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March 17, 2021

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STATE CLEARINGHOUSE

Sonoma County Planning Commission
c/o McCall Miller
575 Administration Drive, Suite 104A
Santa Rosa, CA 95403
cannabis@sonoma-county.org

Subject: Sonoma County Cannabis Land Use Ordinance Update and General Plan Amendment, Subsequent Mitigated Negated Declaration, SCH No. 2021020259, Sonoma County, California

Dear McCall Miller:

The California Department of Fish and Wildlife (CDFW) received a draft Subsequent Mitigated Negative Declaration (MND) from the County of Sonoma (County) for the Sonoma County Cannabis Land Use Ordinance Update and General Plan Amendment (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.

CDFW is submitting comments on the MND to inform the County, as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project. CDFW is providing these comments and recommendations regarding those activities involved in the Project that are within CDFW's area of expertise and relevant to its statutory responsibilities (Fish and Game Code, § 1802), and/or which are required to be approved by CDFW (CEQA Guidelines, §§ 15086, 15096 and 15204).

REGULATORY ROLES

CDFW is a Trustee Agency with responsibility under CEQA (Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Lake and Streambed Alteration (LSA) Program, and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under CESA (Fish and Game Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish and Game Code §1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

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California Department of Food and Agriculture (CDFA) regulates cannabis cultivation and issues licenses to cultivate. In order to obtain an Annual License to cultivate cannabis, applicants must demonstrate compliance with Fish and Game Code 1602. Additionally, according to the *CDFA Reference Guide for the Applicant Attachments*¹, applicants must demonstrate full compliance with CEQA by conducting project-specific review. The County should ensure that the Cannabis MND appropriately evaluates and covers ministerial cultivation sites to adequately meet CDFA licensing requirements.

Sonoma County Cannabis Ordinance Description

The County proposes to adopt amendments to the County Code, Chapter 26 and new Chapter 38, to allow expanded ministerial permitting for commercial cannabis cultivation in agricultural and resource zoned areas. The County also proposes a general plan amendment to include cannabis within the definition of agriculture. This proposal would expand ministerial permitting of commercial cannabis cultivation in agricultural and resource zoned areas of the unincorporated county (Land Intensive Agriculture (LIA), Land Extensive Agriculture (LEA), Diverse Agriculture (DA), and Resources and Rural Development (RRD) Zoning Districts). It would not include the coastal zone.

Environmental Impacts of Cannabis Cultivation: Introduction

CDFW supports efforts to regulate cannabis cultivation and to address some of its numerous and substantial environmental impacts. CDFW believes that, in concept, providing a ministerial pathway for projects that are unlikely to adversely impact public trust resources will be beneficial to a) avoid and discourage development in sensitive habitats and b) support the legal market. However, Sonoma County has a high density of sensitive species and essential habitat areas. Projects with the potential to impact those areas should have greater regulatory oversight. There are multiple sources available that provide sufficient information for the County to designate areas that should not be considered under the ministerial process and should be required to conduct additional assessments to address sensitive resources and to minimize the environmental impacts of cannabis cultivation. These projects will also likely require additional review and oversight that will allow them to confidently move forward with licensing under the CDFA and compliance with Fish and Game Code, section 1602. As such, CDFW is providing comments on specific species and habitats that should be excluded from the ministerial process unless sufficient information is provided to assure that all impacts to sensitive resources can be avoided. Otherwise, projects should be evaluated on a case-by-case basis in coordination with trustee agencies to develop project specific avoidance and mitigation measures.

¹ <https://www.cdfa.ca.gov/cal cannabis/documents/ApplicationAttachmentsReferenceGuide.pdf>

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CDFW devotes a considerable amount of staff time and resources documenting, assessing, permitting, and addressing the environmental impacts and watershed restoration needs resulting from cannabis cultivation (Bauer et al. 2015). CDFW was one of the first agencies in the State to draw attention to the near exponential growth and substantial adverse impacts of cannabis cultivation on forest lands, including impacts from water diversions and stream dewatering, forest clearing and conversion, pollution, and sediment discharges. CDFW staff have conducted inspections on hundreds of cannabis cultivation sites throughout northern California, including Sonoma County, and have published peer-reviewed research on this topic. Therefore, CDFW has considerable experience in assessing the environmental impacts of cannabis cultivation.

Impacts of specific concern to CDFW include, but are not limited to: habitat fragmentation and loss through land clearing, including direct impacts to riparian areas, wetlands, and sensitive natural communities²; grading and burying of streams; diversion of surface water for irrigation resulting in reduced stream flows and dewatered streams; delivery of sediment, nutrients, petroleum products, and pesticides into streams; impacts of night lighting and noise on wildlife; impacts to wildlife from use of plastic monofilament netting and similar products; and pollution to the environment from trash and other cultivation related waste.

COMMENTS AND RECOMMENDATIONS

CDFW offers the below comments and recommendations to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources, including:

Comment 1: Land Use Planning

Issue: The proposed Ordinance update proposes that canopy cover for outdoor cannabis cultivation and hoop houses may be up to a maximum of 10 percent of a parcel. Currently, sites allow a maximum canopy cover of one-acre cannabis cultivation. The proposed changes allow for the potential of substantial cannabis cultivation expansion on parcels, especially in rural agricultural areas with large parcel sizes. Expanded cultivation areas increases the potential for species and habitat impacts. Ministerial review may not adequately account for all impacts and may potentially allow projects to proceed without appropriate disclosure and avoidance, minimization and mitigation requirements. Therefore, it is critical to evaluate landscape level impact potential throughout Sonoma County, taking into consideration current and future conservation planning efforts.

² <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background>

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Recommendations: The County should limit cultivation on parcels with the potential to support special-status species and their habitat. The Ordinance should establish a current baseline of permitted cannabis cultivation areas and project where new cannabis cultivation expansion may occur on a map. Geo-spatial analysis should be used at an individual property parcel scale, to exclude ministerial approval of cannabis cultivation within areas with habitat to support special-status species and where special-status species occurrences are documented within the California Natural Diversity Database (CNDDDB). Exclusion area boundaries should be mapped at a parcel scale. In addition, species-specific protective buffer distances should be developed as part of the Project MND to limit activities that can occur adjacent to mapped exclusion areas.

CDFW understands the County is currently within the planning phase of a landscape level Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) planning effort. Landscape conservation planning takes a proactive approach, identifying priority mitigation and conservation areas in advance of impacts, with the goal of preserving larger areas of higher habitat quality and connectivity (CDFW 2021). The ordinance should adequately review, address, and propose mitigation for Project areas potentially impacting special status species and their habitat in order to facilitate HCP/NCCP planning efforts.

CDFW recognizes the Sonoma County Agricultural and Open Space District (Sonoma County AOSD) has completed a considerable conservation analysis and planning effort in its 2021 Vital Lands Initiative. The Initiative identifies spatially mapped areas of conservation priorities which includes but is not limited to, riparian habitat, wetlands, conifer forests, grasslands, shrublands, hardwood forests, and wildlife habitat for movement (connectivity). Those areas with highest conservation priority can be reasonably expected to have high value of fish and wildlife resources. Cannabis cultivation within those areas of highest conservation priority likely have the greatest potential for significant effects to the environment and fish and wildlife. CDFW encourages the County to incorporate conservation planning efforts by the Sonoma County AOSD into its ordinance to the greatest extent feasible. For proposed cannabis cultivation within areas of highest conservation priority identified by the Sonoma County AOSD, CDFW recommends separate Use Permit and individual CEQA analysis. Alternatively, CDFW supports cultivation prohibition in those areas.

Comment 2: Sec. 38.12.140. Water Use

Issue: CDFW is concerned about the impact of groundwater diversions and their potential to deplete surface water (e.g., rivers and streams) and affect groundwater dependent ecosystems.

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According to the MND, if a well is within 500 feet of a blue line stream, the applicant must document one of three things:

1) Prepare a “net zero water plan”, 2) Document the well is within 500 feet of the Russian River or Dry Creek, or 3) Document the well is within the Groundwater Availability Zone 1 or 2.

The third option implies that significant streamflow depletion is unlikely to occur in Groundwater Availability Zones 1 or 2. However, streamflow depletion can occur within any of the groundwater zones in Sonoma County and is dependent on several hydrogeological factors, including but not limited to: well distance from streams; pumping rate and duration; and soil texture and structure. Therefore, the proposed standards inadequately address the hydrological impacts of groundwater pumping.

Evidence of Impacts: Many Sonoma County tributaries have historically provided sustained perennial flow which supports spring, summer, and fall rearing habitat for naturally producing California freshwater shrimp (*Syncaris pacifica*), Central California Coast coho salmon (*Oncorhynchus kisutch*), California Coastal Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*Oncorhynchus mykiss*) and other aquatic species. CDFW is concerned available habitat for these species is limited by lack of flow, especially during the summer and early fall periods. The grow season for cannabis cultivation includes summer months (CDFW 2018) during times when stream flows are generally at their lowest (SWRCB 2010). Most Sonoma County fish-bearing tributaries are already subject to large numbers of diversions that are cumulatively affecting the amount of water available for instream habitat. The exact number, location and extent of diversions are unknown. However, in many watersheds, parcels that do not have access to municipal water sources often extract water from the stream either; through direct diversion from the stream or from near stream wells that intercept subterranean stream flow; or from groundwater wells. Groundwater extraction has the potential to impact groundwater dependent resources and reduce streamflow, especially during the late spring and summer months which is a critical time period for the state federally endangered coho salmon and federally threatened steelhead.

The U.S. Geological Survey, in cooperation with the Sonoma County Water Agency, the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, the Town of Windsor, the California American Water Company, and the County of Sonoma, undertook development of a fully coupled groundwater and surface-water model to better understand and to help manage the hydrologic resources in the Santa Rosa Plain watershed (Woolfenden and Nishikawa, 2014). According to modeled result from that report, “increased pumping lowered groundwater levels, causing increased recharge and reduced groundwater evapotranspiration along stream channels, which partially

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mitigated the loss of groundwater storage, but the lower groundwater levels resulted in decreased baseflow, especially during late spring and summer.”

Recommendations: CDFW recommends the County assess the aquatic carrying capacity of watersheds to support cannabis cultivation and propose a limit on density or number of cultivation sites. The focus of the assessment should be to determine the maximum water use availability from watersheds that maintains adequate water supply for fish and wildlife species, considering the cumulative impact of existing and future legal and illegal diversions. Prior to issuing permits for new cultivation sites, the County should prepare the assessment at a watershed scale describing a) existing water use and availability, b) potential for sediment and other pollutant discharge, and c) percentage of habitat fragmentation within a given watershed. Hemp should be incorporated into this analysis since it requires essentially the same cultivation techniques and water use. From CDFW’s perspective, activities causing the same or similar environmental impacts should be reviewed and analyzed with the same rigor. Identified impacts due to hemp cultivation should be avoided, minimized, and/or mitigated. In addition, the analysis should provide detail on the amount of cannabis and hemp cultivation the County proposes to permit within each watershed (e.g., HUC 12 or smaller watershed area), and what impacts the allowed cultivation would have on each of these elements. In order to avoid a concentration of cannabis and hemp cultivation sites in a particular watershed, which could result in potential significant effects, CDFW recommends that prior to issuing permits for new cultivation, the County defines a watershed cap based on an analysis of the impacts to each watershed as described above. Without a defined cap on the number of cultivation sites, analysis of environmental impacts should assume that all parcels meeting zoning criteria could be used for cannabis cultivation. For all cultivation sites, disclosure of the amount of water to be used from each water source, and a current, site-specific analysis of water availability should be required, and the County should reserve the discretion to modify permit conditions. Please note that possession of an active appropriative water right does not guarantee that an adequate water supply is available to support fish and wildlife resources.

Surface water diversions (including subterranean stream flow) are subject to notification under Fish and Game Code 1602. The Ordinance should require projects with surface diversions to comply with 1602 and notify CDFW for all surface diversion activities.

Additionally, CDFW proposes that all near-stream wells (within 500 feet) be evaluated by a qualified professional such as a hydrologist to determine the relationship of surface water interaction and potential for subterranean stream diversion or streamflow depletion. Wells should be evaluated under the CEQA review process to determine their potential for stream water depletion that may adversely affect fish and aquatic life.

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For consistency with the California State Water Resources Control Board (SWRCB) *Cannabis Cultivation Policy – Principals and Guidelines for Cannabis Cultivation*, the Sonoma Ordinance should require a forbearance period from surface diversions and wells in subterranean streams. The intent of forbearance and storage is to require for water to be diverted during the wintertime when water is more abundant so that this stored water can be used in the summertime to meet irrigation demands.

Issue 2: According to page 95 of the Ordinance, cultivators are required to demonstrate adequate water, but the term is not defined.

Recommendation: CDFW recommends outlining the following requirements in the Ordinance for cultivators to demonstrate adequate water supply on their Project site:

- For surface water and sub-stream flow diversions, sufficient off-stream water storage should be demonstrated prior to receiving a County cultivation permit in order to allow full compliance with the SWRCB forbearance periods. To determine the necessary storage, cultivators should be required to calculate how much water is required for each year of cultivation with consideration to expansion over time. In addition, CDFW encourages use of metal or wood water tanks.
- For well diversions, demonstrating adequate water should include technical analysis prepared by a qualified professional showing diversion from the well is limited to ground water only.

Comment 3: California tiger salamander (*Ambystoma californiense*; CTS) Habitat Exclusion from Ministerial Process

Issue: The present range of the Sonoma Distinct Population Segment (DPS) of CTS is predominantly located on the Santa Rosa Plain but according to CNDDDB, the present range also include areas outside of Petaluma, Penngrove and Cotati. The draft MND considers cannabis cultivation projects in agricultural zones for the ministerial process unless a Biotic Resources Assessment states otherwise. However, based on the species life history, the Santa Rosa Plain has an enhanced potential for CTS presence and, therefore, should not be considered eligible for the ministerial process.

Evidence of Impacts: CTS is endemic to Central California, with isolated populations in Sonoma and Santa Barbara counties (Bolster 2010, USFWS 2014). CTS relies on seasonal wetlands or freshwater ponds for successful reproduction and adjacent or accessible terrestrial habitat for migration and aestivation, making the quality of both aquatic and terrestrial habitat essential for CTS survival (Bolster 2010). Upland habitats must contain underground refugia, such as mammal burrows, that CTS depend upon for food, shelter, and protection (Laredo et al. 1996). Threats to CTS include habitat

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loss/conversion and fragmentation, including dispersal habitat between breeding pools and upland refugia. CTS spend the majority of their lifecycle underground (Trenham et al. 2000) and are susceptible to being crushed during ground disturbance. CTS is also threatened by competition with and predation from invasive species (USFWS 2017). Introduced species such as bullfrogs and sunfishes have had a negative effect on CTS (Bolster 2010). Larval populations undergo large fluctuations, with most populations containing less than 100 breeding pairs (Pechmann et al. 1991, Bolster 2010). Fluctuating *Ambystoma* populations were found to be susceptible to recruitment failure during stochastic events (Pechmann et al. 1991).

Over the past 25 years, land development has increased dramatically within the Santa Rosa Plain, including low- and high-density land use and agricultural conversion (USFWS 2016). The current core range of Sonoma County CTS encompasses approximately 18,000-20,000 acres of fragmented habitat. The species can migrate up to 1.3 miles between a breeding pond and upland burrows (Orloff 2011). CTS spend approximately 95 percent of their lifetime in underground burrows, emphasizing the importance of protecting potential upland habitat in addition to wetland breeding ponds (Trenham 2001).

Pesticides and fertilizers used in cannabis cultivation could decrease fitness or survival of, or cause abnormalities in, *Ambystoma* species, mostly at the larval stage if contaminants drift into breeding pools (Egea-Serrano et al. 2012). Ponds and vernal pools can quickly accumulate these types of pollutants from run-off, making CTS particularly sensitive to pesticide exposure. Concentrated toxins in rodenticide-treated grain placed in ground squirrel burrows could come into direct contact with the permeable skin of CTS (Bolster 2010). Rodenticides that control small mammal populations would also reduce available burrows, making the habitat no longer suitable for CTS (Laredo et al. 1996). Lack of underground refugia could cause longer migration trips and resulting mortality of CTS as a result of exposure to predators, heat, and other elements (Laredo et al. 1996).

Construction or modification of perennial ponds has been shown to provide breeding habitat for invasive bullfrogs that prey on and compete with sensitive amphibians (Kiesecker et al. 2001, Bolster et al. 2011, Fuller et al. 2011 Kupferberg and Fury 2015). Perennial ponds can also provide suitable habitat for non-native tiger salamander and hybrids.

Grading and filling of habitat can result in crushing CTS, collapsing underground burrows and trapping CTS within, and reducing or fragmenting breeding or non-breeding habitat.

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Roads can result in amphibian mortality and fragment habitat as well as create barriers to movement (Trombulak and Frissell 2000). Off-road vehicles can crush and reduce burrow density and alter wetland habitat.

Artificial lighting can disrupt the production of melatonin in *Ambystoma* salamanders if they are exposed to it, altering metabolic rates and reducing tolerance to high temperatures (Perry et al. 2008). Additionally, *Ambystoma* salamanders could miss the cue to migrate if there is artificial light, which could affect breeding.

Recommendations: Please be advised that actions related to cannabis cultivation activities, including but not limited to, site grading, relocation of individuals out of harm's way, and installation of fencing could result in "take" of CTS (or other listed species). A CESA Incidental Take Permit (ITP) (pursuant to Fish and Game Code Section 2080 et seq.) is required in advance of such activities in order to lawfully take this species. A CESA ITP requires CEQA documentation and the proposed MND does not adequately address impacts to CTS or provide for mitigation to reduce the impact to less-than-significant and therefore, CDFW would be unable to rely on the MND to issue an ITP. CDFW recommends excluding any project within the Santa Rosa Plain and within 1.3 miles of an extant positive occurrence of CTS from the ministerial process. New or expanded cannabis cultivation within the Santa Rosa Plain should be thoroughly assessed through a separate Use Permit and individual CEQA analysis. Additionally, sites outside of the Santa Rosa Plain with the potential for CTS occurrence (e.g., rural Southwest Petaluma, and areas east of Penngrove and Cotati) should be delineated and excluded from the ministerial process.

Due to the presence of contiguous suitable habitat features and migration potential throughout the Santa Rosa Plain, it is vital to protect this habitat to allow for recovery of the species. This should be accomplished by ensuring adequate avoidance, minimization, and mitigation measures are required through individual CEQA review and document preparation. Site analyses should take into consideration species life stage history, proximity to critically designated habitat, and potential habitat availability on each Project site. Project activities evaluated to have any risk of CTS occurrence should apply for take coverage through the applicable state and federal agencies.

Comment 4: Sec. 38.12.070 Protection of Biotic Resources

The following describes the proposed MND language when evaluating Biotic Resource impacts:

"If the cannabis cultivation area and related structures and development are located within a designated critical habitat area, then one of the following criteria must be met:

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- a. *The biotic assessment concludes that “take” of a listed species within the meaning of the federal and California Endangered Species Acts is not reasonably foreseeable; or*
- b. *Applicant obtains all appropriate permits from the applicable state and federal agencies with jurisdiction over the listed species.”*

Issues: The Ordinance states that projects located within “the limits of existing agricultural land, or other previously disturbed areas would be unlikely to affect sensitive biological resources.” However, the concept of “previously developed” within an agricultural use perspective is not defined. Some agricultural land uses provide species habitat and/or allow for species migration.

Additionally, the proposed process does not incorporate CDFW when reviewing the Biotic Resources assessment in determining whether there are potential species impacts on a site. CDFW is concerned with not being included in the review process to provide feedback and/or comments on the Biotic Resources Assessments prior to determining if a project may impact sensitive or special-status species.

Projects requiring off-site habitat restoration and/or mitigation are ineligible for CEQA exemption and must be addressed in an environmental review document. CDFW has limited staffing and resources to act as the lead agency in these situations, therefore it is important that the County identifies projects potentially requiring off-site mitigation and/or restoration and removes these from the ministerial process.

Evidence of Impacts: Row crops, orchards, and vineyards can provide some level of habitat by fish and wildlife resources, including acting as species migratory corridors. As an example, CDFW is aware of a least one instance of CTS pit fall traps that collected adult CTS at the edge of a vineyard. This suggests that CTS migrate through and may use vineyard soil for estivation habitat if suitable burrows are present. Converting vineyards, or other agricultural use, may potentially create migration barriers or have direct impacts to CTS. CDFW regularly observes fencing, grading and fill to native soils, hardscaped and graveled pads, imported soils potentially containing pathogens and extensive infrastructure during inspections to cannabis cultivation sites. CDFW has significant experience participating in and leading survey efforts for the purpose of studying species habitat use. This has enhanced CDFW’s understanding of species habitat utilization throughout the state, including landscape throughout Sonoma County.

Recommendations: The County should clearly outline the definition of “previously developed” in the Ordinance. Additionally, the County should thoroughly consider and review all potential biological impacts on a site, even if it is fully within previously developed agricultural land. Biological Resources Assessments should consider

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impacts to existing land uses from changes in site conditions when evaluating whether there is habitat potential on a site.

CDFW would like the opportunity to review existing and proposed cultivation sites for potential impacts to sensitive natural resources. To assist in ensuring effective, efficient and timely review, applicants should initiate the permitting process with the County, and the County should refer projects to CDFW, similar to existing procedures for other project referrals. By applying to the County first, applicants would be provided with a permit tracking number to reference, and contacts with CDFW could be handled more efficiently with a complete application. Therefore, the Ordinance should be revised to reflect that applications and Biotic Resource Assessments will be referred to CDFW after submission to the County. The Biotic Resource Assessment should evaluate all species habitat potential, including Species of Special Concern. Sites with potential to impact special-status species, including Species of Special Concern, should not qualify for ministerial review and should apply for a Use Permit.

In such cases where take of a special-status species is determined to be likely, early consultation with CDFW is encouraged because significant modification to a subsequent project activity and mitigation measures, and an additional CEQA environmental document, may be required. Additionally, take of species listed under the Federal Endangered Species Act would require a separate authorization from the USFWS and/or National Marine Fisheries Service.

Comment 5: Riparian/Wetlands Setbacks

Issue: The Cannabis Ordinance references following riparian and wetland buffer requirements in Sonoma County Code: Section 36-16-120 of Chapter 36, Section 11-14-110 of Chapter 11, and Section 26-65-040. These setbacks are not consistent with state requirements (e.g., SWRCB's *Cannabis Cultivation Policy – Principals and Guidelines for Cannabis Cultivation*³). For instance, Section 26-65-040 has a minimum standard of a 25-foot setback to riparian areas. The SWRCB Cannabis Policy has a standard of 50-foot minimum buffer for ephemeral watercourses.

Given the unknown variability of site-specific cannabis activities, CDFW is concerned that the proposed setbacks may not be enough to conclude no adverse effects on any special-status fish. The setbacks may not adequately prevent deleterious materials, including wastewater discharge and other pollutants, from entering wetlands and/or streams. Undesignated wetlands, as discussed above, are defined as “any wetlands not designated in the general plan, local coastal program or zoning code”. Requirements for wetland setbacks should be held to the same rigorous standard for all wetlands,

³ https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

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including vernal pools, regardless of whether they are defined in the general plan, local coastal plan, or zoning code.

Evidence of Impacts: Wastewater discharge and runoff from cannabis activities, especially water containing pesticides, disinfectants, and/or fertilizers, may enter and alter existing streams or their function and associated riparian habitat on the Project site. Wetlands that are hydrologically connected to surface water may transport pollutants and waste material associated with cannabis cultivation.

Riparian buffers help keep pollutants from entering adjacent waters through a combination of processes including dilution, sequestration by plants and microbes, biodegradation, chemical degradation, volatilization, and entrapment within soil particles. As buffer width increases, the effectiveness of removing pollutants from surface water runoff increases (Castelle et al. 1992). There is substantial evidence showing narrow buffers are considerably less effective in minimizing the effects of adjacent development than wider buffers (Castelle et al. 1992, Brosofske et al. 1997, Dong et al. 1998, Kiffney et al. 2003, Moore et al. 2005).

Recommendations: Riparian and wetland setbacks should be as protective as or more protective than the SWRCB's *Cannabis Cultivation Policy – Principals and Guidelines for Cannabis Cultivation* requirements that require the following:

Common Name	Watercourse Class	Distance
Perennial watercourses, waterbodies (e.g., lakes, ponds), or springs	I	150 ft.
Intermittent watercourses or wetlands	II	100 ft.
Ephemeral watercourses	III	50 ft.
Man-made irrigation canals, water supply reservoirs, or hydroelectric canals that support native aquatic species	IV	Established Riparian Vegetation Zone
All other man-made irrigation canals, water supply reservoirs, or hydroelectric canals	IV	N/A

The County should evaluate each cultivation site individually and reserve the right to require greater setbacks in some cases.

Additionally, all sites should be evaluated for potential wetland features within the required Biological Resources Assessment. Sites with signs of wetland features should

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be delineated by a Qualified Professional to determine the appropriate setback distances from constructed areas. The draft requirements do not specifically request a delineation be completed for all wetland types.

Comment 6: Tree Removal and Disturbance

Issue: The updated Ordinance prohibits the removal of protected trees greater than nine inches at diameter breast height (dbh) and any tree greater than 20 inches dbh. The Ordinance update also includes the following language regarding tree removal:

“If the biotic assessment required by the updated cannabis land use Ordinance determines that construction may impact protected trees, the project applicant shall procure all necessary tree removal permits as required by County Code Chapter 26D. A tree protection and replacement plan shall be developed by a certified arborist.”

This language only indicates that protected trees planned for removal will be considered for replacement. Based on the above, trees less than 20 inches in diameter that are not protected would not require replacement. Both native and non-native trees provide nesting habitat for birds, and habitat value for other wildlife. In particular, removal of large trees without adequate mitigation should be considered a substantial adverse change in the physical conditions within the area affected by the Project. CDFW concurs that individual trees should be protected and mitigated; however, CDFW is concerned that the measure does not take into full consideration impacts to habitat such as loss of oak woodlands or account for understory botanical species. Although CDFW acknowledges the nature of the MND, without proper disclosure or analysis, the Project may result in impacts to native trees that support rare, sensitive, or listed species. Additionally, future cannabis site construction and operations, including grading and irrigation, may cause direct mortality or affect the function and value of native trees and their associated habitat.

Recommendations: CDFW recommends that the MND add criteria that the County can use to determine whether any cultivation project requires site-specific CEQA review and does not meet the criteria for a ministerial process, such as impacts to trees. Disclosure through the CEQA process will assist the County in identifying significance of impacts and appropriate mitigation measures.

CDFW recommends the Project avoid large diameter tree removal (e.g., 15-inches and greater), prohibit loss of oak woodlands and conversion of timberland, and avoid special-status botanical resources. On-site tree replacement should be considered as a potential impact minimization measure, but not sufficient to completely offset temporal impacts from loss of large mature trees. CDFW recommends Project mitigation from loss of large trees on-site, and potentially should include off-site preservation of trees in

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perpetuity. Additionally, any on-site tree protection and replacement plans should include specific tree and understory performance criteria, with monitoring and management of the replaced trees.

Comment 7: Nesting Birds

Issue: The MND acknowledges that trees may be removed for project activities yet does not include minimization or avoidance measures addressing impacts to nesting birds from Project disturbance or tree removal.

Evidence of Impacts: The Project may result in population declines or local extirpation of special-status birds, disturbance to migratory birds, habitat loss and fragmentation, and reduced reproductive capacity. Grading, vegetation removal, and other ground disturbances could result in direct mortality, disturbance to breeding behavior, or nest abandonment. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. § 10.13). Sections 3503, 3503.5 and 3513 of the Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA. Project implementation allows cannabis activities that may directly impact, or indirectly through habitat modifications, native bird species, which would be considered significant.

Recommendations: To evaluate and avoid for potential impacts to nesting bird species, CDFW recommends incorporating the following mitigation measures into the Project's MND, and that these measures be made conditions of approval for the Project:

CDFW recommends that the following protective measures be included in the MND:

1. **Nesting Bird Surveys:** If Project-related work is scheduled during the nesting season (typically February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), CDFW recommends that a qualified biologist conduct two surveys for active nests of such birds within 14 days prior to the beginning of Project construction, with a final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding the work area are typically the following: i) 250 feet for passerines; ii) 500 feet for small raptors such as accipiters; and iii) 1,000 feet for larger raptors such as buteos. Surveys should be conducted at the appropriate times of day and during appropriate nesting times.
2. **Active Nest Buffers:** If the qualified biologist documents active nests within the Project area or in nearby surrounding areas, a species appropriate buffer between the nest and active construction should be established. The buffer

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should be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist should conduct baseline monitoring of the nest to characterize “normal” bird behavior and establish a buffer distance which allows the birds to exhibit normal behavior. The qualified biologist should monitor the nesting birds daily during construction activities and increase the buffer if the birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist should have the authority to cease all construction work in the area until the young have fledged, and the nest is no longer active.

Comment 8: Light Pollution

Issue: The Project would generate sources of light in rural areas, near wildlands, and near sensitive natural vegetation communities, including permanent lighting from additional buildings or greenhouses, security lighting, and temporary lighting for proposed nighttime construction. The draft MND does not discuss the type or color of lighting that will be used outdoor, i.e., bright security lighting along the perimeter, white light, blue light, etc.

The MND states that it will revise the nighttime lighting requirement to be used only for security reasons. However, the MND does not include measures stating how nighttime lighting would be reduced. CDFW acknowledges and agrees with the ordinance requirement for shielded, downward facing nighttime lighting to reduce lighting spillover onto adjacent properties. In addition to lighting impacts on neighboring areas, artificial lighting and light pollution may cause significant impacts to rare, threatened, endangered, and nocturnal wildlife and migratory birds. Light pollution impacts can disrupt routine behavior of the species life cycle, degrade the quality of the environment utilized by said species and can substantially reduce the number of individuals. The MND does not fully analyze the biological impacts of lighting on wildlife species.

Evidence of Impacts: Sensitive species, wildlife, and their habitats may be adversely affected by increased and artificial night lighting, even temporarily due to night construction activities. Light plays a vital role in ecosystems by functioning as both an energy and an information source (Gaston et al. 2012, 2013). The addition of artificial light into a landscape disrupts this role, altering the natural circadian, lunar, and seasonal cycles under which species have evolved. Artificial lights result in direct illumination, altering the natural patterns of light and dark, and sky glow (i.e., scattered light in the atmosphere), which can extend the ecological impacts of light far beyond the light source (Longcore and Rich 2004). On cloudy nights in urban areas, for example, the sky glow effect can be of an equivalent or greater magnitude than high-elevation

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summer moonlight (Kyba et al. 2013). The addition of artificial light into a landscape can impact a broad range of system processes, including:

- Activity patterns
- Availability and detectability of food resources
- Movement, navigation and migration
- The timing of phenological events
- Physiological functions
- Foraging behavior and predator-prey interactions
- Phototaxis (attraction and movement towards light)
- Circadian rhythms (both physiological and behavioral)
- Causing disorientation, entrapment, and temporary blindness

Recommendations: CDFW recommends the following set of criteria of types of lighting that may be used on-site:

- In addition to facing lights downward, lights should be motion-activated, or turned off or dimmed during critical times of the year (e.g., migration) and during times of night that have the most significant impact on wildlife (i.e., dawn and dusk) (Gaston et al., 2012, 2013).
- Lights with wildlife-friendly spectral composition (i.e., minimize light avoidance/attraction) should be used (Gaston et al. 2012, 2013). LED lights are well suited for operating at variable brightness and being switched off or dimmed during certain times of the year or during times of low demand, as they operate at full efficiency and have no “warm-up” time (Gaston et al., 2012, 2013).
 - Vegetation may also be used to shield sensitive areas against light, and light-absorbent surfaces can be used in place of reflective surfaces (Gaston et al., 2012, 2013).
- All lights should be disposed of properly, as many contain mercury and other toxins.
- Hoop-houses and other grow facilities that use lighting (e.g., light deprivation) should be required to be completely covered at night from sunset to sunrise.

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Comment 9: Fencing Hazards

Issue: The Project may result in the use of open pipes used as fence posts, property line stakes, signs, etc.

Evidence of Impacts: Raptor's talons can become entrapped within the bolt holes of metal fence stakes resulting in mortality. Further information on this subject may be found at: <https://ca.audubon.org/conservation/protect-birds-danger-open-pipes>.

Recommendations: CDFW recommends that all hollow posts and pipes be capped to prevent wildlife entrapment and mortality because these structures mimic the natural cavities preferred by various bird species and other wildlife for shelter, nesting, and roosting. Metal fence stakes used on the Project site should be plugged with bolts or other plugging materials to avoid this hazard.

Comment 10: Monofilament Plastic Netting Prohibition

Issue: Monofilament plastic netting is commonly used as trellising on cannabis plants. This plastic netting can be harmful as wildlife can become entangled and/or trapped. This topic is not considered or evaluated within the MND.

Evidence of Impacts: Plastic netting used in these products has been found to entangle many different species of wildlife, including reptiles, amphibians, birds, and small mammals. CDFW has documented wildlife mortality related to monofilament including to raptor and mammal species. Snake entrapment is of particular concern, as there have been numerous reports of snake injury and mortality due to entanglement in plastic netting used in temporary erosion and sediment control products (Rich et al 2020). Additionally, plastic materials persist in the environment for years before breaking down into smaller fragments. When plastic fragments break down, these smaller fragments or microplastics often blow away or wash materials into waterways and habitat areas.

Recommendations: The Ordinance should prohibit use of monofilament plastic netting and identify comparable materials that may be allowed that are less harmful to fish and wildlife. Allowable alternatives may include bio-degradable material, such as jute and coir (coconut husk fibers) in both erosion control measures and trellising materials.

Comment 11: Sec. 38.16.030. – Authority for Enforcement

CDFW views this Ordinance/MND update as an opportunity to provide gratitude and support for the ongoing enforcement County Code Enforcement has taken to suppress illicit cannabis cultivation while supporting the legal market. CDFW staff has first-hand experience working with county enforcement staff and commends them on their work.

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As always, there is more work to be done in this area and we encourage the ongoing and continued work.

CDFW enforcement staff have partnered with the County on enforcement cases. As an example, we have documented instances in the Santa Rosa Plain where past and current cultivation has occurred, usually by impacting upland grassland habitat, thereby impacting CTS. We would like to see our ongoing partnership evolve to restore, remediate, and mitigate impacts that have already occurred to special-status species habitat as a result of illegal cannabis cultivation, such as to CTS in the Santa Rosa Plain.

The Ordinance update indicates that the Agricultural Commissioner is responsible for conducting enforcement inspections and to determine any subsequent enforcement actions due to activities violating the provisions of the Ordinance. To maintain an active site monitoring and compliance effort for permitted cultivation operations, CDFW recommends that the County ensure adequate funding and personnel are available to assist with conducting inspections as needed.

ENVIRONMENTAL DATA

CEQA requires that information developed in draft environmental impact reports and negative declarations be incorporated into a data base which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDDB. The CNDDDB field survey form, online field survey form, and contact information for CNDDDB staff can be found at the following link: <https://wildlife.ca.gov/data/CNDDDB/submitting-data>. The types of information reported to CNDDDB can be found at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs., tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).


CONCLUSION

CDFW supports efforts to regulate cannabis cultivation and to address the numerous and substantial environmental impacts. We believe that greater regulatory oversight and enforcement by local Lead Agencies can help minimize the environmental impacts of

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cannabis cultivation. CDFW appreciates the opportunity to comment on the MND to assist the County in identifying and mitigating Project impacts on biological resources. If you have any questions, please contact Ms. Mia Bianchi, Environmental Scientist, at Mia.Bianchi@wildlife.ca.gov; or Mr. Wes Stokes, Senior Environmental Scientist (Supervisory), at Wesley.Stokes@wildlife.ca.gov.

Sincerely,

DocuSigned by:

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