft.** The levels at 100 ft of 30 OU or **600-1500 PPB myrcene at 100 ft** are in extremely noxious and toxic levels- yet this is what the FEIR proposes as setbacks for all Ag and RRD zoned parcels, and not just from 1 acre grows, but from all size of grows; **a 10-acre grow would produce many times these levels.**

As summarized in the above table and discussed under point 3 below, the myrcene levels Trinity report from their current air dispersion models are 50-125 fold lower than calculated from their Figure 3-1, the only graph they provide on odor dispersion analysis. **This 50-125-fold discrepancy shows the uselessness of their theoretical models.**

Figure 3-1 also shows why a minimum setback of 2500 from 1-acre outdoor grows is needed, more for larger grows. The FEIR responses to comment letter state that a parcel of at least 150 acres would needed for such large setbacks, and that such parcels would be remote and not suitable for cannabis cultivation. Although there are many large parcels in

Sonoma County, terminating outdoor cannabis cultivation in Sonoma County would be the best solution.

Odor control for structures

The FEIR mentions that odor control can be implemented for enclosed structures, but again includes outdated technology in its list of such options, including listing odor masking (p3-10). Odor masking such as EcoSorb does not remove the terpenes and in fact likely adds terpenes including myrcene and has resulted in so many additional odor complaints in Santa Barbara County that the Supervisors have banned its use in their 2025 updated ordinance. The **only reliable method of odor control for indoor cultivation and processing uses carbon filters, and quantitative monitoring needs to be used** to confirm that the filters are removing all terpenes from the air leaving the facility. Yet the proposed revised Cannabis Ordinance (section 26-18-115 C1a) only states that a filtration and ventilation system must be used for structures containing cannabis compounds, does not specify carbon filters, has no quantitative monitoring requirement and excludes all hoop houses from odor control requirements, even those now defined as permanent structures with electricity.

3. The FEIR theoretical models have numerous false assumptions and conflict with empirical data as well as their own prior data.

Their theoretical myrcene dispersion **models also conflict with empirical measurements as well as odor reports from neighbors** (many comment letters). Their models for myrcene show that odors would be at undetectable levels 100 ft from a 1 acre grow and only marginally detectable 100 ft from a 10 acre grow (using 20-50 PPB as the level at which 50% of people can smell cannabis odor, Kram Report¹), yet they then state “odor impacts are identified as significant and unavoidable” (DEIR 3.3-4; FEIR 3-9). We agree that odor impacts will be significant but disagree with their models. Using the myrcene emission rates they listed in the DEIR (Appendix C), we calculated myrcene concentrations at the edge of the grow **orders of magnitude higher than what they stated**. They did not address this huge discrepancy nor show how they arrived at their starting, very low myrcene levels. Why didn’t they use the figures listed in Figure 3-1 showing 40 odor units at the edge of a 1-acre field, which equates to 800-2000 PPB myrcene?

As shown in the table under point 2 above, a significant discrepancy and error is that the graph (Figure 3-1) from the **2020 Yolo EIR analysis by Trinity** showed **~50-125 times higher odor levels than presented from their “theoretical modeling” in this DEIR/FEIR**. This highlights major errors in the theoretical modeling data presented in the DEIR/FEIR.

Data presented in the report by **Dr. Mark Kram detailed scientifically-quantitated myrcene levels at varying distances from actual outdoor cultivation sites**, including a level of 440 PPB at 2600 ft from a 4 acre grow (Table 1, p3-197), vs the 6.6 PPB (1 acre grow)

and 49 PPB (10 acre grow) at 600 ft calculated in the Trinity theoretical model. This further demonstrates the inaccuracy of the “theoretical” myrcene dispersion model presented by this DEIR/FEIR. Conclusions should be made from actual measurements from real outdoor cultivation fields, not hypothetical modeling.

The FEIR reiterates on P 3-196 in their Response 018-45 “The distance for odor detection is very site-specific and can be affected by many variables, including meteorology, topography, and plant stages of plant growth.” They acknowledge that odors can accumulate in low areas or with temperature inversions or wind patterns as often exist in Sonoma County (p3-9) but then contend such an analysis was “outside the scope” of this EIR, and they go on to state that furthermore that such hypothetical modeling would not change any conclusions! **This statement further discredits use of their theoretical modeling to determine distance cannabis odors travel in Sonoma County.**

Dr. Kram’s report provided scientific empirical measurements that directly contradict the extremely low myrcene levels predicted by the FEIRs theoretical models. Dr. Kram has previously confirmed that odor detection from cannabis grows correlates with the 20-50 PPB myrcene levels at which 50% of people can detect the odor (see Dr. Kram’s report).

The FEIR consultants CVs indicate they have used those theoretical models for other (non-cannabis) assignments. They are unwilling to analyze their inapplicability here vs real data. They also stress that they use annual averaging. Perhaps they chose this method due to their familiarity with annual averaging for certain workplace chemicals that they have evaluated in the past for which total annual exposure is more relevant than daily exposure levels. But that is clearly not the case here where specific odor and myrcene levels cause toxicities (addressed in detail in our Myrcene Report).

Annual averaging is clearly illogical when analyzing odor and toxin impacts attributed to a growth/harvest cycle that occurs over a 3-4 month period. For example, if daily odor exposure is at level 100 PPB for 90 days, a level that is highly noxious, averaging this over 365 days gives a calculated daily exposure of only 25 PPB, a level that is barely detectable by 50% of people. This theoretical calculation is provided to illustrate why their method of annual averaging is totally inappropriate for analyzing cannabis emissions, both for odor as well as toxins. Also, when there is more than one harvest a year, the myrcene levels would be proportionately increased, and when using a permanent hoop house with electricity, growth/harvest could approach year-round. The models did not take this into account.

An example of how erroneous their theoretical models are, they say that one would not even smell odor at the edge a 1 acre grow. That is ludicrous, as noxious odors are very apparent even 400 ft from a 5000 sf (1/8 acre) grow (confirmed multiple times in Sonoma County). Furthermore, their current FEIR models show 50-125-fold lower levels than what

they provided in Figure 3-1. They refuse to address that quantitative measurements plus the many reports from neighbors refute the validity of their models.

To summarize, the FEIR consultants **fail to acknowledge or understand that, if a theoretical model that has not been validated by empirical measurements provides predictions that strongly contradict actual measurements, then the model is wrong.**

Their myrcene modeling results need to be discarded.

4. Odor Mitigation and Setbacks

One of the primary program objectives (DEIR, ES-2) is stated as:

“Consider the protection of public health and safety and racial and socio-economic equity when implementing the above objectives.”

Setbacks from outdoor cultivation sites are a key measure needed to meet the above objective.

Their odor dispersion Figure 3-1 for a 1-acre grow shows 30 Odor Units or 600-1500 PPB myrcene at 100 ft. **600-1500 PPB myrcene at 100 ft** is at extremely noxious and toxic levels- yet this is what the FEIR proposes as setbacks for all Ag and RRD zoned parcels, and not just from 1 acre grows, but from all size of grows; a 10-acre grow would produce many times these levels.

The empirical data presented in many comment and expert letters herein (eg, Dr. Kram’s report) dictate that much longer setbacks are needed than those recommended by the county. In light of the confirmed long distance that cannabis terpenes and odor travel as stated in the FEIR, as documented in Figure 3-1, the Kram report and in numerous comment letters including documentation with odor distance charts, to protect neighbors from these toxins and noxious odors, **setbacks are needed of at least 2500 ft from a 1 acre grow.** Even Figure 3-1 shows that at 2500 ft, 2.5 odor units or 50-125 PPB myrcene remain. And from a 10 acre grow, these levels would all be much higher.

This setback must be from all parcels (not just from schools and residential zoned parcels) to avoid cannabis emissions that are “injurious to health, including offensive to the senses, ... so as to interfere with the comfortable enjoyment of life or property” as required under Appendix G and CCC 3479. Further, the county is proposing tiered setbacks, with 600 ft setbacks (still insufficient) for residential zoning, but only 100 ft setbacks for non-residential zoning. **This is clear discrimination against lower income residents, Ag workers and their families and people of color in Sonoma County, including children.** It is in direct violation of a primary program objective of “racial and socio-economic equity”.

The FEIR continues to propose setbacks of 1000 ft for “sensitive receptors” of children in schools yet is completely inconsistent in then only proposing 100 ft setbacks (or 600 ft if in residential zoning) for people including children when they are in their homes, where children spend most of their time. The FEIR has never responded to comments addressing this inconsistency. As noted above, 1000 ft setbacks are still insufficient to protect children and all people from the toxicities of cannabis emissions.

The FEIR does not adequately respond to the huge conflict between actual measurements of myrcene and detection of odor in many comment letters (e.g., Mark Kram report and others) vs their theoretical models. Rather, the FEIR discounts the empirical data saying a snapshot in time is less accurate than averaging over a full year. Yet their data are purely theoretical, generated from an air dispersion model that they even confirm does not account for the actual parameters important in Sonoma County and that uses an extremely low, fictitious starting concentration of myrcene for the 1-acre and 10-acre hypothetical grows that is far lower than calculated from the myrcene emission data from their reference. They then average projections from the flowering/harvest period (~90 days) over 365 days, further artificially reducing daily-projected myrcene concentrations. However, they state that their theoretical myrcene dispersion models are not for analyzing odor despite the direct correlation between myrcene levels and odor (Kram report). If so, then the only measured data they provide on direct odor and associated myrcene dispersion is their 2020 graph (Figure 3-1, p3-11) that shows 50-125-fold higher myrcene levels than calculated from their myrcene dispersion models. They tried to discredit the Kram report by saying the data were not verifiable (Response 018-49, p3-202). That statement is simply wrong: the Kram report data were documented with quantitative measurements. In contrast, the FEIR myrcene dispersion data are merely hypothetical and their odor data were subjective. The major errors pointed out above contradict their conclusion that their analysis is “accurate, adequate and complete for the purposes of disclosure under CEQA.”

Contrary to their statement, the DEIR/FEIR does not meet the requirements of CEQA guidelines including Appendix G. **Drawing major policy conclusions based only on theoretical models that are not validated with measurements and that grossly conflict with real-time quantitative data as well as conflict with their own consultants’ prior data that was included herein, provides ample reasons why this FEIR should not be certified,** in addition to the many other major and fatal flaws through this FEIR.

Alternative 2, limiting cultivation to only indoor, if carbon filters are used to remove terpenes and odors and quantitative monitoring is used to confirm full removal of cannabis emissions, would avoid such “significant and unavoidable” odor impacts. **The County Supervisors could choose to proceed with a ban on outdoor cultivation without certifying this very faulty EIR.**

5. Permanent Hoop House: Loophole Extends Impacts from Outdoor Cultivation

If outdoor cultivation is allowed, the draft cannabis ordinance now proposes to include **Permanent Hoop Houses with electricity** that will allow **multiple harvests/year**, with **no odor filter requirements**, thus allowing cannabis emissions including toxins and noxious odors to trespass on neighboring parcels approaching year-round. This extension of the growing season allowing multiple harvests significantly **magnifies the negative impacts from outdoor cultivation from 3 months to approaching year-round**. As noted above with the proposed setbacks, this will disproportionately impact people of low income, Ag workers and people of color, including children.

¹ One Odor Unit is defined as the level detected by 50% of people = 20-50 PPB myrcene (Kram report). Thus a 7:1 dilution to these minimally-detectable levels equates to the range of 140-350 PPB myrcene. 40 Odor Units as shown in Figure 3-1 equate to 800-2000 PPB myrcene.