



August 9, 2019

*Via Federal Express overnight delivery*

Board of Forestry and Fire Protection  
ATTN: Edith Hannigan, Board Analyst  
1416 9<sup>th</sup> Street, Room 1506-14  
Sacramento, CA 95814

**Re: California Vegetation Treatment Program Draft Program Environmental Impact Report**

Dear Ms. Hannigan:

The California Chaparral Institute (“CCI”), Center for Biological Diversity (“Center”), Endangered Habitats League (“EHL”), and Sierra Club submit the following comments on the Draft Program Environmental Impact Report (“PEIR”) for the State’s proposed California Vegetation Treatment Program (“CALVTP” or “Program”).

The Center is a non-profit organization with more than one million members and online activists and offices throughout the United States, including in Oakland, Los Angeles, and Joshua Tree, California. The Center’s mission is to ensure the preservation, protection and restoration of biodiversity, native species, ecosystems, public lands and waters and public health. In furtherance of these goals, the Center’s Climate Law Institute seeks to reduce U.S. greenhouse gas emissions and other air pollution to protect biological diversity, the environment, and human health and welfare.

EHL is southern California’s only regional conservation organization, and it and its members have a direct stake in maintaining the health of Southern California’s unparalleled biodiversity and the native ecosystems that support it. EHL is deeply concerned about the far-ranging environmental impacts that would result from implementation of the VTP. EHL is represented in this matter by the firm Shute, Mihaly, & Weinberger LLP.

The Sierra Club is one of the nation's oldest and largest environmental organizations. It was founded in 1892 by a group of Californians, including John Muir, who valued the state's wilderness areas. Today, the Club has chapters in every state and a national membership that exceeds 1 million. Sierra Club California promotes the preservation, restoration and enjoyment of the environment through regulatory and legislative advocacy on behalf of California's 400,000 members and supporters.

The California Chaparral Institute is a nonprofit education and research organization dedicated to the protection of the chaparral ecosystem, helping communities live safely in fire prone environments, and inspiring a greater understanding of and appreciation for Nature.

The catastrophic wildfires in northern and southern California these past two years have demonstrated more than ever the urgency of addressing wildfire issues in the state. But the Board and CALFIRE seem to have drawn all the wrong lessons from those tragic events. At a time when the Board should be prioritizing the safety and protection of existing communities and developing strategies for minimizing the number of people and homes that are placed in harm's way, it is instead proposing to waste precious State resources on vegetation treatment strategies that leading wildfire experts agree are ineffectual at protecting lives and property from the most destructive wildfires. Indeed, the proposed CALVTP would serve to facilitate the expansion of development into extremely hazardous wildlands. And it does so at the cost not only of the State's limited fire-fighting resources, but of much of our natural and biological heritage.

Unfortunately, the CALVTP PEIR neither discloses nor provides adequate mitigation for the devastating impacts the program will have on the environment. We had hoped that after the last three iterations of the CALVTP (2013, 2016 and 2017), the new program would address the numerous deficiencies identified by wildlife scientists and environmental organizations and others. But after carefully reviewing the current PEIR, it is clear that the new program has the potential to be even more devastating than the Board of Forestry and Fire Protection's (Board) prior proposals as it proposes to substantially increase the amount of vegetation treated every year. The current PEIR also continues to violate the requirements of the California Environmental Quality Act ("CEQA"),<sup>1</sup> because it: (1) fails to adequately describe the CALVTP; (2) fails to properly analyze the Program's environmental impacts; (3) relies on ineffective and unenforceable Standard Project Requirements (SPRs)/mitigation to conclude that the CALVTP's impacts would be reduced to levels that are less than significant; and (4) fails to undertake a legally sufficient study of alternatives to the Program. Such fundamental errors undermine the integrity of the PEIR.

**I. Like the Prior Versions of the CALVTP, the Current CALVTP Will Cause Adverse Environmental Impacts and Will Fail to Its Stated Goal of Safeguarding People and Protecting Property.**

The proposed CALVTP is a plan to burn, treat with herbicides, and otherwise modify the vegetative landscape of California on a massive and unprecedented scale. The Board's Program would require the implementation of fuel management activities that would make about 20 million acres of land across the State subject to treatment.<sup>2</sup> That is an area equal to South Carolina.

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<sup>1</sup> Cal. Envtl. Quality Act ("CEQA"), Cal. Pub. Res. Code § 21000 *et seq.*

<sup>2</sup> California Board of Forestry and Fire Protection, California Vegetation Treatment Program, Draft Program Environmental Impact Report (June 24, 2019), ("PEIR") at 2-1.

First, the PEIR’s statement of purpose for the CALVTP is vague and unclear, which infects the PEIR’s entire analysis, including the analysis of whether the CALVTP can meet its objectives. The Introduction indicates that the primary purpose of the VTP is “to reduce wildfire risks and avoid or diminish the harmful effects of wildfire on the people, property, and natural resources in the state of California”<sup>3</sup>

Next, the premise upon which the CALVTP relies—the Board’s view that a substantial part of this vast amount of land must be “treated” to prevent wildfire—is not only grandiose but, for California’s extensive shrub vegetation and forest communities, entirely lacking in scientific basis. For this very large and vital component of the CALVTP, we can find no evidence in the PEIR that the CALVTP would even achieve the Board’s mission of safeguarding the people and protecting the property and resources of California from the hazards associated with wildfire. Nor can we find any evidence in the PEIR that the Program would be effective for non-wind driven fires or that non-wind-driven fires cause significant harm, or that the PEIR would lead to ecological restoration.

Throughout the PEIR, the PEIR consistently conflates the objectives of community fire safety and ecosystem restoration.<sup>4</sup> However, these are distinct objectives that are accomplished using different management tools. The PEIR must clearly distinguish between these two different objectives—community fire safety and ecological restoration—as well as the management actions that are being proposed to accomplish each objective, how these actions will achieve each objective, and the impacts of the management actions. However, the CALVTP’s proposal to massively ramp up vegetation clearing in the state would accomplish neither objective.

Environmental organizations, wildlife regulatory agencies, and expert scientists in the fields of fire science and ecology, fire management, biogeography, native plant ecology, biodiversity, and wildlife conservation biology submitted extensive comments on the prior versions of the CALVTP and the associated PEIRs.<sup>5</sup> Wildlife regulatory agencies, including the

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<sup>3</sup> PEIR at 1-1 (“The proposed CalVTP defines the vegetation treatment activities and associated environmental protections that would occur within the SRA to reduce wildfire risks as one component of the range of actions being implemented by the state to respond to California’s wildfire crisis.”) and 1-3 (“The proposed CalVTP directs the implementation of vegetation treatments to reduce wildfire risks and avoid or diminish the harmful effects of wildfire on the people, property, and natural resources in the state of California.”)

<sup>4</sup> For example, ecological restoration is categorized as one of the three vegetation treatment types proposed for the purpose of “reducing the likelihood of a ground fire increasing in intensity and helping fire responders more easily contain a fire,” along with WUI fuel reduction and fuel breaks (PEIR at ES-3). However, ecological restoration is not a treatment type, but an objective with its own set of management tools.

<sup>5</sup> The following letters and reports are attached and are incorporated by reference into this letter: Letter from Dan Silver, Executive Director, Endangered Habitats League to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013) ; Letter from CJ Fotheringham, Research Ecologist, Edith Hannigan (March 31, 2016); Letter from Wayne D. Spencer, Chief Scientist, Conservation Biology Institute to Board of Forestry and Fire Protection (March 31, 2016);and Letter from Alexandra D. Syphard, Research Scientist, Conservation Biology Institute to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013); ; Letter from Shaye Wolf, Senior Scientist, Center for

United States Fish and Wildlife Service and the California Department of Fish & Wildlife, and other environmental organizations also submitted comments on the prior versions of the CALVTP and PEIR.<sup>6</sup> Each of these letters and reports explained that the prior CALVTPs approach to reducing the severity and frequency of fires lacked a reasoned justification based on science and substantial evidence. These letters remain relevant to the current CALVTP and its PEIR.

The signatories to this letter have a long history of supporting reasonable strategies to protect people and property from the hazards associated with wildfire. Recognizing the critical importance of promoting sound wildfire prevention strategies, EHL for example, has at least twice offered the assistance of its world-renowned scientists to collaborate and assist on an approach to treating vegetation that would better protect natural resources and incorporate the most recent science.

Upon learning that the prior versions of the CALVTP had been withdrawn, we were optimistic that the Board would take these suggestions and offers of assistance to heart and make substantive modifications to the CALVTP and revise the EIR in a manner that complied with CEQA. Yet, after carefully reviewing the 2019 version of the CALVTP and the current PEIR, it is clear that the Board's response to these comments and suggestions is, lamentably, denial. The vast majority of concerns raised by fire ecologists and wildlife regulatory agencies and scientists about the Program and its EIR appear to have been rejected out of hand. Rather than

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Biological Diversity to Edith Hannigan, Land Use Planning Program Manager, California Board of Forestry and Fire Protection (Mar. 1, 2019); Letter from Shaye Wolf, Center for Biological Diversity to Edith Hannigan, Board Analyst, California Board of Forestry and Fire Protection (Jan. 12, 2018); Letter from Shaye Wolf, Senior Scientist, Center for Biological Diversity to Edith Hannigan, Board Analyst, California Board of Forestry and Fire Protection (May 31, 2016).

<sup>6</sup> The following letters and reports are attached and are incorporated by reference into this letter: Letter from Karen A. Goebel, Assistant Field Supervisor, U.S. Department of the Interior, Fish and Wildlife Service to George Gentry, Executive Officer, California Department of Fire and Forest Protection (Feb. 25, 2013); Letter from Robert Taylor, Fire GIS Specialist, Department of the Interior, National Park Service, to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013); Memorandum from Sandra Morey, Deputy Director, Ecosystem Conservation Division, California Department of Fish and Wildlife to George Gentry, Executive Officer, Board of Forestry and Fire Protection, (Feb. 25, 2013); Letter from Van K. Collinsworth, Natural Resource Geographer, to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 21, 2013); Letter from Richard W. Halsey, Director, California Chaparral Institute to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Jan. 25, 2013); Letter from Richard W. Halsey, Director, California Chaparral Institute and Justin Augustine, Attorney, Center for Biological Diversity to George Gentry, Executive Officer, Board of Forestry and Fire Protection, (Feb. 25, 2013); Letter from Richard W. Halsey, Director, California Chaparral Institute to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Apr. 8, 2013); Letter from Anne S. Fege, Adjunct Professor, Department of Biology, San Diego State University to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 23, 2013); Letter from Greg Suba, Conservation Program Director, California Native Plant Society to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013); Letter from Frank Landis, Conservation Chair, California Native Plant Society to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 15, 2013); Letter from Sweetgrass Environmental Consulting to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013).

substantively revise the CALVTP or accurately analyze the environmental harm that would accompany the Program, the CALVTP and its PEIR merely seek to defend the faulty science, erroneous assertions and conclusions of the prior documents.

Indeed, as with the prior versions of the CALVTP, the current CALVTP indefensibly treats the diverse ecological regions of the state with the same broad brush. For the scrub systems of Southern California, in particular, its management prescriptions—to the extent they could be gleaned from the PEIR—are bereft of scientific basis and lack demonstrable efficacy. Furthermore, the assumption that fire safety could be manufactured through vegetation removal is illusory as certain of the strategies contemplated by the CALVTP are likely to result in an increase in fire frequency. Equally problematic, the CALVTP would encourage the continued expansion of the Wildland Urban Interface (“WUI”) and the resulting vicious cycle of additional home construction in high fire hazard areas. Furthermore, despite admonitions from world-renowned fire scientists and wildlife ecologists, the current CALVTP would *substantially increase the pace and scale of treatments compared to the prior CALVTPs*. While the prior CALVTPs called for treating 60,000 acres per year, the current program has a target of treating 250,000 acres per year!<sup>7</sup>

CALFIRE’s response to the 2017 catastrophic fires throughout the state epitomizes the agency’s flawed approach to wildfire management largely because it continues to conflate fire prevention and fuel treatment. According to Ken Pimlott, “CALFIRE is focused on increasing the pace and scale of fire prevention activities, including vegetation management, across the state.”<sup>8</sup> “These activities play a critical role in helping reduce the impacts large, damaging wildfires have on our communities.”<sup>9</sup> We agree that any sound wildfire plan must include fire prevention techniques that reduce sources of ignitions (e.g., arson watch programs, undergrounding powerlines, building roadside barriers to make it harder for motor vehicles to start roadside fire, regulating commerce in fireworks and teaching people not to operate power equipment in the weeds in red flag weather), but the CALVTP does not actually include any fire prevention techniques. Instead, the CALVTP focuses on fuel treatments such as prescribed burns that have been proven to be ineffective in suppressing the wind driven fires that currently plague California. In fact, as fire scientists explain, in southern California, there is no evidence of any inhibitory effect of past fire on subsequent fire. This is because fire occurs in only two percent of the vegetation statewide each year and, therefore, the probability of a wildfire encountering a recently burned area is very low.<sup>10</sup> In addition, California shrub and grass fuels accumulate rapidly and are sufficient to carry a repeat fire very soon (e.g., within 1 or 2 years) after previous fire.<sup>11</sup>

In contrast to prior versions, the PEIR correctly acknowledges that the proposed vegetation treatments will be ineffective in slowing or stopping the extreme wind-driven fires

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<sup>7</sup> See PEIR, at 2-1 and 2017 CALVTP PEIR, at 2-2.

<sup>8</sup> See Press Release, Bd. of Forestry and Fire Prot. and CALFIRE, Working to Increase Pace and Scale of Wildfire Prevention Activities (Dec. 19, 2017).

<sup>9</sup> See Press Release, Bd. of Forestry and Fire Prot. and CALFIRE, Working to Increase Pace and Scale of Wildfire Prevention Activities (Dec. 19, 2017).

<sup>10</sup> See Price, Owen et al., The impact of antecedent fire area on burned area in southern California coastal ecosystems, 113 J. of Env'tl. Mgmt. 301 (Apr. 18, 2012).

<sup>11</sup> *Id.*

that cause the majority of homes and lives lost in California.<sup>12</sup> Given this reality, the PEIR then asserts that the key justification for the CALVTP is that proposed vegetation treatments will help slow and suppress non-wind-driven fires and help contain extreme fires when weather conditions shift.<sup>13</sup> However, the PEIR nowhere provides empirical scientific support for these assertions. Instead the PEIR in the Wildfire analysis in section 3.17 repeatedly makes statements that are unsupported by the cited references, misrepresent the main conclusions of the studies it cites, and omits key studies and entire areas of research that are relevant to the CALVTP.

Specifically, in its Wildfire analysis, the PEIR cites three studies for its foundational claim that the proposed vegetation treatments will help slow and suppress non-wind-driven fires, thereby increasing public safety and firefighting effectiveness: Carey and Schuman (2003), Prichard et al. (2010), and Kalies and Yocom-Kent (2016):

Vegetation treatment is the primary approach to wildfire management, because it can reduce the intensity and severity of wildfire, slowing fire movement and creating favorable conditions for firefighting to protect targeted, high-value resources (Carey and Schuman 2003, Prichard et al. 2010).<sup>14</sup>

While evidence has not yet definitively concluded that forest fuel treatments lead to a reduction in the overall size of a fire (USFS 2009, Schoennagel et al. 2017), such treatments can aid in protecting public safety and homes and other structures by reducing wildfire intensity and severity in treated areas under normal fire conditions, and increasing firefighting effectiveness (Kalies and Yocom Kent 2016).<sup>15</sup>

Firefighting effectiveness was also reportedly increased by treatments, due to increased visibility in treated areas, decreased heat and smoke of wildfire, increased penetration of retardant to surface fuels, safe access to the fire, and the ability to quickly suppress spot fires in treated areas (Kalies and Yocom Kent 2016).<sup>16</sup>

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<sup>12</sup> PEIR at ES-1 and ES-2 (“The Board also acknowledges that, given the current severity of fire hazards in the SRA, vegetation treatments may not be able to slow or halt extreme wind-driven fires.”) and 1-3 (“While vegetation treatments under the CalVTP may not be able to slow or halt the extreme fires.”)

<sup>13</sup> PEIR at ES-2 (“However, most fires that occur within the state are not highly wind driven and the proposed vegetation treatments can help slow and suppress them. Vegetation treatments can also play a valuable role in containing the more extreme fires, when weather conditions shift, wind subsides, and fire intensity decreases.”) and 1-3 (“While vegetation treatments under the CalVTP may not be able to slow or halt the extreme fires, most fires that occur within the state are not highly wind driven, and the proposed vegetation treatments can help slow and suppress them. Vegetation treatments can also play a valuable role in containing the more extreme fires, when weather conditions shift, wind subsides, and fire intensity decreases.”)

<sup>14</sup> PEIR at 3.17-3.

<sup>15</sup> PEIR at 3.17-4.

<sup>16</sup> PEIR at 3.17-4.

However, the cited review by Carey and Schuman (2003) specifically does not support the PEIR's proposition, instead concluding that there is no consensus on how vegetation treatment affects wildfire hazard:

Although the assertion is frequently made that reducing tree density can reduce wildfire hazard, the scientific literature provides tenuous support for this hypothesis. This review indicates that the specifics of how prescriptions are to be carried out and the effectiveness of these treatments in changing wildfire behavior are not supported by a significant consensus of scientific research at this point in time.<sup>17</sup>

While Prichard et al. (2010) reported that thinning followed by prescribed burning reduced wildfire severity in a dry mixed conifer forest study area in Washington, while thinning alone did not, the study did not state or provide evidence that these vegetation treatments slowed fire movement or created favorable conditions for firefighting, as asserted by the PEIR.

Importantly, Kalies and Yoccom Kent (2016)'s review of empirical studies in the western U.S. specifically concluded that there is not good evidence that fuel treatments lead to increased public safety or firefighting effectiveness. Kalies and Yoccom Kent (2016) classified the data as "weak" for assessing fuel treatment effectiveness for saving human lives and property (i.e., speed of evacuation; number of homes lost/saved) and for increasing firefighting safety and decreasing firefighting costs.<sup>18</sup> Specifically, the six papers that reported on fuel treatment effectiveness for firefighter safety, suppression factors, homes burned, heat and smoke, and visibility, were anecdotal reports except for one published study. The single published study was an anecdotal account of a single fire in a small area that provides no quantitative scientific evidence.

By contrast, numerous experts have weighed in on the inability of vegetation treatment to achieve the state's fire management goals and the environmental impacts of these approaches. Submitted under separate cover and incorporated by reference into this letter are reports prepared by Dr. Wayne Spencer and Dr. Alexandra D. Syphard to California Board of Forestry and Fire Protection, January 10, 2018; letter from CJ Fotheringham, Research Ecologist, USGS to California Board of Forestry and Fire Protection, January 9, 2018; letter from R. Halsey et al., to California Board of Forestry and Fire Protection, January 12, 2018; letter from CJ Fotheringham, Research Ecologist, USGS to E. Hannigan, California Board of Forestry and Fire Protection, May 31, 2016; and letter from Frank Landis, Conservation Chair of the San Diego Chapter of the California Native Plant Society to E. Hannigan, California Board of Forestry and Fire Protection, May 30, 2016. These letters commented on prior versions of the CALVTP and PEIR, but the comments raised therein remain applicable to the current CALVTP and PEIR. We respectfully request that the Final EIR respond separately to each of the points raised in these letters as well as to the points raised in this letter.

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<sup>17</sup> Carey, H. and M. Schumann, Modifying wildfire behavior – the effectiveness of fuel treatments, National Community Forestry Center, Southwest Region Working Paper (2003) at 14.

<sup>18</sup> PEIR at 3.17-4.

## II. The PEIR's Justifications for Failing to Provide a More Detailed Analysis of the VTP's Environmental Impacts Are Groundless.

Among the PEIR's most notable deficiencies is the lack of a detailed accounting of the CALVTP's environmental impacts. The PEIR attempts to defend its vague analysis by suggesting that the document serves as a first-tier document for later CEQA review of individual projects included in the Program and that further analysis will be undertaken as each project is implemented. This justification is unavailing. Not only does the PEIR improperly defer analysis of ascertainable environmental impacts to a future process, but that future process lacks any workable means for analyzing and mitigating the impacts of individual projects, and effectively shuts out public participation.

Under CEQA, the "programmatic" nature of this PEIR is no excuse for its lack of detailed analysis. The PEIR grossly misconstrues both the meaning and requirements of a "program" EIR by suggesting that the broad scope of the CALVTP plays an important role in determining the appropriate level of detail to include in the PEIR.<sup>19</sup> This approach is flawed, at the outset, because CEQA mandates that a program EIR provide an in-depth analysis of a large-scale project, looking at effects "as specifically and comprehensively as possible."<sup>20</sup> Indeed, because it is designed to look at the "big picture," a program EIR must (1) provide "more exhaustive consideration" of effects and alternatives than can be accommodated by an EIR for an individual action, and (2) consider "cumulative impacts that might be slighted in a case-by-case analysis."<sup>21</sup>

Furthermore, regardless of whether a lead agency prepares a "program" EIR or a "project-specific" EIR under CEQA, the requirements for an adequate EIR remain the same.<sup>22</sup> "Designating an EIR as a program EIR also does not by itself decrease the level of analysis otherwise required in the EIR."<sup>23</sup> Even a program-level EIR must contain "extensive, detailed evaluations" of a plan's effects on the existing environment.<sup>24</sup> The "extensive, detailed evaluations" required by CEQA are absent from the PEIR.

The PEIR's reliance on future, project-level environmental review is also misplaced. Again, CEQA's policy favoring early identification of environmental impacts does not allow agencies to defer analysis of a plan's impacts to some future EIR for specific projects

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<sup>19</sup> PEIR at 3-1.

<sup>20</sup> 14 Cal. Code. Regs. ("CEQA Guidelines") § 15168(a) & (c)(5).

<sup>21</sup> § 15168(b)(1)-(2).

<sup>22</sup> CEQA Guidelines § 15160.

<sup>23</sup> *Friends of Mammoth v. Town of Mammoth Lakes Redevelopment Agency*, (2000) 82 Cal. App. 4th 511, 533.

<sup>24</sup> *Environmental Planning and Info. Council v. Cnty. of El Dorado*, (1982) 131 Cal. App. 3d 350, 358. See also *Kings Cnty Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 721-723 (where the record before an agency contains information relevant to environmental impacts, it is both reasonable and practical to include that information in an EIR).



contemplated by that plan.<sup>25</sup> As CEQA Guidelines section 15152(b) explicitly warns, “[t]iering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration.”

Moreover, as discussed below, there is no guarantee in this case that such future, detailed environmental review will happen or, if it does, that environmental impacts will be identified or mitigated. Under these circumstances, a detailed environmental impact analysis must be performed now, prior to the CALVTP’s approval. As the Court of Appeal explained in *Stanislaus Natural Heritage Project v. County of Stanislaus*, CEQA requires that this environmental review take place before project approval.<sup>26</sup> In *Stanislaus*, the court rejected the argument that a programmatic EIR for a specific plan and general plan amendment could ignore site-specific environmental review because future phases of the development project would include environmental review, stating that tiering “is not a device for deferring the identification of significant environmental impacts that the adoption of a specific plan can be expected to cause.”<sup>27</sup>

Because the Board intends to allow unspecified project-level approvals in reliance on this PEIR, and because there is no indication that any meaningful future environmental review will take place, the PEIR must include a detailed, project-level analysis of the impacts that could arise from the implementation of all aspects of the CALVTP, as well as a meaningful discussion of alternatives and mitigation measures, so the Board and the public can understand the consequences of the CALVTP before considering whether it should be approved.

One approach the Board could take is to prepare separate EIRs for each of the ecological regions in the state. As the PEIR explains, the setting description and environmental analysis for the CALVTP are organized into geographic regions reflecting different environmental characteristics.<sup>28</sup> Despite this alleged organizational structure, the EIR preparers appear to have been tasked with a herculean task – the program is simply too massive to easily facilitate the level of impact analysis CEQA requires. Preparing separate EIRs for the state’s geographic regions would greatly enhance the ability of the EIR preparers to comprehensively analyze—and the public to meaningfully comment on—the environmental effects of the CALVTP.

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<sup>25</sup> See *Bozung v. Local Agency Formation Comm’n* (1975), 13 Cal.3d 263, 282-84; *Christward Ministry v. Superior Court*, (1986) 184 Cal.App.3d 180, 194 (; *City of Redlands v. Cnty. of San Bernardino*, (2002) 96 Cal. App. 4th 398, 409.

<sup>26</sup> *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal. App. 4th 182, 196.

<sup>27</sup> *Id.* at 635.

<sup>28</sup> PEIR at 3-3.

### III. The PEIR's Description of the CALVTP Is Vague and Not Finite.

An accurate description of a proposed Program is “the heart of the EIR process” and necessary for an intelligent evaluation of the project’s environmental effects.<sup>29</sup> Consequently, courts have found that, even if an EIR is adequate in all other respects, the use of a “truncated project concept” violates CEQA and mandates the conclusion that the lead agency did not proceed in a manner required by law.<sup>30</sup> Thus, an inaccurate or incomplete project description renders the analysis of significant environmental impacts inherently unreliable. While extensive detail is not necessary, the law mandates that EIRs should describe proposed projects with sufficient detail and accuracy to permit informed decision-making.<sup>31</sup>

Here, one of the essential defects of this PEIR is its thoroughgoing failure to accurately describe the Program. The PEIR identifies categories of fuel management treatment types (e.g., wildland-urban interface; fire breaks and ecological restoration) and explains that within each of these treatment categories, a menu of treatment activities would be implemented to modify fuels within the landscape. These treatment activities include, for example, prescribed burning, mechanical and manual treatments, and herbicide applications.<sup>32</sup> The scale of the Program is staggering as it would subject about 20 million acres of land throughout the state to fuel management treatments.<sup>33</sup> The PEIR identifies the objective of the CALVTP as substantially increasing the pace and scale of treatments to achieve a statewide total of at least 500,000 acres per year on non-federal lands which results in a target of up to 250,000 acres per year.<sup>34</sup> Yet, when one attempts to drill down to determine how the Program would actually be implemented, it becomes clear that the Board has no idea which program activities would take place or where they would be implemented. Consequently, the vagueness of the PEIR’s description of the CALVTP creates numerous, varied, and incurable analytical problems.

For example, the PEIR states that the factors to be considered when designing and implementing, for example, prescribed burning, would include environmental impacts.<sup>35</sup> Yet, the PEIR provides no criteria as to how the vague reference to “environmental impacts” would be applied in determining whether prescribed burning would be conducted in any particular location. How would the Board decide whether an area proposed for a prescribed burn should come at the expense of important environmental resources such as special-status plant or wildlife species? How would the Board decide whether and where to implement a mosaic pattern for a prescribed burn? This built-in conflict is bound to arise over and over again during the Program’s implementation, yet the PEIR does not provide even a hint as to how conflicts such as these would be resolved. In essence, the Project Description here is no more than an idea – an idea that may be changed in a never-ending variety of ways over the next decade or more.

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<sup>29</sup> *Sacramento Old City Ass’n*, 280 Cal. Rptr. at 485; see *Rio Vista Farm Bureau v. Cnty. of Solano*, (1992) 5 Cal. App. 4th 351, 369-370 (project description is the “sine qua non” of an informative and legally sufficient EIR) (citations omitted).

<sup>30</sup> *San Joaquin Raptor/Wildlife Rescue Ctr.*, (1992) 27 Cal. App. 4th 713, 728 (citations omitted).

<sup>31</sup> See CEQA Guidelines § 15124 (requirements of an EIR).

<sup>32</sup> See PEIR at 2-7; 2-18.

<sup>33</sup> *Id.* at 2-4.

<sup>34</sup> *Id.* at 2-1.

<sup>35</sup> *Id.* at 2-20.

As another example, the PEIR includes principles for implementing fuel break treatment projects but the principles are so broad and vague as to be meaningless. The PEIR explains that “given the diversity of California fuel types, topography, and weather conditions, general guidelines under this program for standardized fuel width or volume of fuels to remove *would not be feasible*.”<sup>36</sup> Again, without specificity regarding this critical Program component, there can be no analysis of the environmental impacts that would result from the construction of fuel breaks that are proposed over 3.1 million acres of land.<sup>37</sup>

Piling even more uncertainty on top of the already vague Project Description, this PEIR, like its predecessors, lacks sufficient maps of potential treatment areas. The PEIR explains, for example, that the area to be treated by a wild urban interface (“WUI”) fuel reduction activity was defined through a complex modeling process.<sup>38</sup> The PEIR shows a map of WUI treatment areas.<sup>39</sup> However, Figure 2.4 is not a serious tool of measurement to identify treatment locations within the WUI areas because its scale is too small to be useful. There is no logical reason why the maps could not have been printed at a larger scale on multiple pages.

The deficient maps undermine the PEIR’s ability to adequately describe the Program. Importantly, as Frank Landis explains, the maps are based on an outdated and problematic fire hazard analysis, which, in turn, was based on faulty science.<sup>40</sup> Consequently, the PEIR does not even disclose the location of specific lands that would be treated by the CALVTP. As Frank Landis explains:

How can local impacts be analyzed if the time and place affected by any program is not specified? How can cumulative impacts be analyzed if there is insufficient local data on where and when the program occurs, and what is affected? How can landowners determine whether they or neighboring properties are susceptible to the CALVTP, in case they want to take action? Why does the PEIR show maps that are insufficiently detailed for any landowner to determine whether they are subject to the proposed program or not?<sup>41</sup>

It is especially disconcerting that the CALVTP relies on deficient mapping because state agencies, including the California Department of Fish & Wildlife and the California Native Plant Society, have mapped California’s vegetation and have created two editions of *The Manual of California Vegetation* (MCV).<sup>42</sup> Dr. Landis explains that the MCV contains a wealth of information on fire ecology.<sup>43</sup> CEQA requires an EIR to include the precise location and boundaries of a proposed project to be shown on a detailed map.<sup>44</sup> Because the CALVTP PEIR fails to include this fundamental information, there can be no meaningful evaluation of the

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<sup>36</sup> PEIR at 2-13 (emphasis added).

<sup>37</sup> *Id.* at 2-13.

<sup>38</sup> *Id.* at 2-9.

<sup>39</sup> PEIR Figure 2.4.

<sup>40</sup> See Letter from Frank Landis, Conservation Chair, California Native Plant Society to Edith Hannigan, Board Analyst, Board of Forestry and Fire Protection (May 30, 2016) (incorporated by reference).

<sup>41</sup> See *Id.* at 4.

<sup>42</sup> *Id.* at 10.

<sup>43</sup> *Id.*

<sup>44</sup> CEQA Guidelines § 15124(a).

Program's environmental impacts. Further, the failure to include a sufficiently detailed map contravenes the PEIR's purpose as an informational document that engenders public participation.<sup>45</sup>

Perhaps the most problematic component of the PEIR's Project Description though pertains to the Program's approach to the "Implementation Framework" processes. We understand that the CALVTP is meant to provide an overview of the comprehensive wildfire risk reduction program, but the PEIR must still provide sufficient information to be able to determine how the CALVTP would be implemented and how it will affect environmental resources. The document suggests that subsequent review would occur during the implementation process,<sup>46</sup> but the Board's consideration of this EIR and the CALVTP is the only opportunity for the public to understand and weigh in on the big-picture questions that will determine the magnitude of ecological impacts that would accompany the broad implementation of this Program. There is no indication anywhere in the PEIR that subsequent implementing projects will undergo environmental review.

The PEIR states that CALFIRE would evaluate a proposed treatment project by completing a Project-Specific Analysis (PSA), the purpose of which is to evaluate the proposed treatment site and activity to determine whether the environmental effects have been addressed in the program EIR.<sup>47</sup> Yet, there are so many loopholes in the CALVTP's suggested mechanism, that it is almost impossible to envision that a comprehensive evaluation of the CALVTP's environmental impacts would *ever* be undertaken.

First, the sheer number of treatment projects that are envisioned to be implemented on a yearly basis and the geographic scope of these projects alone would suggest that determining each subsequent activity's environmental impacts would not be subject to a sufficient level of scrutiny. In other words, the multi-step project implementation process—of which the determination of environmental impacts is only one part—would be extraordinarily cumbersome, to put it mildly. While we can find no indication in the current PEIR of the number of projects the Board anticipates undertaking on an annual basis, the prior CALVTP called for implementing about 230 projects every year at an average project size of 260 acres.<sup>48</sup> That is about one project for every workday of the year. Compared to the prior version of the CALVTP, the current CALVTP would, at a minimum, more than quadruple the amount of area treated on an annual basis (from 60,000 acres per year to at least 250,000 acres per year).<sup>49</sup> Assuming 250,000 acres of land per year and the same project size, this could equate to more than 900 discrete treatment projects per year. Yet, the PEIR also acknowledges the Executive Order B-52-18 target of treating 500,000 acres of land per year within a five year period.<sup>50</sup> If this target were reached, this could equate to 1,800 discrete treatment projects per year.

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<sup>45</sup> See e.g. *In re Bay-Delta Programmatic Env'tl Impact Report Coordinated Proceedings* (2008) 43 Cal. App. 4th 1143, 1162; *No Oil Inc. v. City of Los Angeles* (1974) 13 Cal. 3d 68.

<sup>46</sup> PEIR at 2-29.

<sup>47</sup> *Id.*

<sup>48</sup> California State Board of Forestry and Fire Protection, Program Environmental Impact Report for the Vegetation Treatment Program (2017) (2017 PEIR) at 2-12.

<sup>49</sup> PEIR at 2-2.

<sup>50</sup> PEIR at 6-6.

For each such project, CALFIRE would have to: (a) prepare the PSA; (b) submit the PSA for three levels of review (county, regional and state); and (c) send the final determination to the Sacramento CEQA Coordinator.<sup>51</sup> Does the state even have sufficient staff to undertake this process for each of the projects that are proposed for implementation every year? The 2017 PEIR itself answers this question in the negative, stating that one key advantage of the Program compared to the No Program alternative is that the No Program alternative would require the preparation of further CEQA review – which is “costly, time consuming, repetitive, and *unsustainable from a personnel standpoint.*”<sup>52</sup>

Second, despite the state’s lack of capacity to carry out such review, there is simply no assurance that the SPR Process would ensure that environmental resources are protected. The PEIR explains that a CEQA Coordinator would make a final determination as to whether the subsequent activity is considered within the scope of the Program EIR.<sup>53</sup> If it is determined that the subsequent activity falls within the scope of the Program EIR, then “*no additional CEQA documentation would be required.*”<sup>54</sup> Thus, it would appear that a subsequent activity need only be included in the scope of the Program EIR to escape further environmental review. Due to the excessively broad scope of the CALVTP and the fact that the PEIR acknowledges the potential environmental impacts from all projects that could be implemented over a 20 million acre area, it is almost impossible to imagine the CEQA Coordinator(s) making a determination that a subsequent activity is outside the scope of the Program EIR. Given the absence of any specific environmental analysis in the Program EIR, the process is effectively designed so that such analysis will never occur.

Third, there is no assurance that the PSR process would result in meaningful project-level environmental review pursuant to CEQA. The PEIR includes numerous statements indicating that this PEIR satisfactorily evaluates the environmental impacts that would occur from the CALVTP’s projects. For example, it states: “Because the intent of the PEIR is to disclose potentially significant impacts that are reasonably foreseeable to occur from any of the treatments within the extent of the treatable landscape, it is expected that, due to site-specific conditions, many proposed vegetation treatment projects will result in less severe impacts than those identified in the PEIR.”<sup>55</sup> Statements such as these give the distinct impression that the Board and CALFIRE have pre-determined that any environmental impacts will be effectively addressed by the measures in the PEIR and that no further environmental review need be undertaken.

Moreover, there is no indication that a Coordinator would have the necessary expertise to evaluate all of the projects’ potential environmental consequences—much less to do so at the rate envisioned by the CALVTP. A Coordinator may have sufficient experience to generally manage an environmental review process, but it is highly unlikely that this person has, for example, the necessary hydrologic expertise to evaluate a treatment project’s potential to degrade water quality. Indeed, the PEIR explains that the project proponent would actually be responsible for

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<sup>51</sup> *Id.* at 2-29; 2-30.

<sup>52</sup> 2017 PEIR at 3-8 (emphasis added); *see also* 2017 PEIR, at 2-37.

<sup>53</sup> PEIR at 2-30.

<sup>54</sup> *Id.* (emphasis added).

<sup>55</sup> *Id.* at PD-3/4.

making the determination as to whether mitigation measures would even need to be applied.<sup>56</sup> Proper environmental review requires experts covering the range of impact categories of which CEQA requires analysis—the opinion of a “coordinator” on these subjects does not pass legal muster. In light of these procedural uncertainties, the PEIR’s assurance that future projects would undergo further environmental review is meaningless, misleading, and disingenuous.

It is particularly disconcerting that the CEQA Coordinator’s review and determination would happen behind closed doors.<sup>57</sup> It is clear that the public would have no opportunity to be notified of, or influence, the process. The public’s right to participate in the environmental review process under CEQA is mandated in the statute itself and is vigilantly protected by the California courts that interpret and enforce CEQA.<sup>58</sup> Put simply, the public participation process is a critical tool to ensure that the public has an opportunity to hold agencies accountable for their actions.

Because the PEIR provides no assurance that the environmental impacts from the CALVTP’s subsequent treatment activities will be adequately evaluated or mitigated, the document is grossly deficient. The CALVTP must be redesigned and the PEIR revised to commit to a program that ensures that each subsequent activity will receive full environmental review pursuant to CEQA *with full public participation*. As part of this program redesign, the revised PEIR must demonstrate, with substantial evidence, that the state has sufficient staffing to provide comprehensive environmental review for all of the subsequent activities given its current staffing and budgetary limitations.

In sum, the total failure of the Project Description makes the rest of the PEIR inadequate as well. Because the specific details of the Program are unknown, its environmental impacts cannot be accurately analyzed, nor can effective mitigation be identified. The fog of uncertainty surrounding the Program and its impacts leads inevitably to deferred analysis and mitigation; over and over again the PEIR states essentially that impacts will be determined as they happen and mitigation will be worked out then. This strategy is not surprising given the inadequate Project Description, but it is unlawful under CEQA.<sup>59</sup>

#### **IV. The PEIR’s Mitigation Measures Are Flawed.**

The PEIR’s approach to mitigation is flawed in a number of ways in addition to the unlawful deferred mitigation contemplated in the PEIR and described above. The PEIR unlawfully purports to rely upon Standard Project Requirements in lieu of mitigation measures,

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<sup>56</sup> See PEIR at PD-3/4 (“Through the PSA, the project proponent will document the significance of each relevant impact and if determined to be less than significant, mitigation measure(s) need not apply.”).

<sup>57</sup> See *id.* at PD-3/1 (stating that if a treatment project is within the scope of this Program EIR, the project proponent may act on the project “*without public circulation of any additional environmental document*”) (emphasis added).

<sup>58</sup> CEQA § 21091.

<sup>59</sup> CEQA Guidelines § 15162(a)(1)(B) (“Formulation of mitigation measures shall not be deferred until some future time.”)

fails to include monitoring and reporting requirements to ensure mitigation measures achieve their desired goals, and neglects to consult with other agencies as required by Senate Bill 85.

#### **A. SPRs Are Mitigation Measures and Must Be Treated As Such.**

Throughout the PEIR, CALFIRE presents Standard Project Requirements (“SPRs”) that “are intended to avoid and minimize environmental impacts and comply with applicable laws and regulations.”<sup>60</sup>

The PEIR broadly presumes these SPRs will mitigate any potentially significant impacts from the project.<sup>61</sup> But this approach runs afoul of CEQA’s requirement that impacts first be fully disclosed and analyzed separately from the mitigation analysis. As the court noted in *Lotus v. Dep’t of Transportation*, separation of significance and mitigation/alternatives analysis ensures that appropriate mitigation measures have been considered and that decision makers and the public can “intelligently analyze the logic of the [agency’s] decision.”<sup>62</sup>

In *Lotus*, the EIR for a highway through an old-growth redwood stand assumed that because certain mitigation measures to minimize damage were proposed as part of the project, the impact was non-significant. The court, however, held that the EIR was deficient because it failed to first identify the significant impacts and then appropriate alternatives and mitigation measures, consequently “subvert[ing] the purposes of CEQA by omitting material necessary to informed decisionmaking and informed public participation.”<sup>63</sup> Similarly, the PEIR impermissibly conflates the impacts analysis and mitigation analysis to the extent that it assumes SPRs will reduce impacts to the level of non-significance.

#### **B. The Mitigation Measures Should Include a Monitoring and Reporting Requirement.**

CEQA’s requirements for mitigation measures are intended to ensure those measures are enforceable and are actually implemented. CEQA prohibits public agencies from approving projects with significant environmental impacts unless all feasible mitigation measures to minimize those impacts are adopted.<sup>64</sup>

In doing so, the lead agency must “ensure that feasible mitigation measures will actually be implemented as a condition of development, and not merely adopted and then neglected or disregarded.”<sup>65</sup> Mitigation measures must be “fully enforceable,” either through conditions of approval or through incorporation into a project itself.<sup>66</sup> Where feasible mitigation measures exist, a public agency cannot approve a project without specifically finding that legally adequate

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<sup>60</sup> PEIR at p. 2-31; 3-2

<sup>61</sup> *See, e.g.* PEIR at 3.2-16; 3.8-37; 3.8-38.

<sup>62</sup> *Lotus v. Dept. of Transportation*, (2014) 223 Cal. App. 4th 645, 655-656.

<sup>63</sup> *Id.* at 658.

<sup>64</sup> *See* Pub. Res. Code §§ 21002, 21002.2(b).  
21081.

<sup>65</sup> *Federation of Hillside and Canyon Assns. v. City of Los Angeles*, 83 Cal.App.4th 1252, 1261 (2000) (italics omitted).

<sup>66</sup> CEQA Guidelines § 15126.4(b).

measures have been incorporated into the project.<sup>67</sup> An agency also must adopt a mitigation monitoring and reporting plan to ensure that measures are actually implemented following project approval.<sup>68</sup> If mitigation is infeasible, the agency must make a specific finding to this effect, and must adopt a statement of overriding considerations before it can approve the project.<sup>69</sup> Here, the PEIR fails to provide for monitoring and reporting to ensure that, once projects are undertaken pursuant to the Program, the mitigation measures actually reduce impacts down to less-than-significant levels.

### **C. The Mitigation Measures Violate SB 85.**

Senate Bill 85, passed in the 2019-2020 session, provides that CALFIRE must collaborate with California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the California Water Board “when selecting a fuel reduction project” in order to “ensure the design of the fuel reduction project protects water resources and wildlife habitat while addressing fire behavior and public safety.” There is absolutely no indication in the PEIR that such consultation occurred. CALFIRE should consult these three agencies, as required, and update the PEIR’s mitigation measures accordingly.

## **V. The PEIR’s Analysis and Mitigation of the VTP’s Environmental Impacts are Inadequate.**

### **A. The PEIR Fails to Adequately Analyze and Mitigate Impacts to Air Quality.**

The PEIR acknowledges that air quality impacts from treatment plans are potentially significant and unavoidable.<sup>70</sup> Exhaust from off-road equipment, machine-powered tools, helicopters, and on-road vehicle trips, fugitive dust emissions from vehicle travel and other activities, and smoke generated by prescribed burns will emit criteria pollutants in quantities that exceed the levels of significance established by California’s air districts.<sup>71</sup> However, the PEIR’s analysis of these impacts is insufficient because (1) the PEIR’s assumption that prescribed burns emit fewer criteria and toxic air pollutants than wildfires is not based on substantial evidence; (2) the PEIR fails to analyze all reasonably foreseeable air quality impacts from the CALVTP; and (3) the finding that emissions from the combustion of vegetation treated with herbicides will have no significant health impacts is not based on substantial evidence. As such, the PEIR is inadequate and the air quality impacts of the CALVTP must be revisited.

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<sup>67</sup> See Pub. Res. Code § 21081(a)(1).

<sup>68</sup> Pub. Res. Code § 21081.6(a)(1); CEQA Guidelines § 15097.

<sup>69</sup> Pub. Res. Code § 21081(a)(3), (b); CEQA Guidelines §§ 15091(a)(3), 15093.

<sup>70</sup> PEIR at 3.4-26; 33.

<sup>71</sup> PEIR at 3.4-26.



**i. The PEIR’s analysis of air quality impacts is based on the faulty assumptions that prescribed burns will significantly reduce the prevalence of wildfires and the associated air quality impacts.**

All determinations in an EIR must be supported by substantial evidence.<sup>72</sup> The PEIR’s assertion that “wildfires are generally far more likely to result in adverse air quality and public health impacts than prescribed burns,” which cites an unpublished fact sheet by Berger et al. (2018), is not supported by substantial evidence.<sup>73</sup> On this point, the PEIR fails to accurately represent the state of scientific studies on the air quality and public health impacts of prescribed and wildfire smoke, which is an evolving research area. In regard to PM2.5 exposure, a 2018 review by Navarro et al. (2018) that examined the differences in ambient community-level exposures to particulate matter (PM2.5) from smoke from wildfire fire versus prescribed fire found that “PM2.5 concentrations from wildfire smoke were found to be significantly lower than reported PM2.5 concentrations from prescribed fire smoke.”<sup>74</sup> The study noted that their “review highlights a need for a better understanding of wildfire smoke impact over the landscape” in order to properly assess population exposure to smoke from different fire types.

Further, the PEIR asserts that wildfires have a long smoldering phase which is associated with higher output of particulate matter. However, the PEIR never cites any evidence that wildfires have more smoldering combustion than prescribed fires for the same amount of acreage burned or biomass consumed. Rather, prescribed burns are typically characterized by low-intensity fire and associated smoldering combustion, while mixed-severity wildfires include high-intensity fire patches with high-efficiency flaming combustion that produces less particulate matter for the same amount of biomass consumed.<sup>75</sup>

Most importantly, the PEIR’s assertion that wildfires are more likely than prescribed fires to result in adverse air quality also requires confirmation that prescribed burning will significantly reduce the prevalence of wildfires, and this has not been established. Prescribed fires do not stop wildfires, and there is a low probability that areas that treated with prescribed burn will overlap with wildfire occurrences. Further, any potential reduction in fire intensity resulting from prescribed fire lasts only 10 to 20 years, meaning that using prescribed fire as a means to reduce the intensity of wildland fire requires burning a forest area every 10-20 years.<sup>76</sup> This represents a large increase over current rates of burning and the associated emissions of criteria air pollutants and hazardous air pollutants, which must be accounted for.

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<sup>72</sup> See Pub. Res. Code § 21168.5.

<sup>73</sup> PEIR at 3.4-19 (“Thus, wildfires are generally far more likely to result in adverse air quality and public health impacts than prescribed burns (Berger et al. 2018).”)

<sup>74</sup> Navarro, Kathleen M. et al., A review of community smoke exposure from wildfire compared to prescribed fire in the United States, 9 *Atmosphere* 185 (2018).

<sup>75</sup> Reid J.S. et al., A review of biomass burning emissions part II: intensive physical properties of biomass burning particles, 5 *Atmospheric Chemistry and Physics* 799 (2005).

<sup>76</sup> Rhodes, John J. and William L. Baker, Fire probability, fuel treatment effectiveness and ecological tradeoffs in western U.S. public forests, 1 *Open Forest Science Journal* 1(2008).

**ii. The PEIR impermissibly fails to analyze all significant impacts to air quality.**

An EIR must identify and describe the project's significant environmental effects, including direct, indirect, and long-term effects.<sup>77</sup> The failure to do so violates CEQA. The PEIR's analysis of the air quality impacts of the CALVTP is inadequate because it fails to analyze (1) emissions associated with hauling or processing of biomass and (2) emissions generated by pile burning.<sup>78</sup>

**1. The PEIR impermissibly fails to analyze the air quality impacts from biomass hauling and bioenergy operations.**

The PEIR does not consider emissions associated with any hauling or processing of biomass, ostensibly because these impacts are too uncertain to quantify.<sup>79</sup> In the alternative, the PEIR claims that the fact that biomass facilities must conduct CEQA review obviates the agency from its responsibility to consider emissions from biomass facilities.<sup>80</sup> Neither assertion is correct, and the PEIR's failure to adequately analyze these emissions renders the impacts analysis inadequate.

The fundamental purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment.<sup>81</sup> To that end, the EIR must include a detailed statement setting forth *all* significant effects on the environment of the proposed project.<sup>82</sup>

Both biomass energy generation and biomass hauling have serious implications for air quality. Biomass generation can result in significant emissions of nitrogen oxides, carbon monoxide, particulate matter, and black carbon.<sup>83</sup> Biomass combustion for energy also emits large amount of federally regulated hazardous air pollutants ("HAPs"), including hydrochloric acid, dioxins, benzene, formaldehyde, arsenic, chromium, cadmium, lead, and mercury.<sup>84</sup> Many biomass air pollution emissions can exceed those of coal-fired power plants even after application of best available control technology.<sup>85</sup> Exhaust from biomass hauling—generally performed by diesel-powered trucks—emits criteria pollutants, as mentioned in the PEIR.<sup>86</sup> The fact that the percentage of vegetation hauled to biomass facilities "is expected to increase over time" renders these emissions even more significant.<sup>87</sup>

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<sup>77</sup> Pub. Resources Code § 21100(b)(1); 14 CCR § 15126.2(a).

<sup>78</sup> PEIR at 3.4-27.

<sup>79</sup> PEIR at 3.4-27.

<sup>80</sup> *Id.*

<sup>81</sup> Pub. Res. Code, § 21061.

<sup>82</sup> Pub. Res. Code, § 21100 (b)(1) (emphasis added)

<sup>83</sup> Booth, Mary S., *Trees, Trash and Toxics: How biomass energy has become the new coal* (2004), available at <https://www.pfpi.net/wp-content/uploads/2014/04/PFPI-Biomass-is-the-New-Coal-April-2-2014.pdf>.

<sup>84</sup> *Id.* at p. 38.

<sup>85</sup> *Id.* at p. 41.

<sup>86</sup> PEIR at 3.4-26

<sup>87</sup> PEIR at 2-23.

Biomass energy generation is an integral part of the vegetation treatment plan that is the subject of this PEIR and therefore the impacts on air quality from these activities must be analyzed in the PEIR. A Program EIR is an EIR which may be prepared for a series of actions that can be characterized as “one large project.”<sup>88</sup> Activities comprise “one large project” if they are related geographically, as logical parts in the chain of contemplated actions, in connection with common governing rules, regulations, or plans, or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.<sup>89</sup> Both biomass energy generation and hauling fit each of these requirements—although only one must be met for an action to be considered part of a project for the purposes of CEQA review. First, Biomass hauling and biomass energy generation occurs in the same vicinity as treatment; the feedstock is trucked from the treatment location to the biomass generation facility, and biomass generation facilities (particularly the smaller-capacity facilities required pursuant to Senate Bill 1122<sup>90</sup>) are generally sited near the feedstock source in order to reduce transportation costs. Next, biomass hauling and biomass energy generation are logical endpoints of the treatment plan. The mechanical treatments contemplated under the project include chipping, masticating, and chopping targeted vegetation.<sup>91</sup> These end-products are not suitable for use as merchantable timber; instead, they can be processed into alternative wood products, burned in piles, or combusted in a biomass generation facility. And, in fact, the PEIR explicitly contemplates that “approximately 5 percent [of vegetation removed during mechanical treatment will be] hauled to a biomass facility.”<sup>92</sup> Further, biomass energy generation is intrinsically connected with the CALVTP because treatment conducted pursuant to the plan will provide the feedstock. Finally, biomass hauling and generation is subject to the same clean air statutes and regulations as treatment activities and will have the same impacts as the treatment activities—emissions of criteria pollutants and, as discussed below, toxic air pollutants and greenhouse gases.<sup>93</sup>

Next, the fact that individual biomass facilities must also comply with CEQA does not obviate CALFIRE of its duty to identify and analyze all significant impacts of the Program. CALFIRE’s failure to analyze the emissions from biomass hauling and processing amounts to impermissible deferment. CEQA contemplates consideration of environmental consequences at the “earliest possible stage, even though more detailed environmental review may be necessary later.”<sup>94</sup> Consequently, “CEQA's demand for meaningful information is not satisfied by simply stating information will be provided in the future.”<sup>95</sup> The CEQA Guidelines explain, “Tiering

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<sup>88</sup> CEQA Guidelines § 15168(a)

<sup>89</sup> *Id.* at § 15168(a)(1-4)

<sup>90</sup> Senate Bill 1122 (Rubio 2012).

<sup>91</sup> *See e.g.*, PEIR at 3.4-26.

<sup>92</sup> PEIR at 2-23.

<sup>93</sup> *See generally*, PEIR Section 3.4.1.

<sup>94</sup> *Environmental Protection Information Center v. California Dept. of Forestry & Fire Protection*, 44 Cal. 4th 459, 503 (2008)

<sup>95</sup> *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal. 4th 412, 431 (2007) (internal citations omitted)(EIR held to be inadequate because it did not adequately identify and evaluate future water sources for a mixed-used development and therefore failed to consider all significant impacts from the project); *see also Stanislaus Natural Heritage Project v. County of Stanislaus*, 48 Cal. App. 4th 182, 199 (1996) (EIR for proposed multistage development project that

does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration.”<sup>96</sup> Tiering “is not a device for deferring the identification of significant environmental impacts that the adoption of a specific plan can be expected to cause.”<sup>97</sup>

Emissions from biomass hauling and biomass energy generation are reasonably foreseeable impacts of the Program and must be adequately analyzed. The PEIR claims that emissions from biomass hauling and bioenergy generation are unquantifiable due to a “high level of uncertainty about what types of processing-related activities would occur and the distances feedstock would be hauled,”<sup>98</sup> but this is not the case. Indeed, the PEIR *explicitly predicts* that 5 percent of biomass from mechanical treatments will be hauled to a biomass facility.<sup>99</sup> And the emissions from biomass energy generation are well-known. Biomass power plants must submit emissions data to the California Air Resources Board (“CARB”) annually, and this information is available on CARB’s website.<sup>100</sup> Smaller biomass energy facilities such as those eligible for the biomass feed-in tariff (“BioMAT”) must apply for air permits from their local air pollution control districts; these applications and concomitant CEQA analysis quantifies estimated emissions from these smaller facilities. For example, the Mariposa Biomass Project Conditional Use Permit estimates emissions from a 2.4 MW community-based biomass energy facility that uses forest-based woody biomass as feedstock.<sup>101</sup>

Table 1. Stationary Source Emission Estimates

	IC Engine*		WoodRoll**		Flare***		Total for 2.4 MW	MC APCD CEQA Threshold	Major Source and ERC Threshold
	Emission Factor	Total Emissions	Emission Factor	Total Emissions	Emission Factor	Total Emissions			
	(lb/hr)	TPY	(lb/hr)	TPY	(lb/hr)	TPY	TPY	TPY	TPY
VOC	1.12	4.90	0.05	0.20	0.003	0.002	5.80	100	100
NOx	1.67	7.30	0.71	3.10	0.133	0.100	11.93	100	100
CO	5.55	24.30	0.07	0.30	0.027	0.020	27.96	100	100
PM10	0.23	1.00	0.07	0.30	0.000	0.000	1.48	100	100
PM2.5	0.23	1.00	0.07	0.30	0.000	0.000	1.48	100	100
SOx	0.43	1.90	0.48	2.10	0.000	0.000	4.55	100	100

\* - IC Engine emission factors from Manufacturer's (GE Jenbacher specifications w/SCR control device and catalytic converter

\*\* - WoodRoll emissions factors based on measurements conducted by Cortus Energy

\*\*\* - Emergency/standby flare emissions factors from Cortus Energy based on ordinary LPG/Propane burner

contained no analysis of water supply impacts of later phases, and deferred analysis to later EIRs, held to be inadequate)

<sup>96</sup> 14 CCR § 15152

<sup>97</sup> *Stanislaus* 48 Cal. App. 4th at 199.

<sup>98</sup> PEIR at 3.4-27.

<sup>99</sup> PEIR at 2-23.

<sup>100</sup> California Air Resources Board, Facility Search Engine, <https://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php?dd=> (last visited on August 5, 2019)

<sup>101</sup> County of Mariposa, CEQA Initial Study for Mariposa Biomass Project Conditional Use Permit CUP 2017-117 (2018), available at <https://www.mariposacounty.org/DocumentCenter/View/63721/CUP-2017-117-MARIPOSA-BIOMASS-CEQA-INITIAL-STUDY-SUBSEQUENT-MND>

Further, the locations of the biomass facilities are readily available. The California Public Utilities Commission (“CPUC”) provides information on the location of all biomass energy facilities with generation capacity equal to or greater than 1 MW—effectively, all biomass energy facilities.<sup>102</sup> The byproducts of mechanical treatments will be hauled to the nearest biomass facility in order to reduce transportation costs and emissions from vehicle exhaust.

Contrary to CALFIRE’s representations, emissions from biomass energy deriving feedstock from the Program is reasonably foreseeable: CALFIRE has estimated the quantity of feedstock that will be hauled and processed in biomass energy facilities, and the emissions and location data for these facilities is readily available. Further, when producing an EIR, an agency “is encouraged to make reasonable forecasts.”<sup>103</sup> The clearly defined contours of the Program and the available information regarding biomass facility locations and emissions render an analysis of the impacts of biomass hauling and processing exceedingly reasonable.

## **2. The PEIR impermissibly fails to analyze emissions from pile burning.**

The PEIR fails to disclose that the emissions analysis for Impact AQ-1 presented in Table 3.4-6 does not report emissions that would come from pile burning, and therefore the impacts analysis is inadequate. The Program description clearly identifies pile burning as one of the treatment activities that will occur under the prescribed burning category, where piling burning is defined as placing removed fuels in piles on site and burning them, as distinct from broadcast burning.<sup>104</sup> Of vegetation removed from mechanical thinning, 25 percent will be burned in piles.<sup>105</sup> As such, pile burning is clearly part of the “one large project” contemplated in the PEIR and CEQA requires that its impacts be analyzed.<sup>106</sup>

Nowhere in the PEIR does CALFIRE claim that these emissions are too speculative to quantify. Rather, the emissions analysis for Impact AQ-1 presented in Table 3.4-6 simply fails to report emissions that would come from pile burning. The treatment emissions analysis in Appendix AQ-1 does not appear to calculate the emissions that would come from pile burning, and only appears to calculate emissions from broadcast burning. The failure to analyze impacts from pile burning renders the impacts analysis inadequate.

### **iii. The PEIR’s assertion that combusting vegetation treated with herbicides poses no significant human health risk is unfounded.**

The two studies that the VTP relies on to assert that there are no human health risks from burning vegetation treated with herbicides (Bush et al. 1998, McMahon and Bush 1998) are more than 20 years old, and the cited National Wildfire Coordinating Group report (NWCG 2018)

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<sup>102</sup> California Energy Commission, California Operational Power Plants May 2018 (2018), available at [https://ww2.energy.ca.gov/maps/powerplants/Power\\_Plants\\_Statewide.pdf](https://ww2.energy.ca.gov/maps/powerplants/Power_Plants_Statewide.pdf)

<sup>103</sup> *San Francisco Ecology Center v. City and County of San Francisco*, (1975) 48 Cal. App. 3d 584, 595 (emphasis added) (court upheld an EIR that allegedly overestimated the number of passengers who would use a proposed airport because the estimate was supported by expert opinion).

<sup>104</sup> PEIR at 2-18, Table 2-3.

<sup>105</sup> *Id.*; See also PEIR at 2-23.

<sup>106</sup> 14 CCR § 15168(a).

refers these older studies rather than providing updated information. Importantly, the cited studies do not appear to have tested all the herbicides that are proposed for use in the Program, and Bush et al. (2000) reported Margin of Safety (MOS) values for triclopyr ester and imazapyr (both proposed herbicides under the VTP) that were below the MOS values that are considered safe.<sup>107</sup>

## **B. The PEIR Fails to Adequately Analyze and Mitigate Impacts from Greenhouse Gas Emissions.**

The PEIR acknowledges that GHG emissions from treatment activities pose a potentially significant and unavoidable impact.<sup>108</sup> Exhaust from off-road equipment, machine-powered tools, and helicopters, exhaust from on-road vehicle trips, and smoke generated by prescribed burns are projected to emit 4,051 million metric tons of GHGs annually—the equivalent of 860,085 passenger vehicles driven for one year.<sup>109</sup> However, this figure dramatically understates the true climate implications of the Program. The PEIR is fundamentally flawed in that (1) the regulatory setting fails to consider U.S. obligations under international law; (2) the environmental setting is predicated on the flawed assumption that climate change will lead to greater fire severity; (3) the environmental setting fails to address evidence that mechanical treatments emit more GHGs than wildfires; (4) the PEIR erroneously claims compliance with all existing plans and policies aimed at reducing GHG emissions; (5) the PEIR fails to identify a clear and consistent baseline against which to measure climate impacts; (6) the PEIR fails to consider that reduction in forest carbon stocks may lead to a net GHG emissions increase; (7) the PEIR fails to analyze GHG emissions from biomass hauling and processing and pile burning.

### **i. The regulatory setting should consider U.S. obligations under international law.**

The Regulatory Setting section outlines the federal, state, and local regulations that apply to greenhouse gas emissions. This section should also discuss U.S.’s climate commitment under the Paris Agreement.<sup>110</sup> The United States committed to the climate change target of holding the long-term global average temperature “to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” under the Paris Agreement, as a legally binding instrument through executive agreement.<sup>111</sup> The Paris Agreement established the 1.5°C climate target given the evidence that 2°C of warming would lead to catastrophic climate harms, as synthesized in the Intergovernmental Panel on Climate

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<sup>107</sup> Bush, P.B. et al., Fire and pesticides: a review of air quality considerations, *in Fire and forest ecology: innovative silviculture and vegetation management*, W. Keith Moser and Cynthia E Moser (eds.) (2000) at 135.

<sup>108</sup> PEIR at 3.8-17.

<sup>109</sup> PEIR at 3.8-11.

<sup>110</sup> Under the Paris Agreement rules, the U.S. cannot officially pull out of the Paris Agreement until November 4, 2020 at the earliest.

<sup>111</sup> United Nations Framework Convention on Climate Change, Conference of the Parties, Nov. 30-Dec. 11, 2015, Adoption of the Paris Agreement Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (December 12, 2015), <http://unfccc.int/resource/docs/2015/cop21/eng/109.pdf> (“Paris Agreement”). The United States signed the Paris Agreement on April 22, 2016 as a legally binding instrument through executive agreement, and the treaty entered into force on November 4, 2016.

Change (IPCC) *Special Report on Global Warming of 1.5°C*.<sup>112</sup> In pathways consistent with limiting warming to 1.5°C, global net anthropogenic CO<sub>2</sub> emissions must decline by about 45 percent from 2010 levels by 2030, reaching net zero around 2050.<sup>113</sup> For a two-thirds chance for limiting warming to 1.5°C, CO<sub>2</sub> emissions must reach net zero in 25 years.<sup>114</sup>

**ii. The environmental setting is predicated on the flawed assumption that climate change will lead to greater fire severity.**

The CEQA Guidelines require that an EIR “demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context.”<sup>115</sup> The PEIR fails to provide a scientific basis for the assumption that anthropogenic climate change will result in an increase in wildfire severity, thus justifying vegetation treatments that will ostensibly reduce the incidence and severity of wildfires.<sup>116</sup>

The assumption that vegetation treatment will reduce the incidence and severity of wildfires is flawed, rendering the discussion of environmental setting inadequate. As detailed elsewhere in these comments, while scientific evidence suggests that anthropogenic climate change is contributing to a longer fire season and more acres burned in California, scientific studies have not found significant trends in fire severity in California’s forests in terms of proportion, area, and/or patch size, including recent studies by Picotte et al. 2016 (California forest and woodland) and Keyser and Westerling 2017 (California forests).<sup>117</sup> Most recently, Keyser and Westerling (2017) tested trends for high severity fire occurrence for western United States forests, for each state and each month. The study found no significant trend in high severity fire occurrence during 1984-2014, except for Colorado. The study also found no significant increase in high severity fire occurrence by month during May through October, and no correlation between fraction of high severity fire and total fire size. Furthermore, Parks et al. (2016) projected that even in hotter and drier future forests, there will be a decrease or no change

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<sup>112</sup> Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C*, An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018).

<sup>113</sup> Intergovernmental Panel on Climate Change, *Global warming of 1.5°C*. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018) at SPM-15.

<sup>114</sup> Intergovernmental Panel on Climate Change, *Global warming of 1.5°C*. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018) at SPM-15.

<sup>115</sup> CEQA Guidelines § 15125(c)

<sup>116</sup> PEIR at 3.8-8.

<sup>117</sup> Picotte, J.J. et al., 1984-2010 trends in fire burn severity and area for the coterminous US, 25 *International Journal of Wildland Fire* 413 (2016); Keyser, A. and A.L. Westerling, Climate drives inter-annual variability in probability of high severity fire occurrence in the western United States, 12 *Environmental Research Letters* 065003 (2017).

in high-severity fire effects in nearly every forested region of the western U.S., including California, due to reductions in combustible understory vegetation over time.<sup>118</sup>

**iii. The environmental setting fails to address evidence that mechanical treatments generate more greenhouse gas emissions than wildfires.**

As stated above, the CEQA Guidelines require that an EIR analyze environmental impacts in light of “the full environmental context” in which the project will take place.<sup>119</sup> In its description of the environmental setting against which greenhouse gas (GHG) emissions will take place, the PEIR impermissibly fails to disclose important scientific studies that demonstrate that the PEIR’s estimates of the carbon emissions produced by wildfire in California are large overestimates, and that tree harvest and thinning are a much larger source of carbon emissions than wildfire in the state. The Board has an obligation to disclose these studies<sup>120</sup> Further, these omissions hinder an accurate assessment of the GHG emissions impacts of massively ramping up vegetation thinning treatments in the state, as proposed by the CALVTP.

First, the PEIR fails to acknowledge scientific studies showing that carbon emissions in California, and across the U.S., from tree harvest and thinning are much higher than the emissions from wildfire, bark beetles, or drought. Berner et al. (2017) reported that logging was the largest cause of tree mortality in California forests between 2003 and 2012, followed by wildfire and then bark beetles.<sup>121</sup> Furthermore, Harris et al. (2016) reported that between 2006 and 2010 logging was responsible for 60% of the carbon losses from California’s forests, compared to 32% from wildfire.<sup>122</sup> This is because wildfire consumes only a minor percentage of forest carbon while improving availability of key nutrients and stimulating rapid forest regeneration. When trees die from drought and native bark beetles, no carbon is consumed or emitted initially, and carbon emissions from decay are small and slow; meanwhile, decaying wood keeps forest soils productive and enhances carbon sequestration capacity over time. In contrast, logging and thinning results in a large net loss of forest carbon storage, and a substantial overall increase in carbon emissions that can take decades, if not a century, to recapture with regrowth.<sup>123</sup>

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<sup>118</sup> Parks, S.A. et al., How will climate change affect wildland fire severity in the western US? 11 Environmental Research Letters 035002 (2016).

<sup>119</sup> [CEQA Guidelines § 15125\(c\)](#).

<sup>120</sup> *Madera Oversight Coalition, Inc. v County of Madera* 199 Cal. App 4th 48, 104 & FN 32 (2011), overruled on other grounds in *Neighbors for Smart Rail v Exposition Metro Line Constr. Auth.* (2013) 57 C4th 439.

<sup>121</sup> Berner, Logan T. et al., Tree mortality from fires, bark beetles, and timber harvest during a hot and dry decade in the western United States (2003-2012), 12 Environmental Research Letters 065005 (2017).

<sup>122</sup> Harris, N.L. et al., Attribution of net carbon change by disturbance type across forest lands of the conterminous United States, 11 Carbon Balance and Management 24 (2016).

<sup>123</sup> Searchinger, T.D. et al., Fixing a critical climate accounting error, 326 Science 527 (2009); Hudiburg, T.W. et al., Regional carbon dioxide implications of forest bioenergy production, 1 Nature Climate Change 419 (2011); Campbell, J.L. et al., Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? 10 Frontiers in Ecology and Environment 83 (2012); Holtmark, Bjart, The outcome is in the assumptions: Analyzing the effects on atmospheric CO<sub>2</sub> levels of increased use of bioenergy from forest biomass, 5 GCB Bioenergy 467 (2012); Mitchell, S.R. et



Secondly, the PEIR fails to disclose that its estimates of wildfire carbon emissions in the state are significant over-estimates due to the use of invalid modeling assumptions, as described most recently by Stenzel et al. (2019).<sup>124</sup> These carbon accounting errors undermine the CALVTP's approach to wildfire and vegetation management and corrupt the PEIR's analysis.

Stenzel et al. (2019) demonstrates that commonly-used models for estimating wildfire emissions typically significantly over-estimate these emissions by using unrealistic biomass combustion factors and failing to accurately quantify biomass in standing dead trees. The study highlights that commonly used models overestimate the wildfire emissions from California's carbon-dense forests by three-to-four times that of actual field-based values, based on reviewing Yosemite forests as a case study: "Our results illustrate that the use of inaccurate combustion coefficients in models can double forest fire emissions estimates across the western United States. Overestimates increase to three to four times in carbon-dense forests such as the YFDP [Yosemite Forest Dynamics Plot], mostly because models incorrectly combust live trees. Treating carbon released over years to centuries as an immediate emission by equating combustion with mortality is simply inaccurate. Omitting snag representation in models compounds this error, because of altered decay and combustion dynamics."<sup>125</sup> Stenzel et al. (2019) found that the largest discrepancies between modeled and observed combustion of aboveground biomass exist for live, mature trees, which are the dominant pool of aboveground carbon. While models estimate live tree stem combustion at 30%–80% in high-severity events, post-fire observations in the western United States indicate actual combustion is nearly nonexistent for mature trees in fire-prone ecosystems. Most models also lack standing dead tree carbon pools.

Stenzel et al. (2019) highlights California as an example where the government is making land management decisions based on faulty overestimates of wildfire emissions:

Contemporary CO<sub>2</sub> emissions to the atmosphere from fire are often significantly exaggerated because of public and policymaker misconceptions that forests commonly "burn to the ground" during fire and that mortality equals emissions. The reality is instead negligible stem combustion of live, mature trees (i.e., <5%), followed by gradual decomposition over years to centuries. Modeled estimates of fire emissions reinforce public misconceptions, as tree mortality is often mistranslated into 30%–80% of tree carbon emitted immediately and is in conflict with observations. It is important to rectify overestimates because governments are currently using mortality and emissions estimates from fire to inform land management decisions intended to mitigate climate change (California, Executive Department, 2018; ...).<sup>126</sup>

The PEIR fails to disclose that its wildfire emissions estimates suffer from the carbon accounting errors highlighted by Stenzel et al. (2019), and represent large overestimates of actual wildfire emissions in California. For example, the wildfire GHG emissions estimates reported in

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al., Carbon debt and carbon sequestration parity in forest bioenergy production, 4 Global Change Biology Bioenergy 818 (2012).

<sup>124</sup> Stenzel, Jeffrey E. et al., Fixing a snag in carbon emissions estimates from wildfires, Global Change Biology DOI: 10.1111/gcb.14716 (2019).

<sup>125</sup> Stenzel et al. (2019) at 7.

<sup>126</sup> Stenzel et al. (2019) at 1-2.

PEIR Table 3.8-2 are derived using the First Order Fire Effects Model (FOFEM) model developed by the U.S. Forest Service.<sup>127</sup> However, the FOFEM model has long been shown to significantly overestimate combustion and therefore wildfire emissions. For example, French et al. (2011) report field-data-based wildfire emissions results compared with FOFEM modeling results, finding that FOFEM over-estimated wildfire emissions generally by twofold to threefold (e.g., Biscuit fire, Boundary fire).<sup>128</sup>

The PEIR also reports estimates of carbon loss from natural and working lands between 2001 and 2014, concluding that the losses are primarily from wildfire<sup>129</sup> based on the Inventory of Ecosystem Carbon in California's Natural and Working Lands.<sup>130</sup> However, the Inventory makes the fundamental errors described in Stenzel et al. (2019) in calculating wildfire GHG emissions. Specifically, the LandFire model used by the Inventory classifies post-forest-fire vegetation categories as having less carbon than they actually do. First, the model does not account for the large stores post-fire carbon persisting in killed trees and other unburned fuels.<sup>131</sup> In practice, the model effectively assumes that when trees are killed, they are vaporized immediately and all the carbon goes into atmosphere, which is demonstrably incorrect. Second, the model makes broad assumptions about changes in vegetation categories based on LandFire satellite imagery (which the Inventory acknowledges leads to substantial vegetation category classification inaccuracy<sup>132</sup>) and the mean carbon density in each vegetation category. Significant wildfire emissions overestimates can occur when a mature forest that has high-intensity fire is reclassified as shrubland but still has large amounts of carbon stores in the snags and downed logs that are not counted.

In short, in failing to provide an accurate assessment the carbon emissions from wildfire and vegetation thinning in the state, the PEIR hinders an adequate assessment of the GHG emissions impacts of massively ramping up vegetation thinning treatments in the state, as proposed by the CALVTP.

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<sup>127</sup> California Air Resources Board, Estimation Methods,

<https://ww3.arb.ca.gov/cc/inventory/pubs/estimationmethods.pdf> (last visited Aug. 5, 2019).

<sup>128</sup> French, Nancy H.F. et al., Model comparisons for estimating carbon emissions from North American wildland fire, 116 *Journal of Geophysical Research* G00K05 (2011).

<sup>129</sup> PEIR at 3.8-2 (“It is estimated that California’s natural and working lands lost approximately 170 MMT of carbon between 2001 and 2014. Most of these losses were due to wildfire. This loss of carbon is equivalent to cumulative emissions of 630 MMTCO<sub>2</sub>e of previously sequestered carbon removed from the land over the same period (applying the atomic weight ratio of 3.67 for carbon to CO<sub>2</sub>).”)

<sup>130</sup> California Air Resources Board, An Inventory of Ecosystem Carbon in California’s Natural and Working Lands, 2018 Edition, [https://ww3.arb.ca.gov/cc/inventory/pubs/nwl\\_inventory.pdf](https://ww3.arb.ca.gov/cc/inventory/pubs/nwl_inventory.pdf) (last visited Aug. 5, 2019).

<sup>131</sup> California Air Resources Board, Technical Support Document for the Natural & Working Lands Inventory, December 2018 Draft, [https://ww3.arb.ca.gov/cc/inventory/pubs/nwl\\_inventory\\_technical.pdf](https://ww3.arb.ca.gov/cc/inventory/pubs/nwl_inventory_technical.pdf) (last visited Aug. 5, 2019), at 19 (“The fire-attributed stock changes account only for carbon contained in live and dead pools associated with the post-fire (e.g. 2012) vegetation type, and have no memory of the previous vegetation type, i.e. they do not account for potential post-fire carbon persisting in unburned fuels or in killed trees.”)

<sup>132</sup> California Air Resources Board, An Inventory of Ecosystem Carbon in California’s Natural and Working Lands, 2018 Edition, [https://ww3.arb.ca.gov/cc/inventory/pubs/nwl\\_inventory.pdf](https://ww3.arb.ca.gov/cc/inventory/pubs/nwl_inventory.pdf), at 47-48.

**iv. Compliance with Applicable Land Use Plans Is Not Evidence that the Program Will Reduce Greenhouse Gas Emissions, and the PEIR Fails to Consider that the CALVTP Will Conflict With Greenhouse Gas Emissions Reductions Plans.**

The PEIR would comply with the *2017 Scoping Plan*, the *Draft California 2030 Natural and Working Lands Climate Change Implementation Plan*, and the *California Forest Carbon Plan*. The latter two of these plans are fundamentally flawed and compliance with these two plans should not serve as the basis for a finding that implementation of the Program would not result in a cumulatively considerable contribution to climate change.

As detailed in comments from the Center and other groups, a large body of scientific evidence indicates that the management strategies outlined in the Forest Carbon Plan—massive increases in thinning/logging paired with burning of woody biomass in bioenergy facilities — will reduce (not increase) overall forest carbon storage and lead to higher greenhouse gas emissions in the state.<sup>133</sup> That comment letter is hereby incorporated by reference.

The Natural and Working Lands Climate Change Implementation Plan calls for similarly massive increases in mechanical thinning and other treatment types that will decrease forest carbon sequestration and increase greenhouse gas emissions. As detailed in a comment letter from the Center, the CALAND model upon which this plan is predicated is plagued with methodological issues that render it incapable of accurately evaluating the carbon consequences of particular management interventions.<sup>134</sup> The model also fails to even consider conservation-based forest management strategies. The PEIR itself acknowledges that the CALAND model is incapable of adequately assessing the carbon impacts of the treatment activities set forth in the Program.<sup>135</sup>

As such, it is inaccurate to claim, as the PEIR does, that compliance with these two plans will help “reduce GHG emissions and increase carbon sequestration” and therefore have a less than significant impact. Rather, Cal Fire should reevaluate the flawed assumption that treatment types such as mechanical thinning result in net GHG emissions reductions.

Further, the PEIR fails to consider that the Program is inconsistent with other state plans. Increased removals of carbon from forests and increased operational CO<sub>2</sub> emissions over the next 10 years will likely conflict with science-driven greenhouse gas reduction goals established in the 2017 Scoping Plan, Executive Order B-30-15, and Executive Order S-3-05. IN particular, the 2017 Scoping Plan states, “California’s forests should be healthy carbon sinks that minimize black carbon emissions where appropriate, supply new markets for woody waste and

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<sup>133</sup> The following letter is hereby incorporated by reference: Letter from Center for Biological Diversity et al. to Forest Carbon Action Team, c/o California Department of Forestry and Fire Protection (Mar. 17, 2017).

<sup>134</sup> The following letter is hereby incorporated by reference: Letter from Center for Biological Diversity to California Air Resources Board and California Natural Resources Agency (Oct. 30, 2017).

<sup>135</sup> PEIR at p. 3.8-11.

non-merchantable timber, and provide multiple ecosystem benefits.”<sup>136</sup> Furthermore, Executive Order S-3-05 set a statewide greenhouse gas emissions reduction target of 1990 levels by 2020, and Executive Order B-30-15 set the greenhouse gas target of 40% below 1990 levels by 2030. And while none of these referenced plans set a specific numerical target for forest carbon, removals of carbon from forests and resulting CO<sub>2</sub> emissions need to be evaluated in light of these targets and cannot be ignored.

**v. The PEIR’s analysis of the significance of impacts from greenhouse gas emissions is flawed.**

The PEIR acknowledges that GHG emissions from treatment activities pose a potentially significant and unavoidable impact.<sup>137</sup> Treatment activities alone will emit approximately 4,051 million metric tons of GHGs. The potential for these activities to reduce forest sequestration indicate the GHG emissions implications of the Program may be much higher. The PEIR’s analysis of the impacts from GHG emissions is inadequate because it (1) fails to identify a clear and consistent baseline against which to measure impacts, (2) fails to consider that treatment activities will negatively impact the forest’s ability to sequester carbon, and (3) neglects to analyze all reasonably foreseeable emissions that will stem from the Program.

**1. The PEIR’s analysis of impacts from greenhouse gas emissions fails to identify a clear and consistent baseline against which to measure its impacts.**

The PEIR’s analysis of impacts of greenhouse gas emissions is predicated on the assumption that climate change will lead to greater fire severity and that the treatment activities outlined in the Program will reduce the incidence of future wildfires. As detailed at length elsewhere in these comments, neither assumption is correct.

The CEQA Guidelines make clear that impacts must be evaluated against the physical environmental conditions that exist when the project is undertaken.<sup>138</sup> A lead agency may use projected future conditions as baseline for analysis “only if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision-makers and the public.”<sup>139</sup> CALFIRE has not met that burden here.

CALFIRE may not measure the impacts of the Program against the hypothetical future scenario of GHG emissions reductions stemming from treatment activities first because there is not substantial evidence that these activities will actually reduce GHG emissions and second because CALFIRE has failed to demonstrate that measuring the impacts of the Project against the existing physical baseline is misleading or without informative value. In addition, as

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<sup>136</sup> See CAL. AIR RES. BD., CALIFORNIA’S 2017 CLIMATE CHANGE SCOPING PLAN: THE STRATEGY FOR ACHIEVING CALIFORNIA’S 2030 GREENHOUSE GAS TARGETS, Nov. 2017 at E-S 13, available at [https://ww3.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf/](https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf/)

<sup>137</sup> PEIR at 3.8-17.

<sup>138</sup> CEQA Guidelines § 15125(a)(1); see also *Neighbors for Smart Rail v Exposition Metro Line Constr. Auth.* (2013) 57 Cal. App. 4th 439, 447.

<sup>139</sup> CEQA Guidelines § 15125(a)(2).

described elsewhere, a vague appeal to long-term future emissions reductions is inconsistent with the timeline of state, federal, and international climate goals.

Further, the use of a qualitative threshold of significance of violates CEQA. The CEQA Guidelines provide that a lead agency’s choice of threshold of significance must be “based to the extent possible on scientific and factual data.”<sup>140</sup> A qualitative predicated on flawed assumptions about the impacts of treatment activities on wildlife incidence and severity is not based on scientific and factual data. Rather, the PEIR should use the numerical thresholds of significance established by air districts for land use development and stationary and non-stationary sources of air emissions.<sup>141</sup>

## **2. The PEIR fails to adequately consider that the reduction in forest carbon stocks may result in net greenhouse gas emissions increase.**

The PEIR does not adequately consider the potential for the CALVTP’s vastly increased vegetation treatment operations to reduce forest carbon stocks in the short term without guaranteeing increased carbon sequestration in the future. Vegetation reduction projects will definitively decrease carbon in the short-term with no scientifically-based guarantee—or at the very least a high probability—that the short-term losses will result in long-term carbon benefits. This is inconsistent with California’s regulations and climate goals. Consequently, the Project will generate greenhouse gas emissions that will both have a significant effect on the environment and impede California’s ability to meet its climate goals.

The PEIR is incorrect in asserting that the “long-term” is the most relevant timeframe for evaluating the carbon consequences of the VTP. As highlighted by the IPCC’s *Special Report on Global Warming of 1.5°C*, global GHG emissions must be cut in half over the next decade to avoid catastrophic harms from climate change. Furthermore, Executive Order B-30-15 and Senate Bill 32 establish important GHG reduction target for California of 40 percent below 1990 levels by 2030. These targets require increasingly steep reductions in emissions over the coming decade. Yet this is precisely the time period during which the carbon emitted from the CALVTP will increase atmospheric CO<sub>2</sub> levels without any guarantee of reduced emissions in the longer-term. At a time when emissions must be dramatically reduced, the CALVTP will lead to significant carbon emissions that we cannot afford and which would undermine California’s climate goals.

## **3. The PEIR impermissibly fails to analyze the greenhouse gas emissions impacts from biomass hauling and processing.**

As detailed above in Section 5.A.ii.1 , biomass hauling and processing is indisputably a part of the “one large project” that constitutes the Program for the purposes of CEQA review.<sup>142</sup> However, the PEIR impermissibly declines to analyze them.<sup>143</sup> The greenhouse gas emissions

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<sup>140</sup> CEQA Guidelines § 15064(b).

<sup>141</sup> PEIR at 3.8-9.

<sup>142</sup> 14 Cal. Code Regs. § 15168(a)

<sup>143</sup> PEIR at 3.8-12.

impacts from those activities are reasonably foreseeable and therefore must be analyzed in the PEIR.

As discussed above, the location of biomass facilities in relation to treatment areas is reasonably foreseeable. And, like emissions of criteria pollutants, emissions of greenhouse gases from these facilities are reasonably foreseeable. The California statewide greenhouse gas inventory reports biogenic CO<sub>2</sub> emissions from electricity generation.<sup>144</sup> The Mandatory Reporting Regulation (“MRR”) program, data from which are used to generate the state’s inventory, specifically requires reporting of biomass GHG emissions.<sup>145</sup> Additionally, biomass facilities must disclose anticipated GHG emissions in their air permit applications.<sup>146</sup> These impacts are significant—at the stack, biomass facilities emit more GHGs than fossil-fuel combustion—and the PEIR should analyze them.<sup>147</sup>

#### **4. The PEIR impermissibly fails to analyze the greenhouse gas emissions from pile burning.**

As detailed above in Section 5.A.ii.2., Appendix AQ-1 fails to analyze emissions impacts from pile burning, with absolutely no justification. These emissions are part of the CALVTP’s “one large project,” are significant, and must be evaluated in the PEIR.

### **C. The PEIR Fails to Adequately Analyze and Mitigate Impacts to Biological Resources.**

The Biological Resources impacts and mitigation analysis in the PEIR is deficient in a number of ways, including (1) failing to set a clear and consistent baseline; (2) failing to appropriately assess and mitigate impacts to (i) special-status species; (ii) natural communities and oak wildlands; (iii) riparian habitats; (iv) riparian habitats; (v) chaparral and sage scrub habitats; and (vi) wildlife connectivity.

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<sup>144</sup> California Air Resources Board, California Greenhouse Gas Inventory for 2000-2015 — by IPCC Category at 6 (updated June 22, 2018) (“California Inventory”), *available at* [https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_ipcc\\_sum\\_2000-16.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-16.pdf) (visited Nov. 13, 2018). The national inventory produced by U.S. EPA similarly “counts” biomass CO<sub>2</sub>, although it uses the IPCC convention of “counting” those emissions in the Land Use, Land Use Change, and Forestry sector rather than in the Energy sector. See U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 - 2017 (EPA 430-P-17-001) at ES-7, 2-12 (2019) (“EPA GHG Inventory 1990 -2017”), *available at* [https://www.epa.gov/sites/production/files/2017-02/documents/2017\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf) (visited July 26, 2017).

<sup>145</sup> 17 Cal. Code Regs., §§ 95101(b)(4), 95103(a)(2), (j).

<sup>146</sup> See e.g. County of Mariposa, CEQA Initial Study for Mariposa Biomass Project Conditional Use Permit CUP 2017-117 (2018), *available at* <https://www.mariposacounty.org/DocumentCenter/View/63721/CUP-2017-117-MARIPOSA-BIOMASS-CEQA-INITIAL-STUDY-SUBSEQUENT-MND> at p. 76.

<sup>147</sup> Bird, David Neil et al., Zero, one, or in between: evaluation of alternative national and entity-level accounting for bioenergy, 4 *Global Change Biology Bioenergy* 576 (2012), doi:10.1111/j.1757-1707.2011.01137.x, at 584.

**i. The PEIR’s environmental setting is inadequate.**

The CEQA guidelines provide that an EIR “must include a description of the physical environmental conditions in the vicinity of the project. The environmental setting will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant.”<sup>148</sup>

The PEIR fails to identify any clear and consistent baseline against which the Program’s impacts to biological resources can be evaluated. The PEIR contains a brief, general discussion of the environmental and regulatory setting for the Program, but it does not contain any of the information about existing physical conditions necessary to evaluate the Program’s biological impacts.<sup>149</sup>

**ii. The PEIR fails to appropriately assess impacts to special-status animals and plants due to treatment activities, and mitigation measures are vague, inadequate, not based on the best available science, and improperly deferred.**

The PEIR fails to adequately assess and mitigate impacts to special-status species to less than significant. California is a biodiversity hotspot, with many special-status, endemic, and rare animals and plants. Thus, a statewide program that would impact over 50 pages of special-status animals and plants<sup>150</sup> should adequately assess the potential impacts to these species and provide clear measures and requirements to avoid, minimize, and mitigate impacts to these biological resources due treatment activities. However, the PEIR fails to do so.

For example, over a million acres of critical habitat for various federally endangered and threatened mammals, birds, reptiles, amphibians, fish, invertebrates, and plants<sup>151</sup> will be impacted by treatment activities. Just a few examples of the extent of impacts to federally threatened or endangered species due to treatment activities include the destruction or adverse modification of more than 500,000 acres of critical habitat for California red-legged frog (*Rana draytonii*), over 200,000 acres of critical habitat for California condor (*Gymnogyps californianus*), over 100,000 acres of critical habitat for Alameda whipsnake (*Masticophis lateralis euryxanthus*), and over 30,000 acres of critical habitat for fleshy owl’s clover (*Catilleja campestris ssp. succulenta*). These species are garnered added protections and designated critical habitat because their extinction is imminent or impending without more careful management of their habitats. Yet the PEIR dismisses and downplays the importance of designated critical habitat and the severity of the impacts to special-status species due to treatment activities, stating that, “Critical habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. A critical habitat designation only affects activities performed by Federal agencies or that involve a Federal permit, license, or funding, and that are likely to

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<sup>148</sup> CEQA Guidelines § 15125(a)(1); see also *Neighbors for Smart Rail v Exposition Metro Line Constr. Auth.* (2013) 57 Cal.4th 439, 447.

<sup>149</sup> See, e.g., *Save Our Peninsula Comm. v. Monterey Cty. Bd. of Supervisors*, 87 Cal. App. 4th 99, 119 (2001) (“Without a determination and description of the existing physical conditions on the property at the start of the environmental review process, the EIR cannot provide a meaningful assessment of the environmental impacts of the proposed project.”).

<sup>150</sup> see PEIR Appendix BIO-3

<sup>151</sup> see PEIR Appendix BIO-4

destroy or adversely modify the area of critical habitat. CALFIRE , as a state agency, is not required to consult with USFWS for actions within critical habitat.”<sup>152</sup> The PEIR should more clearly state that critical habitat includes areas that were currently occupied by the species at the time of listing (and potentially still are occupied) and contain features essential to the conservation of the species. Such disregard for large amounts of designated critical habitat for numerous federally threatened and endangered species exhibits the failure of the PEIR to adequately assess and mitigate impacts to special-status species to less than significant.

Further, the PEIR fails to adequately mitigate impacts to special-status species to less than significant and fails to comply with SB 85. SPR BIO-1 only requires the project proponent have a qualified registered professional forester (RPF) or biologist to conduct data reviews and reconnaissance-level surveys prior to treatment; however, if suitable habitat for sensitive biological resources is documented in the project area, the SPR does not provide an adequate requirement that federal, state, or local agencies be consulted to determine whether impacts due to treatment activities can be avoided or minimized or if impacts are unavoidable. The PEIR only states that, if suitable habitat is present, the project proponent, in consultation with a qualified RPF or biologist, will determine if adverse impacts can be avoided.<sup>153</sup> And if the project proponent deems that suitable habitat is present and adverse effects cannot be clearly avoided, the PEIR states that “[f]urther review may include contacting USFWS, NOAA Fisheries, CDFW, CNPS, or local resource agencies as necessary to determine the potential for special-status species or other sensitive biological resources to be affected by the treatment activity” (*Id.*). This is inconsistent with SB 85, which states, “When selecting a fuel reduction project, the department shall collaborate with the State Water Resources Control Board and the Department of Fish and Wildlife to ensure the design of the fuel reduction project protects water resources and wildlife habitat while addressing fire behavior and public safety.”<sup>154</sup> Additionally, according to SPR BIO-1, “[f]ocused or protocol-level surveys will be conducted as necessary to determine presence/absence.”<sup>155</sup> Stating that such surveys will be conducted “as necessary” is vague and insufficient to minimize impacts to sensitive biological resources. Focused and protocol-level surveys should be required when special-status animals or plants are present or potentially present to determine potential impacts to these resources from treatment activities. The project proponent should comply with SB 85 and consult with CDFW and SWRCB, and they should also be required to consult with other appropriate federal, state, and local agencies, including but not limited to USFWS, NOAA Fisheries, and CNPS, when special-status animals and plants are present or potentially present or when designated critical habitat is present in the project area.

SPR BIO-10 constitutes improperly deferred mitigation and similarly violates SB 85. If SPR- BIO-1 determines that there is suitable habitat for special-status wildlife is present and cannot be avoided, “the project proponent will require a qualified RPF or biologist to conduct focused or protocol-level surveys for special-status wildlife species or nursery sites (e.g., bat maternity roosts, deer fawning areas, heron or egret rookeries) with potential to be directly or indirectly affected by a treatment activity. The survey area will be determined by a qualified RPF or biologist based on the species and habitats and any recommended buffer distances in agency protocols. The qualified RPF or biologist will determine if following an established protocol is

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<sup>152</sup> PEIR at 3.6-17

<sup>153</sup> PEIR at 3.6-119

<sup>154</sup> Senate Bill 85 (2019) (amending Sections 21 and 412 of the Public Resources Code)

<sup>155</sup> PEIR at 3.6-119



required, and the project proponent may consult with CDFW and/or USFWS for technical information regarding appropriate survey protocols.”<sup>156</sup> Not only does the SPR not comply with SB 85 and require consultation with CDFW and SWRCB, but it also leaves mitigation measures such as buffer distance to be determined at a later date, without providing substantive or quantified measures to mitigate adverse impacts. This amounts to deferred mitigation. Mitigation measures for treatment activities must be considered in the PEIR in order for the proper environmental analysis to take place.<sup>157</sup> Otherwise, the public and decisionmakers are unable to evaluate the effectiveness of the plans in avoiding, minimizing, and mitigating the impacts from treatment activities.

In the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the EIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan.<sup>158</sup> Here, the PEIR fails to provide specific criteria and adequate mitigation measures to be considered, analyzed, and possibly incorporated to minimize impacts to special-status species due to treatment activities.

The following sections further discuss the PEIR’s inadequacies at effectively avoiding, minimizing, and mitigating impacts to special-status animals and plants and the habitats they rely on for survival and long-term persistence to less than significant.

**iii. The PEIR fails to appropriately assess impacts to sensitive natural communities and oak woodlands due to treatment activities, and mitigation measures are vague, inadequate, not based on the best available science, and improperly deferred.**

The PEIR fails to appropriately assess and adequately mitigate the impacts of treatment activities on sensitive natural communities, including oak woodlands. California has lost over a million acres of oak woodlands since 1950,<sup>159</sup> and at least another 3,786,501 acres of oak woodlands and blue oak foothill pine woodlands throughout the state will be impacted by the PEIR’s treatment activities. This is alarming because oak woodlands and other wooded areas, such as pine forests and riparian woodlands, provide valuable habitat and connectivity for a wide variety of species.<sup>160</sup> In fact, the PEIR states that “[o]ak woodlands provide important habitat to

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<sup>156</sup> PEIR at 3.6-124

<sup>157</sup> See *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1396 [it is improper for the EIR to “require the applicant to comply with any recommendations of a report that had yet to be performed”]; *Sundstrom v. Co. of Mendocino* (1988) 202 Cal.App.3d 296.

<sup>158</sup> See *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736-37 [review denied]

<sup>159</sup> Bolsinger, Charles L., *The hardwoods of California's timberlands, woodlands, and savannas*, U.S. Forest Service Pacific Northwest Research Station, Resource Bulletin PNW-RB-148 (1988).

<sup>160</sup> Bernhardt, Elizabeth & Tedmund Swiecki, *Ecological importance of California oak woodlands*, in *Restoring Oak Woodlands in California: Theory and Practice* (2001), <http://phytosphere.com/restoringoakwoodlands/oakrestoration.htm>; Jedlicka, Julie A. et al., *Vineyard and*

numerous common and special-status wildlife species supporting some 5,000 species of insects, over half of the state's 662 species of terrestrial vertebrates, and several thousand plant taxa (CDFW 2015a, McCreary 2009).<sup>161</sup>

Not only do oak woodlands provide important habitat for numerous species, they also play a critical role in maintaining important water resources (*i.e.*, for drinking water and agriculture). Reduced forest and woodland cover has been shown to result in increased runoff (*i.e.*, pollutants such as pesticides and fertilizers flowing into groundwater and surface waterways), erosion, sedimentation, and water temperatures; changes in channel morphology; decreased soil retention and fertility; and decreased terrestrial and aquatic biodiversity.<sup>162</sup> In addition, forests and woodlands are important carbon sinks that can help moderate the impacts of climate change,<sup>163</sup> and some researchers argue that at a global scale, trees are linked to increased precipitation and water availability.<sup>164</sup>

Despite the importance of oak woodlands in supporting the state's unique biodiversity, maintaining overall ecosystem health and function, and combatting climate change, the PEIR fails to adequately assess and mitigate impacts due to treatment activities. There is no SPR specific to avoiding or minimizing impacts to oak woodlands. As mentioned previously, SPR

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riparian habitat, not nest box presence, alter avian community composition, 126 *The Wilson Journal of Ornithology* 1:60 (2014); Lawrence, Justin E. et al., Effects of vineyard coverage and extent on benthic macroinvertebrates in streams of Northern California, 47 *Ann. Limnol. - Int. J. Lim.* 347 (2011); Napa County, Biological Resources, Ch. 4 in *Napa County Baseline Data Report Version 1* (November 30, 2005); Tietje, William D. et al., Bat activity at remnant oak trees in California central coast vineyards, USDA Forest Service General Technical Report PSW-GTR-251 (2015).

<sup>161</sup> PEIR at 3.6-20

<sup>162</sup> Brown, George W. & James T. Krygier, Effects of clear-cutting on stream temperature, 6 *Water Resources Research* 4 (1970); Pess, George R. et al., Landscape characteristics, land use, and coho salmon (*Onchorhynchus kisutch*) abundance, Snohomish River, Wash., U.S.A., 59 *Can. J. fish. Aquat. Sci.* 613 (2002); Dahlgren, Randy A. et al., Blue oak enhance soil quality in California oak woodlands, 57 *California Agriculture* 2 (2003); Houlahan, Jeff E. & C. Scott Findlay, Estimating the 'critical' distance at which adjacent land-use degrades wetland water and sediment quality, 19 *Landscape Ecology* 677 (2004); Opperman, Jeffrey J. et al., Influence of land use on fine sediment in salmonid spawning gravels within the Russian River Basin, California, 62 *Can. J. Fish. Aquat. Sci.* 2740 (2005); Lohse, Kathleen A. et al., Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning, 18 *Ecological Applications* 2: 467 (2008); Elliot, William J., Effects of forest biomass use on watershed processes in the Western United States, 25 *West. J. Appl. For.* 1 (2010); Lawrence, Justin E. et al., Effects of vineyard coverage and extent on benthic macroinvertebrates in streams of Northern California, 47 *Ann. Limnol. - Int. J. Lim.* 347 (2011); Moyle, Peter B. et al., Rapid decline of California's native inland fishes: A status assessment, 144 *Biological Conservation* 2414 (2011); Zhang, H. & K.M. Hiscock, Modelling the effect of forest cover in mitigating nitrate contamination of groundwater: A case study of the Sherwood Sandstone aquifer in the East Midlands, UK, 399 *J. of Hyrdology* 212 (2011); Jedlicka, Julie A. et al., Vineyard and riparian habitat, not nest box presence, alter avian community composition, 126 *The Wilson Journal of Ornithology* 1:60 (2014).

<sup>163</sup> Padilla, Francisco, M. et al., Land-use changes and carbon sequestration through the twentieth century in a Mediterranean mountain ecosystem: Implications for land management, 91 *J. of Environ. Mgmt.* 2688 (2010); Pan, Yude et al., A large and persistent carbon sink in the world's forests, 333 *Science* 988 (2011).

<sup>164</sup> Ellison, David et al., On the forest cover-water yield debate: from demand-to-supply-side thinking, 18 *Global Change Biology* 806 (2012).

BIO-1 is vague, inadequate, and fails to comply with SB 85, as it only requires the project proponent have a qualified registered professional forester (“RPF”) or biologist to conduct data reviews and reconnaissance-level surveys prior to treatment, and if suitable habitat for sensitive biological resources is documented in the project area, the SPR does not provide an adequate requirement that federal, state, or local agencies be consulted to determine whether impacts due to treatment activities can be avoided or minimized or if impacts are unavoidable. The project proponent should comply with SB 85 and consult with CDFW and SWRCB, and they should also be required to consult with other appropriate federal, state, and local agencies, including but not limited to USFWS, NOAA Fisheries, and CNPS, when oak woodlands are present or potentially present in the project area. Additionally, focused and protocol-level surveys should be required when sensitive biological resources like oak woodlands are present or potentially present to determine potential impacts to these resources from treatment activities, which is not clear under the vague language of SPR BIO-1, which states that “[f]ocused or protocol-level surveys will be conducted as necessary to determine presence/absence.”<sup>165</sup>

In addition to inadequate SPRs, mitigation measures for impacts to oak woodlands due to treatment activities are vague, inadequate, not based on the best available science, and improperly deferred. In MM BIO-3a, the PEIR fails to require consultation with USFWS, CDFW, NOAA, or other federal, state, or local agencies, to determine whether the project proponents’ treatment design and mitigation measures are sufficient to minimize impacts to sensitive natural communities like oak woodlands to less than significant. MM BIO-3a states that only a qualified RFB or botanist will review the design. In addition, no science is provided to support the notion that limiting fuel breaks in oak woodlands to removing 20% of the native vegetation would be effective at minimizing impacts to oak woodlands or reducing the risk of wildfire to structures and human communities. In addition, the PEIR points to compensatory mitigation provided in MM BIO-3b if significant impacts are unavoidable, with the caveat that no compensatory would be required if treatment activities benefit oak woodlands. However, the PEIR fails to require consultation with federal, state, and local agencies when determining the severity of impacts to oak woodlands. The PEIR also fails to provide scientific evidence that supports the potential benefits of such treatments.

The PEIR states that the acreage of lost oak woodland will be restored/enhanced or preserved through a conservation easement at a “sufficient ratio to offset the loss of acreage and habitat function”<sup>166</sup> without differentiating between the type of compensatory mitigation (*i.e.*, preserved intact habitats vs. enhanced or restored habitats). If compensatory mitigation includes enhanced or restored habitats, higher mitigation ratios coupled with extended years of effective monitoring and adaptive management strategies are needed to improve chances of establishing equivalent ecological function as the lost habitat.<sup>167</sup> Given the importance of oak woodlands to numerous species and ecosystem function, mitigation ratios should be, at a minimum, 3:1 for

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<sup>165</sup> PEIR at 3.6-119

<sup>166</sup> PEIR at 3.6-147

<sup>167</sup> Sudol, Mark F. & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA*, 30 *Environmental Management* 5: 727 (2002); Matthew, Jeffrey W. & Anton G. Endress, *Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands*, 41 *Environmental Mgt* 130 (2008); Stein, Bruce A. et al., *Reversing America's wildlife crisis: Securing the future of our fish and wildlife*, National Wildlife Federation (2018).

preserved oak woodlands and 5:1 for restored/enhanced oak woodlands. Santa Barbara County's Deciduous Oak Tree Protection and Regeneration Ordinance requires a 15:1 mitigation ratio (via replacement planting or protection of naturally occurring oaks between six inches and six feet tall) for removed oak trees.<sup>168</sup> With one third of America's plant and animal species vulnerable to impacts from human activity and one fifth at risk of extinction,<sup>169</sup> it is crucial that strategies to prevent further degradation and loss of biodiversity are explicit and scientifically sound. The compensatory mitigation for oak woodlands described in the MM BIO-3b is vague and severely inadequate.

MM BIO-3b states that the project proponent will prepare a Compensatory Mitigation Plan, which amounts to improperly deferred mitigation. As mentioned previously, mitigation measures for treatment activities must be considered in the PEIR in order for the proper environmental analysis to take place.<sup>170</sup> Therefore, compensatory habitat mitigation and monitoring plans need to be included in the PEIR to enable the public and decisionmakers to evaluate the effectiveness of the plans in avoiding, minimizing and mitigating the impacts from treatment activities.

In the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the EIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan.<sup>171</sup> Here, the PEIR fails to provide specific performance criteria and adequate mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. And although the PEIR mentions long-term monitoring, the compensatory mitigation plan should also include adaptive management strategies, especially for habitats that are enhanced or restored, as it can take many years before enhanced/restored mitigation sites become as ecologically functional as the lost habitat.<sup>172</sup> The success of mitigation sites relies on the appropriate assessment of measurable performance standards based on habitat functions and adaptive management strategies.<sup>173</sup> The PEIR's mitigation measures should implement acquisition in perpetuity, long-term monitoring, and adaptive management strategies

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<sup>168</sup> County of Santa Barbara, Deciduous oak tree protection and regeneration, Article IX of Chapter 35 Santa Barbara County Code (June 2003).

<sup>169</sup> Stein, Bruce A. et al., *Reversing America's wildlife crisis: Securing the future of our fish and wildlife*, National Wildlife Federation (2018).

<sup>170</sup> See *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1396 [it is improper for the EIR to "require the applicant to comply with any recommendations of a report that had yet to be performed"]; *Sundstrom v. Co. of Mendocino* (1988) 202 Cal.App.3d 296.

<sup>171</sup> See *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736-37 [review denied]

<sup>172</sup> Sudol, Mark F. & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA*, 30 *Environmental Management* 5: 727 (2002); Ambrose, Richard et al., *An evaluation of compensatory mitigation projects permitted under Clean Water Act Section 401 by the California State Water Quality Control Board, 1991-2002*, Report prepared by California State Water Resources Control Board (2006); Bronner, Colleen E. et al., *An assessment of U.S. stream compensatory mitigation policy: Necessary changes to protect ecosystem functions and services*, 49 *J. of the American Water Resources Assoc.* 2 (2013).

<sup>173</sup> Matthew, Jeffrey W. & Anton G. Endress, *Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands*, 41 *Environmental Mgt* 130 (2008).

to minimize adverse impacts to oak woodlands and associated biological resources. By not readily providing compensatory management plans or a list of adequate, concrete mitigation measures to be considered, the PEIR violates CEQA.

The state cannot afford to lose more of its valuable oak woodlands. Removing or degrading important habitats like oak woodlands without applying the best available science to minimize adverse impacts will lead to more erosion, sedimentation, reduced water quality, and degraded habitats while ramping up climate change by releasing more carbon into the atmosphere. The PEIR's finding that significant impacts to oak woodlands will be mitigated to less than significant is not supported by the facts and fails to meet CEQA's requirements.

**iv. The PEIR fails to appropriately assess impacts to riparian habitats due to treatment activities, and mitigation measures are vague, inadequate, not based on the best available science, and improperly deferred.**

It is estimated that 90-95% of historic riparian habitat in the state has been lost; Southern California and the Central Valley have already lost over 97% and 95% of its historic riparian systems, respectively.<sup>174</sup> Using 2002 land cover data from CALFIRE, the Riparian Habitat Joint Venture estimated that riparian vegetation makes up less than 0.5% of California's total land area at about 360,000 acres.<sup>175</sup> According to the PEIR, at least 179,286 acres of riparian habitat (about half of the remaining riparian areas) would be impacted by treatment activities. This is alarming because riparian habitats perform a number of biological and physical functions that benefit wildlife, plants, and humans, and loss of what little is left will have severe, harmful impacts on special-status species, overall biodiversity, and ecosystem function.

Riparian habitats are transitional areas between terrestrial and aquatic habitats, and they support numerous special-status flora and fauna and maintain a high level of biodiversity. In fact, 60% of amphibian species, 16% of reptiles, 34% of birds and 12% of mammals in the Pacific Coast ecoregion depend on riparian-stream systems for survival.<sup>176</sup> The PEIR states that "a total of 545 amphibians, reptiles, birds, and mammals in California ... utilize riparian habitats, including 67 species that are listed as threatened or endangered under ESA or CESA,"<sup>177</sup> which is likely an underestimate. Many species, including mountain lions and bobcats, often use riparian areas and natural ridgelines as migration corridors or foraging habitat.<sup>178</sup> Given the

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<sup>174</sup> Bowler, Dr. Peter A., Riparian Woodland: An endangered habitat in Southern California, Proceedings of the 15th Annual Symposium Southern California Botanists, Allan A. Schoenherr, editor, Special Publication No. 3 (1989); Griggs, F. Thomas, Ph.D., California riparian habitat restoration handbook 2d ed., Riparian Habitat Joint Venture (July 2009).

<sup>175</sup> Ballard, Grant et al., The riparian bird conservation plan: A strategy for reversing the decline of riparian associated birds in California, Riparian Habitat Joint Venture and California Partners in Flight (2004).

<sup>176</sup> Kelsey, K.A. & S.D. West, Riparian wildlife, in *River Ecology and Management*, R.J. Naiman and R.E. Bilby, eds. (1998).

<sup>177</sup> PEIR at 3.6-20

<sup>178</sup> Dickson, Brett et al., Influence of vegetation, topography, and roads on cougar movement in Southern California, 69 *J. of Wildlife Mgmt* 1: 264 (2005); Hilty, Jodi A. & Adina M. Merenlender, Use of riparian corridors and vineyards by mammalian predators in Northern California, 18 *Conservation Biology* 1: 126 (2004); Jennings, Megan & Rebecca Lewison, Planning for connectivity under climate change: Using bobcat movement to assess landscape connectivity across San Diego County's open spaces, San Diego State University (2013); Jennings, Megan & Katherine Zeller, Comprehensive multi-species connectivity

potentially threatened status of mountain lions in Southern California and along the Central Coast,<sup>179</sup> impacts to migration corridors like riparian areas should be more closely considered. Additionally, fish rely on healthy upland areas to influence suitable spawning habitat,<sup>180</sup> and over-aggressive removal of riparian areas have been identified as a major driver of declines in freshwater and anadromous fish.<sup>181</sup> Loss of biodiversity due to lack of habitat contributes to ecosystem degradation, which will diminish a multitude of ecosystem functions and services in the long-term.

As mentioned previously, reduced forest and woodland cover, including in riparian areas, has been shown to result in increased runoff (*i.e.*, pollutants such as pesticides and fertilizers flowing into groundwater and surface waterways), erosion, sedimentation, and water temperatures; changes in channel morphology; decreased soil retention and fertility; and decreased terrestrial and aquatic biodiversity.<sup>182</sup> In addition, forests and woodlands are important carbon sinks that can help moderate the impacts of climate change,<sup>183</sup> and some researchers argue that at a global scale, trees are linked to increased precipitation and water availability.<sup>184</sup> Thus, to preserve the state's valuable biodiversity in these habitats as well as water quality, it is important to preserve existing riparian areas as well as develop and implement effective buffer widths from streams and wetlands informed by the best available science.

Despite the importance of riparian habitats for overall biodiversity, ecosystem function, and wildlife migration, the PEIR fails to adequately mitigate impacts of treatment activities on these already-dwindling habitats. SPRs and mitigation measures to minimize impacts to riparian

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assessment and planning for the Highway 67 region of San Diego County, California, San Diego State University (2017).

<sup>179</sup> Yap, Tiffany et al., A petition to list the Southern California / Central Coast evolutionarily significant unit (ESU) of mountain lions as threatened under the California Endangered Species Act (CESA), Center for Biological Diversity and the Mountain Lion Foundation (June 25, 2019).

<sup>180</sup> Lohse, Kathleen A. et al., Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning, 18 *Ecological Applications* 2: 467 (2008).

<sup>181</sup> *e.g.*, Stillwater Sciences and Professor William Dietrich, Napa River Basin limiting factors analysis, Final Technical Report prepared for SFBWQCB and CSCC (2002); Lohse et al. 2008; Moyle et al. 2011

<sup>182</sup> Brown and Krygier 1970; Pess et al. 2002; Dahlgren et al. 2003; Houlahan and Findlay 2004; Opperman et al. 2005; Lohse, Kathleen A. et al., Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning, 18 *Ecological Applications* 2: 467 (2008); Elliot, William J., Effects of forest biomass use on watershed processes in the Western United States, 25 *West. J. Appl. For.* 1 (2010); Lawrence, Justin E. et al., Effects of vineyard coverage and extent on benthic macroinvertebrates in streams of Northern California, 47 *Ann. Limnol. - Int. J. Lim.* 347 (2011); Moyle, Peter B. et al., Rapid decline of California's native inland fishes: A status assessment, 144 *Biological Conservation* 2414 (2011); Zhang, H. & K.M. Hiscock, Modelling the effect of forest cover in mitigating nitrate contamination of groundwater: A case study of the Sherwood Sandstone aquifer in the East Midlands, UK, 399 *J. of Hyrdology* 212 (2011); Jedlicka, Julie A. et al., Vineyard and riparian habitat, not nest box presence, alter avian community composition, 126 *The Wilson Journal of Ornithology* 1:60 (2014).

<sup>183</sup> Padilla, Francisco, M. et al., Land-use changes and carbon sequestration through the twentieth century in a Mediterranean mountain ecosystem: Implications for land management, 91 *J. of Environ. Mgmt.* 2688 (2010); Pan, Yude et al., A large and persistent carbon sink in the world's forests, 333 *Science* 988 (2011).

<sup>184</sup> Ellison, David et al., On the forest cover-water yield debate: from demand-to-supply-side thinking, 18 *Global Change Biology* 806 (2012).

habitats are vague, insufficient, and not based in the best available science. As mentioned previously, SPR BIO-1 is vague, inadequate, and fails to comply with SB 85, as it only requires the project proponent have a qualified registered professional forester (RPF) or biologist to conduct data reviews and reconnaissance-level surveys prior to treatment, and if suitable habitat for sensitive biological resources is documented in the project area, the SPR does not provide an adequate requirement that federal, state, or local agencies be consulted to determine whether impacts due to treatment activities can be avoided or minimized or if impacts are unavoidable. Additionally, focused and protocol-level surveys should be required when sensitive biological resources like riparian habitats are present or potentially present to determine potential impacts to these resources from treatment activities, which is not clear under the vague language of SPR BIO-1, which states that “[f]ocused or protocol-level surveys will be conducted *as necessary* to determine presence/absence.”<sup>185</sup> The project proponent should comply with SB 85 and consult with CDFW and SWRCB, and they should also be required to consult with other appropriate federal, state, and local agencies, including but not limited to USFWS, NOAA Fisheries, and CNPS, when riparian areas are present or potentially present in the project area.

Although the PEIR states that SPR BIO-4 would require project proponents to “design treatments in riparian habitats to retain or improve habitat functions,”<sup>186</sup> the language is vague and does not provide any science to support the basis of their actions. No science is provided to support the notion that retaining 75% of overstory and 50% of understory canopy would retain or improve habitat function. Additionally, it is unclear how the project proponent will define or implement the retention of “well distributed multi-storied stand composed of a diversity of species similar to that found before the start of treatment activities,” how “removal of large, native riparian hardwood trees (e.g., willow, ash, maple, oak, alder, sycamore, cottonwood) will be minimized to the extent feasible,” or how “ground disturbance within riparian habitats will be limited to the minimum necessary to implement effective treatments” (*Id.*). This language is vague and unenforceable, and these measures do nothing to protect the form and function of riparian habitats. In addition, SPR BIO-4 states that “a different set of vegetation retention standards and protection measures ... may be implemented on a site-specific basis.... [and] implementation of different protection measures will only be approved when the treatment plan incorporates an evaluation of beneficial functions of the riparian habitat and with written concurrence from CDFW,”<sup>187</sup> which amounts to improperly deferred mitigation. In order to evaluate how the impacts will actually be avoided, minimized, and mitigated, the PEIR must provide adequate information on the required avoidance, minimization, and mitigation requirements that would be implemented in order for the public and decision makers to be able to evaluate the effectiveness of the current strategy.

If significant impacts to riparian habitats are deemed unavoidable, the PEIR points to compensatory mitigation provided in MM BIO-3c. However, the PEIR fails to require consultation with federal, state, and local agencies when determining the severity of impacts to riparian habitats. The PEIR is also vague, stating that the acreage of lost riparian habitat will be restored/enhanced or preserved through a conservation easement at a “sufficient ratio to offset the loss of riparian habitat function and value”<sup>188</sup> without differentiating between the type of

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<sup>185</sup> PEIR at 3.6-119

<sup>186</sup> PEIR at 3.6-120

<sup>187</sup> PEIR 3.6-121

<sup>188</sup> PEIR at 3.6-148

compensatory mitigation (*i.e.*, preserved intact habitats vs. enhanced or restored habitats). If compensatory mitigation includes enhanced or restored habitats, higher mitigation ratios coupled with extended years of effective monitoring and adaptive management strategies are needed to improve chances of establishing equivalent ecological function as the lost habitat.<sup>189</sup> Given the importance of riparian habitats to numerous species and ecosystem function, mitigation ratios should be, at a minimum, 3:1 for preserved riparian habitats and 5:1 for restored/enhanced riparian habitats. With one third of America's plant and animal species vulnerable to impacts from human activity and one fifth at risk of extinction,<sup>190</sup> it is crucial that strategies to prevent further degradation and loss of biodiversity are explicit and scientifically sound. The compensatory mitigation for oak woodlands described in the MM BIO-3c is vague and severely inadequate.

MM BIO-3c states that the project proponent will prepare a Compensatory Mitigation Plan, which amounts to improperly deferred mitigation. As mentioned previously, mitigation measures for treatment activities must be considered in the PEIR in order for the proper environmental analysis to take place.<sup>191</sup> Therefore, compensatory habitat mitigation and monitoring plans need to be included in the PEIR to enable the public and decisionmakers to evaluate the effectiveness of the plans in avoiding, minimizing, and mitigating the impacts from treatment activities.

In the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the EIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan.<sup>192</sup> Here, the PEIR fails to provide specific performance criteria and adequate mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. And although the PEIR mentions long-term monitoring, the compensatory mitigation plan should also include adaptive management strategies, especially for habitats that are enhanced or restored, as it can take many years before enhanced/restored mitigation sites become as ecologically functional as the lost habitat.<sup>193</sup> The success of mitigation

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<sup>189</sup> Sudol, Mark F. & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA*, 30 *Environmental Management* 5: 727 (2002); Ambrose, Richard et al., *An evaluation of compensatory mitigation projects permitted under Clean Water Act Section 401 by the California State Water Quality Control Board, 1991-2002*, Report prepared by California State Water Resources Control Board (2006); Matthew, Jeffrey W. & Anton G. Endress, *Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands*, 41 *Environmental Mgt* 130 (2008); Stein, Bruce A. et al., *Reversing America's wildlife crisis: Securing the future of our fish and wildlife*, National Wildlife Federation (2018).

<sup>190</sup> Stein, Bruce A. et al., *Reversing America's wildlife crisis: Securing the future of our fish and wildlife*, National Wildlife Federation (2018).

<sup>191</sup> See *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1396 [it is improper for the EIR to "require the applicant to comply with any recommendations of a report that had yet to be performed"]; *Sundstrom v. Co. of Mendocino* (1988) 202 Cal.App.3d 296.

<sup>192</sup> See *POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 736-37 [review denied]

<sup>193</sup> Sudol, Mark F. & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, CA, USA*, 30 *Environmental Management* 5: 727 (2002); Ambrose, Richard et al., *An evaluation of compensatory mitigation projects permitted under Clean Water*



sites relies on the appropriate assessment of measurable performance standards based on habitat functions and adaptive management strategies.<sup>194</sup> The PEIR's mitigation measures should implement acquisition in perpetuity, long-term monitoring, and adaptive management strategies to minimize adverse impacts to riparian habitats and associated biological resources. By not readily providing compensatory management plans or a list of adequate, concrete mitigation measures to be considered, the PEIR violates CEQA.

The state cannot afford to lose more of its valuable riparian habitat. Removing or degrading important habitats like riparian areas without applying the best available science to minimize adverse impacts will lead to more erosion, sedimentation, reduced water quality, and degraded habitats while ramping up climate change by releasing more carbon into the atmosphere. The PEIR's finding that significant impacts to riparian habitat will be mitigated to less than significant is not supported by the facts and fails to meet CEQA's requirements.

**v. The PEIR fails to appropriately assess impacts to chaparral and coastal sage scrub due to treatment activities, and mitigation measures are vague, inadequate, not based on the best available science, and improperly deferred.**

The PEIR fails to appropriately assess and adequately mitigate impacts to chaparral and coastal sage scrub and any special-status animals and plants in and adjacent to these habitats due to treatment activities to less than significant. According to the PEIR, about 2,463,983 acres of chaparral and coastal sage scrub would be impacted by treatment activities, which would have devastating impacts to many special-status plants and animals as well as overall biodiversity and ecosystem function.

Chaparral and coastal sage scrub are important habitats that host high levels of biodiversity and provide important ecosystem services. Chaparral hosts more rare and native California plant species than any other plant community,<sup>195</sup> including the federally endangered Braunton's milkvetch (*Astragalus brauntonii*) and coyote ceanothus (*Ceanothus ferrisiae*), and most chaparral flora have high site fidelity, meaning they do not occur in other habitats or plant communities.<sup>196</sup> Chaparral also provides habitat for numerous wildlife species, both seasonally and year-round, and as a whole it supports more species of mammals, birds, and reptiles than many California ecosystems (*Id.*). Coastal sage scrub habitat is important more for many species as well, including the federally endangered Quino checkerspot butterfly (*Euphrdryas editha quino*) and the federally threatened coastal California gnatcatcher (*Polioptila californica californica*). It is estimated that over 90% of the coastal sage scrub habitat in California has been

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Act Section 401 by the California State Water Quality Control Board, 1991-2002, Report prepared by California State Water Resources Control Board (2006); Bronner, Colleen E. et al., An assessment of U.S. stream compensatory mitigation policy: Necessary changes to protect ecosystem functions and services, 49 J. of the American Water Resources Assoc. 2 (2013).

<sup>194</sup> Matthew, Jeffrey W. & Anton G. Endress, Performance criteria, compliance success, and vegetation development in compensatory mitigation wetlands, 41 Environmental Mgt 130 (2008).

<sup>195</sup> Halsey, R.W. & J.E. Keeley, Conservation issues: California chaparral, Reference Module in Earth Systems and Environmental Sciences (2016), <http://dx.doi.org/10.1016/B978-0-12-409548-9.09584-1>.

<sup>196</sup> Quinn, R.D. & S.C. Keeley, Introduction to California chaparral, University of California Press (2006).

lost, and much of the remaining habitat is highly fragmented.<sup>197</sup> In addition, non-forested habitats, such as chaparral and coastal sage scrub ecosystems, have been shown to store significant amounts of carbon within their vegetation and their soils, which makes them additional resources to help combat climate change.<sup>198</sup> And like forests, these plant communities also provide other ecosystem services, such as soil stability, erosion control, and groundwater recharge.<sup>199</sup>

Despite the importance of chaparral and coastal sage scrub for biodiversity and facilitating the persistence of numerous special-status plants and animals, the PEIR provides SPRs and mitigation measures that are vague, insufficient to minimize impacts due to treatment activities, and not supported by the best available science. As mentioned previously, SPR BIO-1 is vague, inadequate, and fails to comply with SB 85, as it only requires the project proponent have a qualified registered professional forester (RPF) or biologist to conduct data reviews and reconnaissance-level surveys prior to treatment, and if suitable habitat for sensitive biological resources is documented in the project area, the SPR does not provide an adequate requirement that federal, state, or local agencies be consulted to determine whether impacts due to treatment activities can be avoided or minimized or if impacts are unavoidable. Additionally, focused and protocol-level surveys should be required when sensitive biological resources like chaparral and/or coastal sage scrub are present or potentially present to determine potential impacts to these resources from treatment activities, which is not clear under the vague language of SPR BIO-1, which states that “[f]ocused or protocol-level surveys will be conducted as necessary to determine presence/absence.”<sup>200</sup> The project proponent should comply with SB 85 and consult with CDFW and SWRCB, and they should also be required to consult with other appropriate federal, state, and local agencies, including but not limited to USFWS and CNPS, when chaparral and/or coastal sage scrub are present or potentially present in the project area.

SPR BIO-5 fails to effectively mitigate impacts to chaparral and coastal sage scrub; the measure is vague, inadequate, not based on the best available science, and improperly defers mitigation. According to SPR BIO-5, the “treatment design will seek to maintain a minimum percent cover of mature native shrubs within the treatment area to maintain habitat function”<sup>201</sup> with no indication of what “minimum percent cover” would be. SPR BIO-5 also states that “the appropriate percent cover will be identified by the project proponent in the development of treatment design and be specific to the vegetation alliances that are present in the identified

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<sup>197</sup> Bowler, Dr. Peter A., Riparian Woodland: An endangered habitat in Southern California, Proceedings of the 15th Annual Symposium Southern California Botanists, Allan A. Schoenherr, editor, Special Publication No. 3 (1989); Bowler, Dr. Peter A., Coastal sage scrub restoration -I: The challenge of mitigation, 3 Restoration & Management Notes 2 (1990)

<sup>198</sup> Koteen, Laura et al., Invasion of non-native grasses causes a drop in soil carbon storage in California grasslands, 6 Environ. Res. Lett 044001 (2011), doi:10.1088/1748-9326/6/4/044001; Luo, Hongyan et al., Mature semiarid chaparral ecosystems can be a significant sink for atmospheric carbon dioxide, 13 Global Change Biology 386 (2007), doi: 10.1111/j.1365-2486.2006.01299.x; Quideau, S.A. et al., Organic carbon sequestration under chaparral and pine after four decades of soil development, 83 Geoderma 227 (1998).

<sup>199</sup> Napa County, Biological Resources, Ch. 4 in Napa County Baseline Data Report Version 1 (November 30, 2005).

<sup>200</sup> PEIR at 3.6-119

<sup>201</sup> PEIR at 3.6-121

spatial scale used to evaluate type conversions” (*Id.*), which is both vague and improperly deferred mitigation. As mentioned previously, mitigation measures for treatment activities must be considered in the PEIR in order for the proper environmental analysis to take place.<sup>202</sup> Without any quantification or science to support the efficacy of treatment design to both improve fire safety for structures and communities and minimize adverse impacts to chaparral and coastal sage scrub, the public and decisionmakers are unable to evaluate the effectiveness of the plans in avoiding, minimizing, and mitigating the impacts from treatment activities.

The PEIR quantifies percent cover of native vegetation for “ecological restoration treatments,” including the retention of 35% of existing shrubs and associated native vegetation, and thinning would be no more than 20% from the baseline density.<sup>203</sup> However, the PEIR fails to provide scientific evidence to support the notion that ecological restoration of chaparral or coastal sage scrub with these parameters would be effective. In addition, SPR BIO-5 vaguely states that “If the stand within the treatment area consists of multiple age classes, patches representing a range of middle to old age classes will be retained to maintain and improve heterogeneity.” (*Id.*) This provides no guidance or enforceable requirement for a practice that is not based on sound science.

Chaparral and coastal sage scrub are native California habitats that are adapted to infrequent (every 30 to 150 years), large, high-intensity crown fire regimes.<sup>204</sup> However, if these regimes are disrupted, the habitats become degraded.<sup>205</sup> When fires or other types of disturbances (*i.e.*, land-clearing) occur too frequently, type conversion occurs and the native shrublands are replaced by non-native grasses and forbs that burn more frequently and more easily, ultimately eliminating native habitats and biodiversity while increasing fire threat over time.<sup>206</sup> This can have serious consequences for special-status species that rely on these habitats for survival. Thus, the PEIR fails to adequately assess and mitigate impacts due to treatment activities on

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<sup>202</sup> See *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1396 [it is improper for the EIR to “require the applicant to comply with any recommendations of a report that had yet to be performed”]; *Sundstrom v. Co. of Mendocino* (1988) 202 Cal.App.3d 296

<sup>203</sup> PEIR at 3.6-122

<sup>204</sup> Keeley, Jon E. & C.J. Fotheringham, Historic fire regime in southern California shrublands, 15 *Conservation Biology* 6:1536 (2001).

<sup>205</sup> Keeley, Jon E., Fire as a threat to biodiversity in fire-type shrublands, USDA Forest Service Gen. Tech. Rep. PSW-GTR-195 (2005); Keeley, Jon E., Fire management impacts on invasive plants in the Western United States, 20 *Conservation Biology* 2: 375 (2006); Syphard, Alexandra D. et al., Chaparral landscape conversion in Southern California, in *Valuing Chaparral*, Springer Series on Environmental Management, Springer Intl. Publishing AG (2018), [https://doi.org/10.1007/978-3-319-68303-4\\_12](https://doi.org/10.1007/978-3-319-68303-4_12).

<sup>206</sup> Keeley, Jon E., Fire as a threat to biodiversity in fire-type shrublands, USDA Forest Service Gen. Tech. Rep. PSW-GTR-195 (2005); Keeley, Jon E., Fire management impacts on invasive plants in the Western United States, 20 *Conservation Biology* 2: 375 (2006); Syphard, Alexandra D. et al., Conservation threats due to human-caused increases in fire frequency in Mediterranean-climate ecosystems, 23 *Conservation Biology* 3 (2009); Safford, Hugh D. & Kip M. Van de Water, Using fire return interval departure (FRID) analysis to map spatial and temporal changes in fire frequency on national forest lands in California, USDA Forest Service PSW-RP-266 (January 2014); Syphard, Alexandra D. et al., Chaparral landscape conversion in Southern California, in *Valuing Chaparral*, Springer Series on Environmental Management, Springer Intl. Publishing AG (2018), [https://doi.org/10.1007/978-3-319-68303-4\\_12](https://doi.org/10.1007/978-3-319-68303-4_12).

chaparral and coastal sage scrub as well as the special-status animals and plants that rely on these habitats to less than significant.

Given the importance of chaparral and coastal sage scrub to numerous species and ecosystem function, the PEIR should provide compensatory mitigation plans for these habitats, and mitigation ratios should be, at a minimum, 3:1 for preserved chaparral and coastal sage scrub. The PEIR's mitigation measures should implement acquisition in perpetuity, long-term monitoring, and adaptive management strategies to minimize adverse impacts to chaparral and coastal sage scrub and associated biological resources. With one third of America's plant and animal species vulnerable to impacts from human activity and one fifth at risk of extinction,<sup>207</sup> it is crucial that strategies to prevent further degradation and loss of biodiversity are explicit and scientifically sound.

**vi. The PEIR fails to appropriately assess impacts to wetlands due to treatment activities, and mitigation measures are vague, inadequate, and not based on the best available science.**

The PEIR fails to appropriately assess and adequately mitigate impacts to wetlands and any special-status animals and plants in and adjacent to wetlands due to treatment activities to less than significant. According to the PEIR, about 454,266 acres of wetlands are located within the treatable landscape and could be impacted by treatment activities.<sup>208</sup> This calculation is based on the USFWS National Wetlands Inventory; it does not account for wetlands that may not be recorded in the inventory but could be identified with site-specific analyses or on the ground surveys. Therefore, this calculation is a bare minimum, and the acreage of wetlands is likely much greater.

The minimum wetland buffer of 25 feet provided in MM BIO-4 is severely inadequate to preserve the ecological function and biodiversity of wetlands and fails to consider the best available science. A literature review found that recommended buffers for wildlife often far exceeded 100 meters (~325 feet), well beyond the largest buffers implemented in practice.<sup>209</sup> For example, Kilgo et al. recommend more than 1,600 feet of riparian buffer to sustain bird diversity.<sup>210</sup> In addition, amphibians, which are considered environmental health indicators, have been found to migrate long distances between aquatic and terrestrial habitats through multiple life stages.<sup>211</sup> For example, it has been estimated that the federally and state threatened California

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<sup>207</sup> Stein, Bruce A. et al., *Reversing America's wildlife crisis: Securing the future of our fish and wildlife*, National Wildlife Federation (2018).

<sup>208</sup> PEIR at 3.6-19, Table 3.6-2

<sup>209</sup> Robins, James D., Memo to Charles Wilson, Director, Napa Co Conservation Development & Planning Department re: Stream Setback Technical Memo (October 18, 2002).

<sup>210</sup> Kilgo, John C. et al., Effect of stand width and adjacent habitat on breeding bird communities in bottomland hardwoods, 62 *J. of Wildlife Management* 1:72 (1998).

<sup>211</sup> Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 *Conservation Biology* 5 (2003); Trenham, Peter C. & H. Bradley Shaffer, Amphibian upland habitat use and its consequences for population viability, 15 *Ecological Applications* 4: 1158 (2005); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 *Biological Conservation* 231 (2006); Fellers, Gary M. & Patrick M. Kleeman, California Red-Legged Frog (*Rana draytonii*) movement and habitat use: Implications for conservation, 41 *J. of Herpetology* 2: 276 (2007).

tiger salamander (*Ambystoma californiense*) can travel over 500 feet from wetland breeding sites.<sup>212</sup> Other sensitive species, such as western pond turtles (*Actinemys marmorata*, a candidate species under the Endangered Species Act) and California newts (*Taricha torosa*), have been found to migrate over 1,300 feet and 10,000 feet respectively from breeding ponds and streams.<sup>213</sup> Accommodating the more long-range dispersers is vital for continued survival of species populations and/or recolonization following a local extinction.<sup>214</sup> In addition, more extensive buffers provide resiliency in the face of climate change-driven alterations to these habitats, which will cause shifts in species ranges and distributions.<sup>215</sup> This emphasizes the need for sizeable upland buffers around streams and wetlands, as well as connectivity corridors between heterogeneous habitats.

Today, with climate change affecting California's water supply, there is renewed interest in protecting and maximizing the state's water supplies. Larger buffer zones along jurisdictional streams and wetlands would provide more stream bank stabilization, water quality protection, groundwater recharge, and flood control both locally and throughout the watershed.<sup>216</sup> They would also protect communities from impacts due to climate change by buffering them from storms, minimizing impacts of floods, and providing water storage during drought.<sup>217</sup> Thus, the PEIR should implement larger setbacks from jurisdictional streams and wetlands based on the best available science, especially if these habitats are located within designated critical habitat, support or have the potential to support special-status and/or sensitive species, or if they provide important habitat connectivity or linkages.

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<sup>212</sup> Trenham, Peter C., Terrestrial habitat use by adult California tiger salamanders, 35 J. of Herpetology 2: 343 (2001).

<sup>213</sup> Trenham, Peter C., Demography, migration, and metapopulation structure of pond breeding salamanders, Ph.D. Dissertation, University of California Davis (1998); Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 Conservation Biology 5 (2003).

<sup>214</sup> Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 Conservation Biology 5 (2003); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 Biological Conservation 231 (2006).

<sup>215</sup> Cushman, Samuel A. et al., Biological corridors and connectivity, in Key Topics in Conservation Biology 2, First ed. (David W. Macdonald & Katherine J. Willis eds. 2013); Heller, Nicole E. & Erika S. Zavaleta, Biodiversity management in the face of climate change: A review of 22 years of recommendations, 142 Biological Conservation 14 (2009); Warren, Rachel et al., Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise, 106 Climatic Change 141 (2011), DOI 10.1007/s10584-010-9923-5.

<sup>216</sup> Nieswand, George H. et al., Buffer strips to protect water supply reservoirs: A model and recommendations, 26 Water Resources Bulletin 6 (1990); Norris, Vol, The use of buffer zones to protect water quality: A review, 7 Water Resources Management 257 (1993); Whipple Jr., William, Buffer zones around water-supply reservoirs, 119 J. Water Resour. Plann. Manage. 4:495 (1993); Sabater, Francesc et al., Effects of riparian vegetation removal on nutrient retention in a Mediterranean stream, 19 J.N. Am. Benthos. Soc. 4:609 (2000); Lovell, Sarah Taylor & William C. Sullivan, Environmental benefits of conservation buffers in the United States: Evidence, promis, and open questions, 112 Agriculture, Ecosystems and Environment 249 (2006).

<sup>217</sup> Environmental Law Institute, Planner's guide to wetland buffers for local governments (2008).

MM BIO-4 is further insufficient because it is vague and does not require consultation with USFWS, USACE, CDFW, or other appropriate federal, state, or local agencies to delineate wetland boundaries, determine the potential presence of special status species, or identify avoidance and mitigation measures to minimize impacts due to treatment activities. The PEIR violates SB 85, which states, “When selecting a fuel reduction project, the department shall collaborate with the State Water Resources Control Board and the Department of Fish and Wildlife to ensure the design of the fuel reduction project protects water resources and wildlife habitat while addressing fire behavior and public safety.”<sup>218</sup>

The PEIR states, “[t]he buffer will be a minimum width of 25 feet but may be larger if deemed necessary. The appropriate size and shape of the buffer zone will be determined in coordination with the qualified RPF or biologist and will depend on the type of wetland present (e.g., seasonal wetland, wet meadow, freshwater marsh, vernal pool), the timing of treatment (e.g., wet or dry time of year), whether any special-status species may occupy the wetland and the species’ vulnerability to the treatment activities, environmental conditions and terrain, and the treatment activity being implemented.”<sup>219</sup> The PEIR does not adequately define under what circumstances larger buffers would be “deemed necessary,” nor does it explain how the type of wetland, timing of treatment, and whether any special-status species may occupy the wetland, would impact buffer size and shape. The PEIR fails to provide specifics and lacks the best available science to support the assertion that impacts to wetlands, special-status species that use the wetlands as habitat, and water resources would be less than significant.

**vii. The PEIR fails to adequately assess impacts to wildlife movement and habitat connectivity and fails to provide appropriate and adequate mitigation measures to minimize such impacts.**

The CalVTP fails to adequately assess potential impacts to habitat connectivity and wildlife movement and include measures to minimize impacts at the local and regional scale. Habitat connectivity is vital for wildlife movement and biodiversity conservation. Restrictions on movement and dispersal can negatively affect animals’ behavior, movement patterns, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, and landscapes.<sup>220</sup> Individuals can die off, populations can become isolated, sensitive species can become locally extinct, and important ecological processes like plant pollination and nutrient cycling can be lost. In addition, connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range

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<sup>218</sup> Senate Bill No. 85 (Stats. 2019, ch. 31); Pub. Resources Code §§ 21, 412.

<sup>219</sup> PEIR at 3.6-174

<sup>220</sup> Ceiea-Hasse, Ana et al., Population persistence in landscapes fragmented by roads: Disentangling isolation, mortality, and the effect of dispersal, 375 *Ecological Modelling* 45 (2018); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 *Biological Conservation* 231 (2006); Haddad, Nick M. et al., Habitat fragmentation and its lasting impact on Earth's ecosystems, *Sci. Adv.* 1:31500052 (March 20, 2015); Trombulak, Stephen C. & Christopher A. Frissell, Review of ecological effects of roads on terrestrial and aquatic communities, 14 *Conservation Biology* 1:18 (2000); van der Ree, Rodney et al., Effects of roads and traffic on wildlife populations and landscape function: Road ecology is moving toward larger scales, 16 *Ecology and Society* 1:48 (2011), <http://www.ecologyandsociety.org/vol16/iss1/art48/>.

shifts and species migrations as climate changes.<sup>221</sup> Loss of wildlife connectivity decreases biodiversity and degrades ecosystems.

Wildlife connectivity and migration corridors are important at the local, regional, and continental scale. Examining Napa County as an example, as much of the County is within the identified treatable landscape, it is clear that the impacts of treatment activities will have adverse impacts on wildlife movement, habitat connectivity, and overall biodiversity. Local connectivity that links aquatic and terrestrial habitats is important to allow various sensitive species to persist, including state- and federally-protected California red-legged frogs (*Rana draytonii*) and western pond turtles (*Actinemys marmorata*). Yet buffers around wetlands do not consider the best available science that shows larger buffers connecting wetlands with upland habitats are required to effectively support sensitive species.<sup>222</sup> At a regional scale, medium- and large-sized mammals that occur in Napa County, such as mountain lions (*Puma concolor*), bobcats (*Lynx rufus*), gray foxes (*Urocyon cinereoargenteus*), ring-tailed cats (*Bassariscus astutus*), and mule deer (*Odocoileus hemionus*), require large patches of heterogeneous habitat to forage, seek shelter/refuge, and find mates. Yet riparian habitats, common migration corridors for these and many other species, are not given adequate protections, and connectivity of riparian areas with heterogeneous habitats is not adequately considered. At a global scale, Napa County (and much of California) is an important stop for about 400 resident and migratory bird species within the Pacific Flyway, a north-south migratory corridor that extends from Alaska to Patagonia. For example, while Anna's hummingbirds (*Calypte anna*) often reside in Napa County's chaparral, oak woodlands, and riparian areas year-round, Allen's hummingbirds (*Selasphorus sasin*) migrate from Mexico in the spring to nest in Napa's oak woodlands and riparian areas, and rufous hummingbirds (*Selasphorus rufus*) migrate through Napa on their way to and from their breeding grounds in Canada and their over-wintering grounds in the Gulf Coast. Yet loss of sensitive natural communities and ecological function are not adequately avoided or mitigated, and connectivity among these habitats at a local, regional, and global scale is not assessed or addressed in the PEIR. In addition, anadromous fish, such as Chinook salmon and steelhead trout, are born in some of Napa's waterways, spend several years in the Pacific Ocean, and return to Napa to spawn. Yet hydrological modifications and impacts to soils due to vegetation removal and habitat degradation are not adequately assessed or mitigated. Like the many areas within the identified treatable landscape, Napa County is a critical hub for local, regional, and global biodiversity; wildlife movement and habitat connectivity must be functionally maintained. The PEIR fails to adequately assess and mitigate impacts to wildlife connectivity by failing to protect

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<sup>221</sup> Heller, Nicole E. & Erika S. Zavaleta, Biodiversity management in the face of climate change: A review of 22 years of recommendations (142 *Biological Conservation* 14 (2009); Cushman, Samuel A. et al., Biological corridors and connectivity, in *Key Topics in Conservation Biology* 2, First ed. (David W. Macdonald & Katherine J. Willis eds. 2013); Krosby, Meade et al., Identifying riparian climate corridors to inform climate adaptation planning, 13 *PLoS ONE* 11:e205156 (2018), <https://doi.org/10.1371/journal.pone.0205156>.

<sup>222</sup> Semlitsch, Raymond D. & J. Russell Bodie, Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles, 17 *Conservation Biology* 5 (2003); Trenham, Peter C. & H. Bradley Shaffer, Amphibian upland habitat use and its consequences for population viability, 15 *Ecological Applications* 4: 1158 (2005); Cushman, Samuel A., Effects of habitat loss and fragmentation on amphibians: A review and prospectus, 128 *Biological Conservation* 231 (2006); Fellers, Gary M. & Patrick M. Kleeman, California Red-Legged Frog (*Rana draytonii*) movement and habitat use: Implications for conservation, 41 *J. of Herpetology* 2: 276 (2007).

against further fragmentation and piecemealing of intact, heterogeneous habitats at the local, regional, and global scale.

**D. The PEIR Fails to Adequately Analyze and Mitigate Impacts from Wildfires.**

The Wildfire impacts and mitigation analysis in the PEIR (section 3.17) suffers from numerous deficiencies, including: (1) failing to distinguish between community fire safety objectives and ecological restoration objectives--two fundamentally different goals that require different management approaches; (2) failing to provide evidence that the proposed vegetation treatment activities will protect homes and communities; (3) failing to disclose and analyze research showing that vegetation management in the defensible space immediately surrounding structures is the most effective vegetation treatment to protect communities from wildfire; (4) failing take an ecoregional approach to ecological restoration objectives and the management actions needed to accomplish them; and (5) failing to provide an adequate assessment of the ecological restoration objectives for California’s forests, including omission of key information on the environmental baseline and the effectiveness and impacts of proposed management actions.

**i. The PEIR’s analysis fails to distinguish between community fire safety objectives and ecological restoration objectives—two fundamentally different goals that require different management approaches.**

In conflating two of the primary objectives of the Program—community fire and ecological restoration—the PEIR fails to present a project description that contains sufficient specificity so as to allow for adequate review.<sup>223</sup> The PEIR must distinguish between its community fire safety objectives as separate from the ecological restoration objectives, as these are fundamentally different goals that require different management tools. In the Wildfire analysis and throughout, the PEIR fails to differentiate between these two different objectives, the management actions that are being proposed to accomplish each objective, how proposed management actions will achieve each objective, and the impacts of the management actions.

**ii. The PEIR fails to provide evidence that the proposed vegetation treatment activities will protect homes and communities.**

The CEQA Guidelines require that an EIR “demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context.”<sup>224</sup> To achieve this end, the lead agency must make a good faith effort at full disclosure of all the information required for a reasoned analysis of an issue.<sup>225</sup> Further, the findings in the

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<sup>223</sup> *Dry Creek Citizens Coalition v. County of Tulare*, 70 Cal. App. 4th 20, 26 (1999).

<sup>224</sup> 14 Cal. Code Regs. § 15125(c).

<sup>225</sup> *Madera Oversight Coalition, Inc. v County of Madera* 199 Cal. App 4th 48, 104 & FN 32 (2011), overruled on other grounds in *Neighbors for Smart Rail v Exposition Metro Line Constr. Auth.* (2013) 57 C4th 439.



EIR must be supported by substantial evidence.<sup>226</sup> The analysis of the impacts of vegetation treatment activities on wildfires is inadequate because it fails to provide the full environmental context of vegetation treatment activities, fails to disclose information that indicates vegetation treatment activities are ineffective at advancing community safety, and is not supported by substantial evidence.

As detailed elsewhere in these comments, the PEIR fails to provide support for its foundational claim that the proposed vegetation treatments will help slow and suppress non-wind-driven fires, thereby increasing public safety and firefighting effectiveness. For example, while the PEIR cites Kalies and Yocom Kent (2016) for this claim, this review specifically concluded that there is not good evidence that fuel treatments lead to increased public safety or firefighting effectiveness.

Instead, recent studies highlight the limitations of fuel reduction approaches in altering fire behavior and reducing wildfire threat to communities, particularly because (a) fuel treatments are largely ineffective under extreme fire weather conditions that create the largest fires and the vast majority of annual area burned; (b) there is a low probability that areas receiving fuels treatment will overlap with wildfires; and (c) fuel treatments are costly and often infeasible to implement widely.<sup>227</sup> As summarized by a 2017 review by fire scientist Tania Schoennagel and eleven co-authors:

Managing forest fuels is often invoked in policy discussions as a means of minimizing the growing threat of wildfire to ecosystems and WUI communities across the West. However, the effectiveness of this approach at broad scales is limited. Mechanical fuels treatments on US federal lands over the last 15 y (2001–2015) totaled almost 7 million ha, but the annual area burned has continued to set records. Regionally, the area treated has little relationship to trends in the area burned, which is influenced primarily by patterns of drought and warming. Forested areas considerably exceed the area treated, so it is relatively rare that treatments encounter wildfire. For example, in agreement with other analyses, 10% of the total number of US Forest Service forest fuels treatments completed 2004–2013 in the western United States subsequently burned in the 2005–2014 period. Therefore, roughly 1% of US Forest Service forest treatments experience wildfire each year, on average. The effectiveness of forest treatments lasts about 10–20 y, suggesting that most treatments have little influence on wildfire. Implementing fuels treatments is challenging and costly; funding for US Forest Service hazardous fuels treatments totaled \$3.2 billion over the 2006–2015 period. Furthermore, forests account for only 40% of the area burned since 1984,

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<sup>226</sup> *City of Hayward v. Trustees of California State University*, 242 Cal. App. 4th 833, 839 (2015)

<sup>227</sup> Schoennagel, Tania et al., Adapt to more wildfire in western North American forests as climate changes, 114 PNAS 4582 (2017); Dellasala, Dominick A., Accommodating mixed-severity fire to restore and maintain ecosystem integrity with a focus on the Sierra Nevada of California, USA, 13 Fire Ecology 148 (2017).

with the majority of burning in grasslands and shrublands. As a consequence of these factors, the prospects for forest fuels treatments to promote adaptive resilience to wildfire at broad scales, by regionally reducing trends in area burned or burn severity, are fairly limited.<sup>228</sup> (internal citations removed)

Similarly, DellaSala et al. (2017) concluded that “[o]n public lands, current fire policy promotes thinning over large landscapes (e.g., USDA Forest Service 2002, US Congress 2003, USDA Forest Service 2009, US Congress 2015), which is costly (Schoennagel and Nelson 2011), infeasible over large areas (Calkin *et al.* 2013, North *et al.* 2015a, Parks *et al.* 2015), and largely ineffective under extreme fire weather conditions (Lydersen *et al.* 2014, Cary *et al.* 2016).”<sup>229</sup> Zachmann et al. (2018) found that “[t]he combination of transient treatment effects, variability in the effectiveness of different treatment methods (Kalies and Yocom Kent, 2016; Martinson and Omi, 2013; Prichard et al., 2010), and operational and funding constraints (North et al., 2015) limits the practicality of frequent treatments at the landscape scale; and there is growing recognition that fuels reduction alone may not be able to effectively alter regional wildfire trends (Schoennagel et al., 2017).”<sup>230</sup>

Further, Syphard et al. (2019) and Abatzoglou et al. (2018) highlighted that large, wind-driven fire events have been responsible for the vast majority of structures lost in California wildfires, including the recent fires in 2017 and 2018, and that one of the clearest factors that determines whether a fire becomes large is wind speed.<sup>231</sup> However, as acknowledged by the PEIR, the vegetation treatments proposed in the VTP are ineffective for altering fire behavior during wind-driven fires.

In addition, some studies indicate that forest thinning can increase fire severity by opening up the canopy, creating hotter and drier conditions and introducing invasive fire-prone grasses. For example, a study in southwestern Oregon forests by Zald and Dunn (2018) found that private industrial forests subjected to intensive harvest experienced higher wildfire severity than more intact forests with a greater proportion of older forest areas.<sup>232</sup> The study suggested that “intensive plantation forestry characterized by young forests and spatially homogenized fuels, rather than pre-fire biomass, were significant drivers of wildfire severity.” Similarly,

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<sup>228</sup> Schoennagel, Tania et al., Adapt to more wildfire in western North American forests as climate changes, 114 PNAS 4582 (2017) at 4586.

<sup>229</sup> Dellasala, Dominick A., Accommodating mixed-severity fire to restore and maintain ecosystem integrity with a focus on the Sierra Nevada of California, USA, 13 Fire Ecology 148 (2017) at 152-153.

<sup>230</sup> Zachmann, L.J. et al., Prescribed fire and natural recovery produce similar long-term patterns of change in forest structure in the Lake Tahoe basin, California, 409 Forest Ecology and Management 276 (2018) at 276-277.

<sup>231</sup> Syphard, Alexandra D. et al., The relative influence of climate and housing development on current and projected future fire patterns and structure loss across three California landscapes, 56 Global Environmental Change 41 (2019); Abatzoglou, John T. et al., Human-related ignitions concurrent with high winds promote large wildfires across the USA, 27 International Journal of Wildland Fire (2018).

<sup>232</sup> Zald, Harold S.J. and Christopher J. Dunn, Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape, 28 Ecological Applications 1068 (2018).

Bradley et al. (2016) found that, across the western U.S., pine and mixed conifer forests with the lowest levels of protection from logging tend to burn more severely, while forests with the most protection from logging burned least severely even though they are generally identified as having the highest overall levels of biomass and fuel loading.<sup>233</sup>

**iii. The PEIR fails to disclose and analyze research showing that vegetation management in the defensible space immediately surrounding structures is the most effective vegetation treatment to protect communities from wildfire.**

As discussed above, the good faith standard requires agencies to disclose all the information required for a reasoned discussion. The PEIR falls short of this standard with respect to research regarding mechanisms to advance community safety in the face of wildfire. A robust body of scientific research demonstrates that the most effective way to protect structures from fire is to reduce the ignitability of the structure itself and the immediate surroundings within about 100 feet from the structure.<sup>234</sup> Importantly, California-focused studies have found that vegetation treatment beyond 100 feet from homes and other structures provide no benefit for protecting those structures from burning.<sup>235</sup> These studies are critical for accurately assessing of whether the proposed vegetation treatments will achieve the VTP’s key purpose of community wildfire protection. However, the PEIR impermissibly omits disclosure and discussion of scientific studies demonstrating that ramping up the vegetation treatment as proposed by the VTP will not increase community wildfire safety.

For example, Calkin et al. (2014) emphasized that treating wildland fuels does not “measurably impact the susceptibility of homes to ignition and subsequent destruction.”<sup>236</sup> The study highlighted that home losses are increasing despite enormous investments in modifying wildland fuels near population areas. This is because home susceptibility to wildfire is a direct function of their ignitability, which is dependent of the small area of the “home ignition zone” which “is independent of fire behavior in the nearby wildlands.” According to the study, “research demonstrates a home’s characteristics in relation to its immediate surroundings principally determine home ignition potential during extreme wildfires.” Calkin et al. (2014) emphasized that “[o]vercoming perceptions of wildland-urban interface fire disasters as a

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<sup>233</sup> Bradley, C.M. et al., Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States? 7 *Ecosphere* e01492 (2016).

<sup>234</sup> Cohen, J.D., Preventing disaster: home ignitability in the Wildland-Urban Interface, 98 *Journal of Forestry* 15 (2000); Cohen, J.D. and R.D. Stratton, Home destruction examination: Grass Valley Fire, U.S. Forest Service Technical Paper R5-TP-026b (2008); Gibbons, P. et al., Land management practices associated with house loss in wildfires, 7 *PLoS ONE* e29212 (2012); Scott, J.H. et al., Examining alternative fuel management strategies and the relative contribution of National Forest System land to wildfire risk to adjacent homes – A pilot assessment on the Sierra National Forest, California, USA, 362 *Forest Ecology and Management* 29 (2016).

<sup>235</sup> Syphard, A.D. et al., The role of defensible space for residential structure protection during wildfires, 23 *International Journal of Wildland Fire* 1165 (2014).

<sup>236</sup> Calkin, David E. et al., How risk management can prevent future wildfire disasters in the wildland-urban interface, 111 *PNAS* 746 (2014).

wildfire control problem rather than a home ignition problem, determined by home ignition conditions, will reduce home loss.”

In a California-focused study, Syphard et al. (2014) found that structures were more likely to survive a fire if the vegetation was treated in the defensible space immediately adjacent to them.<sup>237</sup> According to Syphard et al. (2014), “[t]he most effective treatment distance varied between 5 and 20 m (16–58 ft) from the structure, but distances larger than 30 m (100 ft) did not provide additional protection, even for structures located on steep slopes. The most effective actions were reducing woody cover up to 40% immediately adjacent to structures and ensuring that vegetation does not overhang or touch the structure.” As a result, efforts to promote large-scale thinning in areas far away from buildings are often wasteful, expensive, inefficient, carbon-releasing, ecologically-damaging, and relatively ineffective, compared to efforts that focus on buildings and the defensible space in their immediate vicinity.<sup>238</sup> Recent analyses by Syphard et al. (2017) and Syphard et al. (2019) re-affirmed the important role of defensible space near the structure. These studies highlighted that community safety is a multivariate problem that requires a comprehensive solution involving defensible space maintenance, fire-safe construction, and land-use and urban planning decisions that reduce the exposure of homes to wildfires (i.e., by restricting development in fire-prone areas).<sup>239</sup>

**iv. The PEIR fails to take an ecoregional approach to the ecological restoration objectives and the management actions needed to accomplish them.**

The PEIR must take an ecoregional approach when discussing its ecological restoration objectives and appropriate management actions for accomplishing them. California’s forest, shrubland, and grassland ecosystems are being differentially affected by human disturbances to their natural fire regimes—with most forests experiencing too little fire due to a long legacy of fire suppression, but chaparral ecosystems experiencing too much fire due to extensive development in these fire-prone ecosystems paired with human-caused ignitions. The effects of climate change and human-caused fire ignitions on wildfire activity also vary by region. For example, Keeley and Syphard (2016) found that climate change is not a major determinant of fire activity on all landscapes, with lower elevations and latitudes showing little or no increase in fire activity with hotter and drier conditions.<sup>240</sup> Syphard et al. (2019) similarly found that the relative importance of climate and housing pattern in explaining fire activity varies across California’s

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<sup>237</sup> Syphard, A.D. et al., The role of defensible space for residential structure protection during wildfires, 23 *International Journal of Wildland Fire* 1165 (2014).

<sup>238</sup> Scott, J.H. et al., Examining alternative fuel management strategies and the relative contribution of National Forest System land to wildfire risk to adjacent homes – A pilot assessment on the Sierra National Forest, California, USA, 362 *Forest Ecology and Management* 29 (2016).

<sup>239</sup> Syphard, Alexandra D. et al., The importance of building construction materials relative to other factors affecting structure survival during wildfire, 21 *International Journal of Disaster Risk Reduction* 140 (2017); Syphard, Alexandra D. et al., The relative influence of climate and housing development on current and projected future fire patterns and structure loss across three California landscapes, 56 *Global Environmental Change* 41 (2019).

<sup>240</sup> Keeley, Jon E. and Alexandra D. Syphard, Climate change and future fire regimes: examples from California, 6 *GeoSciences* 37 (2016).

regions, with climate change having no projected impacts on fire probability in southern California.<sup>241</sup>

- v. **The PEIR fails to provide an adequate assessment of its ecological restoration objectives for California’s forests, including omission of key information on the environmental baseline and the effectiveness and impacts of proposed management actions.**

A key objective of the VTP is to reduce fire severity through vegetation treatments based on the unsupported claim that fire severity is increasing in California’s forests. Although the PEIR cites Westerling et al. (2006) for the assertion of increasing fire severity,<sup>242</sup> Westerling et al. (2006) does not provide evidence for increasing fire severity in California’s forests.<sup>243</sup> In addition, the PEIR fails to acknowledge that the weight of scientific evidence indicates that there are no significant trends in fire severity in California’s forests in terms of proportion, area, and/or patch size, including recent studies by Picotte et al. 2016 (California forest and woodland) and Keyser and Westerling 2017 (California forests).<sup>244</sup> Most recently, Keyser and Westerling (2017) tested trends for high severity fire occurrence for western United States forests, for each state and each month. The study found no significant trend in high severity fire occurrence during 1984-2014, except for Colorado. The study also found no significant increase in high severity fire occurrence by month during May through October, and no correlation between fraction of high severity fire and total fire size. Furthermore, Parks et al. (2016) projected that even in hotter and drier future forests, there will be a decrease or no change in high-severity fire effects in nearly every forested region of the western U.S., including California, due to reductions in combustible understory vegetation over time.<sup>245</sup>

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<sup>241</sup> Syphard, Alexandra D. et al., The relative influence of climate and housing development on current and projected future fire patterns and structure loss across three California landscapes, 56 *Global Environmental Change* 41 (2019).

<sup>242</sup> PEIR at 1-3 (“Historically, California’s wildfires were less severe”) and 3.17-3 (“Although an important practice in limiting fire spread, over time, the land management practice of fire suppression combined with forest regrowth after extensive logging in the late 19th century has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires (Westerling et al. 2006).”

<sup>243</sup> Westerling et al. (2006), using a baseline of 1970 to 2003 and averaging across forested regions in the western United States, reported a shift during the mid-1980s toward a higher frequency of large fires, greater average annual area burned and a longer fire season, which the authors associated with increased spring and summer temperatures and an earlier spring snowmelt, but did not report on trend in fire severity. Westerling, A.L. et al., Warming and earlier spring increase Western U.S. forest wildfire activity, 313 *Science* 940 (2006)

<sup>244</sup> Picotte, J.J. et al., 1984-2010 trends in fire burn severity and area for the coterminous US, 25 *International Journal of Wildland Fire* 413 (2016); Keyser, A. and A.L. Westerling, Climate drives inter-annual variability in probability of high severity fire occurrence in the western United States, 12 *Environmental Research Letters* 065003 (2017).

<sup>245</sup> Parks, S.A. et al., How will climate change affect wildland fire severity in the western US? 11 *Environmental Research Letters* 035002 (2016).

The PEIR incorrectly suggests that there is currently an excess of high-intensity fire in California's forests that is ecologically detrimental,<sup>246</sup> when in fact, scientific research has established that there is an ecological harmful *wildfire deficit* in California's pine and mixed conifer forests, including less high-severity fire, compared with historical conditions. While the PEIR briefly acknowledges the fire deficit in California's forests, it fails to discuss the ecological harms resulting from the long history of industrial fire suppression.<sup>247</sup> The PEIR must acknowledge the multiple lines of evidence demonstrating that California's mixed-conifer and ponderosa pine forests have historically been characterized by mixed-severity fire that includes ecologically significant amounts of high-severity fire, which has played an important role in creating heterogeneity, including complex structural diversity and high biological diversity.<sup>248</sup>

The PEIR must also disclose the extensive research documenting the importance of the biodiverse, ecologically significant, and unique "complex early seral forest" (also called "snag forest habitat") created by high-severity fire, and the under-representation of this snag forest ecotype compared to historical conditions. Scientific research demonstrates that many species, including many at-risk species, depend on the unique habitat created by high-severity fire patches, including the abundance of snags, downed logs, shrub patches, and regeneration of trees.<sup>249</sup> For example, Galbraith et al. (2019) found that "within a large wildfire mosaic, severely burned forest contained the most diverse wild bee communities" with 20 times more individuals and 11 times more species captured in areas that experienced high fire severity relative to areas with the lowest fire severity.<sup>250</sup> Furthermore, recent California-specific research indicates that natural regeneration is occurring in high-severity fire patches, and high-severity fire is not resulting in type conversion to non-forest or conversion from pine forest to white-fir, Doug fir, and incense cedar forest.<sup>251</sup>

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<sup>246</sup> PEIR at 1-3 ("The proposed CalVTP directs the implementation of vegetation treatments to reduce wildfire risks and avoid or diminish the harmful effects of wildfire on the people, property, and natural resources in the state of California.")

<sup>247</sup> PEIR at 1-1 ("In the last several decades, more than 75 percent of forested areas and other woody vegetation types burned less frequently than historic averages....")

<sup>248</sup> Odion, D.C. et al., Examining historical and current mixed-severity fire regimes in Ponderosa pine and mixed-conifer forests of western North America, 9 Plos One e87852 (2014).

<sup>249</sup> Swanson, M.E. et al., The forgotten stage of forest succession: early-successional ecosystems on forested sites, 9 Frontiers in Ecology and Environment 117 (2011); DellaSala, Dominick A. et al., Complex early seral forests of the Sierra Nevada: what are they and how can they be managed for ecological integrity? 34 Natural Areas Journal 310 (2014); Hutto, Richard L. et al., Toward a more ecologically informed view of severe forest fires, 7 Ecosphere e01255 (2016).

<sup>250</sup> Galbraith, Sara M. et al., Wild bee diversity increases with local fire severity in a fire-prone landscape, 10 Ecosphere e02668 (2019).

<sup>251</sup> Baker, William L., Transitioning western U.S. dry forests to limited committed warming with bet-hedging and natural disturbances, 9 Ecosphere e02288 (2018); Hanson, Chad T., Landscape heterogeneity following high-severity fire in California's forests, 42 Wildlife Society Bulletin 264 (2018).

The PEIR suggests that vegetation reduction treatments under the VTP will increase forest resilience, particularly under climate change.<sup>252</sup> However, research suggests that forest management treatments focused on thinning trees can be counter-productive, and many studies instead recommend restoring natural disturbance processes to increase forest resilience. For example, Carnwath and Nelson (2016) noted that management activities to reduce tree density with the purpose of increasing stand resilience often target trees that may be the most drought-resilient, producing counter-productive results.<sup>253</sup> Similarly, D’Amato et al. (2013) concluded that “heavy thinning treatments applied to younger populations, although beneficial at reducing drought vulnerability at this stage, may predispose these populations to greater long-term drought vulnerability.”<sup>254</sup> Keeling et al. (2006) emphasized the importance of restoring ecological processes, especially wildfire, rather than management that tries to create specific stand conditions.<sup>255</sup> Keeling’s study in ponderosa pine/Douglas-fir communities found that “fire and absence of fire produce variable effects in the understory and different rates of successional change in the overstory across varied landscapes.” The authors cautioned “against specific targets for forest structure in restoration treatments, and underscore the importance of natural variability and heterogeneity in ponderosa pine forests.” Further, “management may need to emphasize restoration of natural ecological processes, especially fire, rather than specific stand conditions.”

Instead, research indicates that restoring forest health and increasing forest resilience requires reestablishing the natural ecological disturbances that forests and wildlife evolved with.<sup>256</sup> California’s forests evolved with mixed-severity fire, not mechanical treatments or prescribed fire. Mechanical thinning does not mimic natural wildfire and can reduce the value of mature forest habitat by reducing structural complexity which many rare wildlife species preferentially select, while prescribed fire burning at low-severity outside of the natural fire season does not mimic the mixed-severity wildfire regime that California’s forests evolved with.

Baker (2018) recommended focusing forest restoration on allowing natural disturbance processes—such as wildfire, drought, and bark beetle outbreaks—to proceed to increase forest

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<sup>252</sup> PEIR at ES-3 (“Ecological Restoration: generally outside the WUI in areas that have departed from the natural fire regime as a result of fire exclusion, ecological restoration would focus on restoring...resiliency”).

<sup>253</sup> Carnwath, G.C. and C.R. Nelson, The effect of competition on response to drought and interannual climate variability of a dominant conifer tree of western North America, 104 *Journal of Ecology* 1421 (2016).

<sup>254</sup> D’Amato, A.W. et al., Effects of thinning on drought vulnerability and climate response in north temperate forest ecosystems, 23 *Ecological Applications* 1735 (2013).

<sup>255</sup> Keeling, E.G. et al., Effects of fire exclusion on forest structure and composition in unlogged ponderosa pine/Douglas-fir forests, 327 *Forest Ecology and Management* 418 (2006).

<sup>256</sup> Beudert, Burkhard et al., Bark beetles increase biodiversity while maintaining drinking water quality, 8 *Conservation Letters* 272 (2015); Baker, William L., Transitioning western U.S. dry forests to limited committed warming with bet-hedging and natural disturbances, 9 *Ecosphere* e02288 (2018); Zachmann, L.J. et al., Prescribed fire and natural recovery produce similar long-term patterns of change in forest structure in the Lake Tahoe basin, California, 409 *Forest Ecology and Management* 276 (2018).

resilience and adaptation and enhance forest persistence under climate change, including “(1) refocusing restoration to increase bet-hedging resilience to droughts and beetle outbreaks by retaining small trees and diverse tree species, (2) expanding development of fire-safe landscapes to protect people and infrastructure from unavoidable increased fire, (3) enabling more managed fire to restore and enhance standard landscape-scale bet-hedging, and (4) accepting that LIDs [large infrequent disturbances] will revise resistance, resilience, and adaptation, which enhance forest persistence, particularly if post-disturbance survivors are not logged and trees are not planted.”<sup>257</sup>

Zachmann et al. (2018) recommended incorporating “prescribed natural regeneration” into forest management planning to increase forest resilience—that is, deliberately allowing natural processes to proceed unimpeded in some areas, which “is often ignored as a viable land-use option.”<sup>258</sup> This study found that the structure and fuel variables of mixed conifer forest stands in the Lake Tahoe basin that were treated with prescribed fire appeared to be “moving in a similar direction” as stands that were untreated and left to natural regeneration. The results “suggested that untreated areas may be naturally recovering from the large disturbances associated with resource extraction and development in the late 1800s [even while exposed to a changing climate and longterm fire suppression], and that natural recovery processes, including self-thinning, are taking hold.” The study concluded that “incorporation of natural regeneration into forest management planning can greatly reduce the cost and resource requirements of large-scale restoration efforts, while also providing habitat for fire-dependent and undisturbed old forest dependent species.”

The PEIR entirely fails to consider or analyze using managed wildland fire in the CALVTP as an effective management tool for achieving forest ecosystem restoration. In managed wildland fire, land managers make a decision to allow lightning-caused fires to burn to promote mixed-severity fire effects in order to enhance natural heterogeneity and benefit wildlife. Restoring wildfire in areas away from people is an important part of ecological fire management and increasing the adaptive resilience of forest ecosystems and society to increasing wildfire.<sup>259</sup>

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<sup>257</sup> Baker, William L., Transitioning western U.S. dry forests to limited committed warming with bet-hedging and natural disturbances, 9 *Ecosphere* e02288 (2018).

<sup>258</sup> Zachmann, L.J. et al., Prescribed fire and natural recovery produce similar long-term patterns of change in forest structure in the Lake Tahoe basin, California, 409 *Forest Ecology and Management* 276 (2018).

<sup>259</sup> Caprio, A.C. and D.M. Graber, Returning fire to the mountains: can we successfully restore the ecological role of pre-Euroamerican fire regimes to the Sierra Nevada? *in* *Proceedings: Wilderness Science in a Time of Change* (2000); U.S. Department of Agriculture & U.S. Department of the Interior, *Wildland fire use implementation procedures reference guide*, Boise: National Interagency Fire Center (2005); Dale, Lisa, *Wildfire policy and fire use on public lands in the United States*, 19 *Society and Natural Resources* 275 (2006); Noss, Reed F. et al., *Managing fire-prone forests in the Western United States*, 4 *Frontiers in Ecology and the Environment* 481 (2006); Ingalsbee, Timothy, *Ecological fire use for ecological fire management: managing large wildfires by design*, USDA Forest Service Proceedings RMRS-P-73 (2015); Miller, Carol and Gregory H. Aplet, *Progress in wilderness fire science: embracing*



Schoennagel and coauthors (2018) highlighted that “[m]anaging rather than aggressively suppressing wildland fires can promote adaptive resilience as the climate continues to warm.”<sup>260</sup> The 1995 Federal Wildland Fire Management policy was the first federal policy aimed at reintroducing more wildfire on public lands, with U.S. federal agencies now actively managing an average of 75,000 ha of lightning-caused fires per year.<sup>261</sup> In California, Boisramé et al. (2018) found that the managed wildfire policy in Yosemite National Park over the past several decades has returned diversity to this fire-suppressed landscape, even after protracted fire suppression, and demonstrated that “management of forests to restore fire regimes has the potential to maintain healthy, resilient landscapes in frequent fire-adapted ecosystems.”<sup>262</sup> Thus, the aggressive approach to fire suppression, as taken by the VTP, is “counterproductive to building adaptive resilience to increasing wildfire in the long term.”<sup>263</sup>

The PEIR fails to discuss the research demonstrating the importance of forest protection, including reducing forest degradation from logging and thinning, for restoring forest ecosystem health and forest carbon storage.<sup>264</sup> California’s forests are much less dense in terms of basal area than they were historically due to a long, ongoing history of logging.<sup>265</sup> Sierra Nevada forests were about 30% less dense, and Transverse and Peninsular Range forests were 40% less dense, in terms of basal area in the 2000s compared to the 1930s,<sup>266</sup> largely due to logging. Logging continues to be the lead driver of carbon losses from California’s forests. Harris et al. (2016) reported that between 2006 and 2010 logging was responsible for 60% of the carbon losses from California’s forests,<sup>267</sup> while Berner et al. (2017) reported that logging was the largest cause of tree mortality in California forests between 2003 and 2012.<sup>268</sup> Reducing vegetation removal—particularly by restricting harvest on public lands and lengthening harvest cycles on private

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complexity, 114 *Journal of Forestry* 373 (2016); Ingalsbee, Timothy, Whither the paradigm shift? Large wildland fires and the wildfire paradox offer opportunities for a new paradigm of ecological fire management, 26 *International Journal of Wildland Fire* 557 (2017).

<sup>260</sup> Schoennagel, Tania et al., Adapt to more wildfire in western North American forests as climate changes, 114 *PNAS* 4582 (2017).

<sup>261</sup> Schoennagel, Tania et al., Adapt to more wildfire in western North American forests as climate changes, 114 *PNAS* 4582 (2017).

<sup>262</sup> Boisramé, Gabrielle F.S. et al., Vegetation change during 40 years of repeated managed wildfires in the Sierra Nevada, California, 402 *Forest Ecology and Management* 241 (2017).

<sup>263</sup> Schoennagel, Tania et al., Adapt to more wildfire in western North American forests as climate changes, 114 *PNAS* 4582 (2017).

<sup>264</sup> Watson, James E.M. et al., The exceptional value of intact forest ecosystems, 2 *Nature Ecology and Evolution* 599 (2018).

<sup>265</sup> McIntyre, P.J. et al., Twentieth-century shifts in forest structure in California: denser forests, smaller trees, and increased dominance of oaks, 112 *PNAS* 1458 (2015).

<sup>266</sup> *Id.* at Figure 1a.

<sup>267</sup> Harris, N.L. et al., Attribution of net carbon change by disturbance type across forest lands of the conterminous United States, 11 *Carbon Balance and Management* 24 (2016).

<sup>268</sup> Berner, Logan T. et al., Tree mortality from fires, bark beetles, and timber harvest during a hot and dry decade in the western United States (2003-2012), 12 *Environmental Research Letters* 065005 (2017).

lands—are important actions for increasing forest health and net ecosystem carbon balance.<sup>269</sup> Overall, rather than promoting a massive ramp-up of thinning and further loss of carbon from forest ecosystems, the VTP should prioritize the opportunities to keep forest carbon/biomass circulating within forest ecosystems.<sup>270</sup>

**E. The PEIR Fails to Adequately Analyze or Mitigate the Program’s Water Quality Impacts.**

As detailed in the attached Technical Report from hydrologic consultant, Greg Kamman (Kamman & Kamman Hydrology), the PEIR’s analysis of water quality impacts is seriously flawed.<sup>271</sup> The document generally concedes that the various treatment activities have the potential to harm water quality but it never does the hard work of actually analyzing how the various treatment activities would affect impaired specific water bodies around the state. This approach is in direct violation of CEQA. Meaningful analysis of impacts effectuates one of CEQA’s fundamental purposes: to “inform the public and its responsible officials of the environmental consequences of their decisions before they are made.”<sup>272</sup> To accomplish this purpose, an EIR must contain facts *and* analysis, not just an agency’s bare conclusions.<sup>273</sup> Moreover, a legally adequate EIR “must contain sufficient detail to help ensure the integrity of the process of decisionmaking by precluding stubborn problems or serious criticism from being swept under the rug.”<sup>274</sup> Here the PEIR masks the true nature of the Program’s effects on water quality which could potentially be quite severe.

**i. The SPRs, identified to reduce the VTP’s impacts to a less than significant level are vague, incomplete and unenforceable.**

Instead of providing meaningful analysis, the PEIR relies on a series of Standard Project Requirements, or SPRs, before concluding that the CALVTP’s water quality impacts would be less than significant.<sup>275</sup> But this approach runs afoul of CEQA’s requirement that impacts first be fully disclosed and analyzed separately from the mitigation analysis. Determining whether or not a project may result in a significant adverse environmental impact is a key aspect of CEQA.<sup>276</sup> An EIR must “separately identify and analyze the significance of the impacts . . .

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<sup>269</sup> Law, Beverly E. et al., Land use strategies to mitigate climate change in carbon dense temperate forests, 115 PNAS 3663 (2018).

<sup>270</sup> In addition, the PEIR fails to adequately consider the impacts that the CALVTP will have on chaparral habitats. To that point, this letter incorporates by reference Letter from Richard W. Halsey, Director, California Chaparral Institute, to Edith Hannigan, Board Analyst, Board of Forestry and Fire Protection (Aug. 9, 2019).

<sup>271</sup> See Kamman, Greg, PG, CHG, Letter and hydrology report on Draft PEIR California Vegetation Treatment Program submitted to Shute, Mihaly & Weinberger LLP on August 2, 2019.

<sup>272</sup> *Laurel Heights Improvement Ass’n v. Regents of the Univ. of Cal.*, (1993) 6 Cal.4th 1112, 1123 [hereinafter “Laurel Heights II”].

<sup>273</sup> See *Citizens of Goleta Valley v. Bd. of Supervisors*, (1990) 52 Cal.3d 553, 568.

<sup>274</sup> *Kings Cnty. Farm Bureau v. City of Hanford*, (1990) 221 Cal. App. 3d 692, 733; see also 14 Cal. Code Regs. § 15151.

<sup>275</sup> PEIR at 3.11-23; 3.11-26—3.11-30.

<sup>276</sup> 14 Cal. Code Regs. § 15064(a).

before proposing mitigation measures.”<sup>277</sup> When an agency folds discussion of mitigation into discussion of the project and impacts, this “subverts the purposes of CEQA,” because it results in omission of “material necessary to informed decisionmaking and informed public participation.”<sup>278</sup> The PEIR here does just that, and in so doing, it fails to recognize that the Program’s impacts on water quality would be significant. Without a significance finding, the PEIR cannot adequately identify mitigation for the impact.

Moreover, merely listing a handful of SPR options that may or may not be selected is not sufficient for decisionmakers to determine whether water quality throughout the state from the treatment activities would in fact be protected. When a lead agency relies on mitigation measures (or SPRs) to find that project impacts will be reduced to a level of insignificance, there must be substantial evidence in the record demonstrating that the measures are feasible and will be effective.<sup>279</sup> Substantial evidence consists of “facts, a reasonable presumption predicated upon fact, or expert opinion supported by fact,” not “argument, speculation, unsubstantiated opinion or narrative.”<sup>280</sup> Because the PEIR’s conclusions are premised on unsupported assumptions, it fails far short of this threshold. As discussed below, the SPRs intended to protect water quality are deficient as some are vague and incomplete and others are ineffective. For these reasons, all of the SPRs are unenforceable.

- **SPR GEO-3: Stabilize Disturbed Soil Areas.** This SPR calls for the project proponent to stabilize soil disturbed during mechanical and prescribed herbivory treatments.<sup>281</sup> Yet, the only erosion control measure discussed in this SPR is mulch, which as Kamman explains, is likely not sufficient to stabilize disturbed areas in a manner that protects water quality. For example, the feasibility (and effectiveness) of installing mulch is compromised by remote locations and steep slopes. In addition, mulch treatment areas may require repeat application in order to remain effective for an entire rainy season. According to Greg Kamman, other sediment control measures would be far more effective yet the PEIR fails to include them. For example, if site access and/or conditions preclude the use of mulch, alternatives to mulching include the installation of erosion barriers, including: straw wattles, straw bales, contour-felled log erosion barriers (LEBs), contour trenching and scarification; and other natural and engineered structures that provide a mechanical barriers to slow overland flow, promote infiltration, trap sediment, and thereby reduce sediment movement on burned hillsides. It is illogical that SPR GEO-3 focuses exclusively on the use of mulch to control erosion from treatment activities when there are additional and potentially more effective sediment control measures.

Moreover, SPR GEO-3 only pertains to mechanical and prescribed herbivory treatments. According to Greg Kamman, erosion after a controlled burn can be quite severe. Despite

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<sup>277</sup> *Lotus v. Dept. of Transp.*, 167 Cal. Rptr. 3d 382, 393, 223 Cal. App. 4th 645, 658 (Cal. Ct. App. 2014).

<sup>278</sup> *Id.*

<sup>279</sup> *Sacramento Old City Ass'n v. City Council of Sacramento*, 280 Cal. Rptr. 478, 488, 229 Cal. App. 3d 1011, 1027 (Cal. Ct. App. 1991); *Kings Cnty.*, 270 Cal. Rptr. at 667.

<sup>280</sup> Pub. Resources Code § 21080(e)(1)-(2).

<sup>281</sup> PEIR at 3.7-22.

this fact, the PEIR fails to include *any* measures to control erosion after a prescribed burn.

- **SPR GEO-4: Erosion Monitoring.** This measure calls for the inspection of treated areas for proper erosion control prior to the rainy season or after a large rainfall event.<sup>282</sup> As an initial matter, the act of monitoring would do nothing to reduce or eliminate impacts. Monitoring, as described in the PEIR, would instead be undertaken to identify impacts. Consequently, this SPR confirms the potential for impacts to occur as a result of treatment. Moreover, although the measure calls for remediation in the event that erosion is discovered, it does not describe what these remediation efforts would involve nor any evidence that such remediation would or could occur prior to the rainy season. Consequently, this SPR is incomplete, ineffective, and unenforceable.
- **SPR GEO-7: Minimize Erosion.** This SPR calls for minimizing erosion by prohibiting heavy equipment on steep slopes.<sup>283</sup> The SPR explains that equipment would be restricted when a slope achieves a particular steepness but the PEIR provides no explanation as to how the particular criteria were developed. The SPR calls for restrictions once a slope exceeds 50 percent. Yet, heavy equipment on slopes that are less steep, e.g., 30 percent, could still cause excessive erosion, which in turn could degrade water quality. Moreover, although the SPR asserts that it applies to all treatment activities and types, it does not address or cover prescribed burn and herbivory treatments on very steep slopes (i.e., greater than 50 percent), which would result in an increased erosion potential. According to Greg Kamman, soil conditions resulting from any of the prescribed treatment activities on moderately steep slopes (i.e., 30-50 percent slopes) could, in combination with heavy rainfall, experience significant erosion. Thus, because SPR GEO-7 does not effectively account for an increase in erosion hazards due to the VTP's treatment activities, the PEIR lacks evidentiary support that water quality would be protected.
- **SPR GEO-8: Steep Slopes.** This measure calls for a professional to evaluate treatment areas with slopes greater than 50 percent for unstable areas and unstable soils and to identify measures to prevent loss of topsoil in such conditions.<sup>284</sup> This SPR is excessively vague and does not provide the required assurance that measures will be implemented in a manner that protects water quality. As an initial matter, the measure does not define the terms "unstable area" and "unstable soil." Again, slopes that are less steep than 50 percent can experience erosion and water quality impacts. The provision calling for a professional to "identify measures to prevent the loss of topsoil" is also particularly problematic. The PEIR fails to describe the type of measures that would be used to prevent topsoil loss. What if there are no feasible measures to prevent topsoil loss? Would the project proponent halt treatment? Nor does the SPR provide any actual commitment to implement a particular measure once it has been identified. This SPR is a classic example of deferred mitigation. CEQA allows a lead agency to defer mitigation only when: (1) an EIR contains criteria, or performance standards, to govern future

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<sup>282</sup> PEIR at 2-43.

<sup>283</sup> *Id.* at 3.7-23.

<sup>284</sup> *Id.*

actions implementing the mitigation; (2) practical considerations preclude development of the measures at the time of initial project approval; and (3) the agency has assurances that the future mitigation will be both “feasible and efficacious.”<sup>285</sup> Here, the PEIR meets none of these requirements. In short, this SPR fails to provide the evidentiary support that water quality would be protected.

- **SPR HYD-3: Water Quality Protections for Prescribed Herbivory.** This SPR calls for the project proponent to implement protections during herbivory treatments through measures such as fencing or the implementation of a 50-foot buffer zone around environmentally sensitive water bodies. PEIR at 3.11-21. Here too, the PEIR offers no evidentiary basis for the 50-foot buffer distance. In the absence of established scientific criteria, the PEIR lacks support for its assumption that a 50-foot buffer would be sufficient to protect environmentally sensitive water bodies. Moreover, the final bullet in this SPR indicates that “Grazing animals will be herded out of an area if accelerated soil erosion is observed.” PEIR at 3.11-21. Moving the herd after damage (accelerated erosion) has already occurred is not mitigation. The EIR errs because it does not identify the corrective action that would be taken once damage is observed.
- **SPR HYD-4: Identify and Protect Watercourse and Lake Protection Zones.** This SPR calls for the project proponent to establish Watercourse and Lake Protection Zones (WLPZs) as defined in California Code of Regulations, title 14, section 916.5 of the California Forest Practice Rules.<sup>286</sup> Establishing WLPZs has the potential to protect water quality by precluding or restricting forestry within stream corridors with the goal of protecting sensitive riparian/aquatic vegetation and wildlife habitats. However, the specific measures identified in SPR HYD-4 are just one part of the multi-step WLPZ determination process. According to Greg Kamman, the WLPZ width determination procedures presented in the PEIR are over simplified. There are much more stringent (increased width) WLPZ delineation procedures in streams containing anadromous and/or endangered species. The CalVTP does not follow the intent and protocols of the California Forest Practice Rules, but applies an oversimplified WLPZ procedure that would lead to significant threats to water quality, riparian and wetland habitats and aquatic species. In order for this SPR to effectively reduce the potential for water quality impacts, it must incorporate all of the relevant provisions of the WLPZ.
- **SPR BIO-1: Review and Survey Project-Specific Biological Resources.** This measure calls for a data review and a survey to be conducted prior to treatment.<sup>287</sup> The qualified forester or biologist would identify sensitive habitats such as wetlands, wet meadows, or riparian areas as well as a suitable buffer area for avoidance during project activities.<sup>288</sup> This measure is vague and incomplete. As an initial matter, this measure calls for an impact assessment to be completed; it does not ensure that water quality would not be

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<sup>285</sup> *Communities for a Better Env't v. City of Richmond*, (2010) 184 Cal. App. 4th 70, 94-95 [hereinafter “CBE”]; *San Joaquin Raptor Rescue Ctr. v. Cnty. of Merced*, (2007) 149 Cal. App. 4th 645, 669-71; 14 Cal. Code Regs. § 15126.4(a)(1)(B).

<sup>286</sup> PEIR at 3.11-21.

<sup>287</sup> PEIR at 2-35/36.

<sup>288</sup> *Id.*

degraded. In those instances where the forester or biologist determines that sensitive habitat cannot be clearly avoided, the measure calls for further surveys and potential consultation with regulatory agencies, yet there is nothing in the measure that calls for any action to be taken to actually protect resources, including water quality. Moreover, Part 1 of the measure, which contemplates a treatment where resources can be avoided calls for physical avoidance, i.e., the establishment of a buffer. Yet the PEIR fails to provide any criteria as to how the buffer would be implemented, e.g., the width and length of the buffer or how the forester or biologist would determine the effectiveness of the buffer. This becomes relevant as the method for delineating wetlands and riparian habitat within floodplains is determined by the WLPZ, Flood Prone Area, and Channel Migration Zones. Although the procedures for determining these zones have been established and are incorporated into CALFIRE management actions and regulatory oversight, all of this information is missing from the SPR. In order for SPR BIO-1 to reduce the potential for water quality impacts, all of the relevant provisions of the WLPZ from the CFPR must be included in this measure.

- **SPR BIO-5: Avoid Environmental Effects of Type Conversion and Maintain Habitat Function in Chaparral and Coastal Sage Scrub.** This measure calls for the project proponent to design treatment activities to avoid type conversion where native coastal sage scrub and chaparral are present.<sup>289</sup> Here too, the PEIR identifies a series of steps that would not, in any event, be sufficient to ensure that type conversion is avoided let alone that water quality is protected. The measure asserts that once a forester or a biologist develops a treatment design that avoids type conversion, the project proponent will demonstrate with substantial evidence that the habitat function of chaparral and coastal sage scrub would be maintained. The PEIR never explains which agency, if any, this evidence would be submitted to. The SPR then asserts that the treatment design “will seek to maintain a minimum percent cover of mature native shrubs to maintain habitat function.”<sup>290</sup> Yet this SPR is excessively vague (i.e., it does not identify what percent cover is necessary to maintain habitat function and does not define “habitat function”), and unenforceable (i.e., language such as “seek to maintain” does not provide the required assurance that a suitable amount of cover will in fact be maintained). Moreover, in clear violation of CEQA, the PEIR explicitly defers the criteria for defining and avoiding type conversion to the project proponent.<sup>291</sup> Finally, it is important to emphasize that SB 1260 is clear that vegetation treatments shall occur “only if [CALFIRE ] finds that the activity will not cause ‘type conversion,’”<sup>292</sup> yet the PEIR permissively punts this responsibility to the project proponent. In short, there is nothing in SPR-BIO-5 that ensures that treatment activities will not result in type conversion.

In sum, the SPRs included in the PEIR are not sufficient to ensure that the Program’s treatment activities would not degrade water quality. Consequently, the PEIR cannot rely on

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<sup>289</sup> PEIR at 3.11-17/18.

<sup>290</sup> PEIR at 3.11-18.

<sup>291</sup> See CBE, 184 Cal. App. 4th at 93-95.

<sup>292</sup> S.B. 1260 § 18.4483(b)(2) (Cal. 2018).

these measures to conclude that the Program’s water quality impacts would be less than significant.

**ii. The PEIR fails to adequately disclose, analyze, and assess the significance of, and mitigate for, impacts to water quality that would result from vegetation treatments.**

As discussed above, the PEIR fails to provide meaningful analysis of the Program’s water quality effects opting instead to rely on ineffective mitigation measures. The scant impact analysis that does exist is vague and superficial. By failing to analyze the extent and severity of impacts to water quality, the PEIR downplays the effects of the VTP. The end result is a document which is so crippled by its approach that decisionmakers and the public are left with no real idea as to the severity and extent of environmental impacts.<sup>293</sup>

The PEIR clearly acknowledges the potential for water quality impacts as a result of, for example, prescribed burning.<sup>294</sup> Despite clearly acknowledging that prescribed burns can impact water quality, particularly in chaparral and shrublands, the PEIR stops short of analyzing the severity and extent of these potential impacts. Instead, time and again the document attempts to downplay the effect that the VTP would have on the potential for erosion (and water quality impacts) by asserting that wildfires produce more erosion than do prescribed burns.<sup>295</sup> Such statements suggest that the EIR is comparing the Program’s potential to degrade water quality not to the existing environmental setting, as CEQA requires, but instead to a hypothetical scenario where the same plot of land would burn in a wildfire.

The PEIR’s use of a future indeterminate baseline (i.e., future wildfire) to calculate the CALVTP’s impacts violates CEQA. CEQA requires a description of the “physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation [NOP] is published.”<sup>296</sup> In *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, the California Supreme Court recognized that, under limited circumstances, a departure from existing conditions (i.e., NOP date) may be appropriate,<sup>297</sup> but only when “justified by substantial evidence that an analysis based on existing conditions would

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<sup>293</sup> See, e.g., *Berkeley Keep Jets Over the Bay Comm. v. Bd. of Port Comm’rs*, (2001) 91 Cal. App. 4th 1344, 1370-71; *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.*, (1997) 60 Cal. App. 4th 1109, 1123-24; *Santiago Cnty. Water Dist. v. Cnty. of Orange*, (1981) 118 Cal. App. 3d 818, 831.

<sup>294</sup> See e.g., PEIR at 3.11-23 (“Compared to forested and grassland environments, prescribed fire in chaparral and shrublands is more likely to result in severe burns and increased sediment loading.”); see also PEIR at 3.11-24 (“Prescribed burning in California’s conifer forests have showed little to no increase in erosion, whereas prescribed burning in chaparral vegetation causes a marked increase in runoff and erosion. The higher rates of erosion in chaparral are because prescribed fire in chaparral can burn at higher intensity, remove more surface organic material, and have a higher likelihood for post-fire water repellency”) (citations omitted).

<sup>295</sup> See PEIR at 3.11-24.

<sup>296</sup> 14 Cal. Code Regs. § 15125(a)(1).

<sup>297</sup> 304 P.3d 499, 57 Cal. 4th 439 (Cal. 2013).

tend to be misleading or without informational value to EIR users.”<sup>298</sup> The primary underlying legal principle set forth in the *Smart Rail* case is that the use of a future scenario as an impact baseline should be avoided where the practical consequence of such an approach would be to artificially understate the true environmental consequences of proposed projects. That is precisely what the PEIR’s approach does here.

The fundamental problem with the PEIR’s tactic is the underlying premise that fire will inevitably occur in the location where prescribed burns would be implemented and the impacts from wildfire would be worse than those resulting from a prescribed burn. The PEIR’s faulty reasoning results in a substantial underestimation of the Program’s water quality impacts. Because the location of future wildfires is so unpredictable, the most likely scenario is that there would be water quality impacts from prescribed burns *and* from future wildfires. Existing conditions, rather than a hypothetical future scenario (i.e., wildfire) should have been the basis for determining the significance of the VTP’s water quality impacts.

Moreover, the PEIR’s premise—that prescribed burns have less potential for erosion than do wildfires—is contradicted by scientific studies. According to Greg Kamman, recent research by a team from the University of California, Merced and the Desert Research Institute presented in ScienceDaily has identified that low severity burns—in which fires move quickly and soil temperature does not exceed 250 Celsius—cause extensive damage to soil structure and organic matter.<sup>299</sup> This research found that soil structure damage associated with prescribed, low severity fires was not apparent immediately after the fire, but deteriorated over the weeks and months that followed the fire. Study results also determined that damage to soil structure is worse if the soils are wet. The effects of the damaged soil structure include reduced water infiltration, increased runoff and increased erosion potential.<sup>300</sup> These findings are directly counter to the PEIR’s conclusions. The EIR should be revised to include a comprehensive evaluation of the relationship between low severity burns impact on soil structure and water quality. If impacts are determined to be significant, the revised EIR should then identify feasible mitigation measures or Program alternatives.

As discussed above, the PEIR relies largely on the implementation of the SPRs to conclude that prescribed burning would result in less than significant impacts on water quality. However, as we explained above, the SPRs are vague, incomplete and unenforceable and do not provide the required evidentiary support that impacts would be reduced to a less than significant level. In fact, the PEIR concedes this point.<sup>301</sup> However, in chaparral and shrub dominated environments the risk to water quality is greater due to the potential for severe burns and water repellency. An assertion that an SPR would “minimize the likelihood of an impact” does not constitute substantial evidence that impacts would be less than significant.

Nor does the PEIR provide the required evidentiary support that the implementation of manual or mechanical treatments would have less than significant water quality impacts. The

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<sup>298</sup> *Id.* at 504.

<sup>299</sup> See Kamman, Greg, PG, CHG, Letter and hydrology report on Draft PEIR California Vegetation Treatment Program submitted to Shute, Mihaly & Weinberger LLP on August 2, 2019, at 4.

<sup>300</sup> *Id.*

<sup>301</sup> See PEIR at 3.11-25 (“The SPRs described above *would minimize the likelihood* that prescribed burning in trees and grass fuel types would result in adverse effects to water quality.”) (emphasis added).



PEIR calls for the SPRs to incorporate “*relevant elements*” of the CFPRs pertaining to erosion and control of water bodies,<sup>302</sup> yet the document never identifies which specific CFPR elements would be incorporated or how they would be expected to control erosion from manual or mechanical treatments. Finally, the PEIR ultimately concludes that manual or mechanical treatments activities would be “*unlikely*” to result in ground disturbance or adverse effects to water quality.<sup>303</sup> Again, CEQA requires more than such vague, qualified assurances that impacts will be less than significant.

The PEIR fares no better in its “analysis” of impacts from the ground application of herbicides. Here, the document clearly acknowledges the potential for severe impacts.<sup>304</sup> The PEIR explains that even with the incorporation of SPRs, the accidental misapplication or spill could degrade water quality.<sup>305</sup> To address this impact, the PEIR calls for the Program to develop a Spill Prevention and Response Plan that projects would maintain on treatment sites.<sup>306</sup> There is no logical reason, however, why this Plan could not have been prepared now, prior to Program approval, so that the public and decisionmakers could verify that the measures included in the Plan would ensure the protection of water quality. A close review of SPR HAZ-5, which is the measure that calls for the Spill Prevention and Response Plan, simply calls for “a list of items required in an onsite spill kit that will be maintained throughout the life of the activity.”<sup>307</sup> This vague reference to a “list of items” is not sufficient; the PEIR must identify the specific items that would be used to ensure that water quality is not degraded. As with the PEIR’s analysis of the other treatment activities, the PEIR lacks the required factual support to conclude that impacts from the ground application of herbicides would not result in significant water quality impacts.

**iii. The PEIR fails to adequately disclose, analyze, and assess the significance of, and mitigate for, cumulative impacts to water quality.**

The PEIR fails to adequately analyze or mitigate the Program’s cumulative effects on water quality. First, the list of reasonably foreseeable future projects considered in the EIR is under-inclusive, especially in light of the potential geographic scope of certain potentially significant water quality impacts. As Greg Kamman explains, the list of related projects and plans included in the cumulative impact chapter is dominated by forestry and land use plans. Many important water quality plans that effect and control water quality in watersheds that lie within the Program area are missing from the analysis, including but not limited to: TMDLs for rivers throughout California; Central Coast and Central Valley Agriculture Orders; and vineyard and cannabis General Waste Discharge Requirements.

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<sup>302</sup> *Id.* at 3.11-26 (emphasis added).

<sup>303</sup> *Id.* at 3.11-26 (emphasis added).

<sup>304</sup> *See id.* at 3.11-28 (explaining that herbicides can be carried in stormwater runoff or carried through soils to leach into groundwater, and that herbicides can also reach water through drift, which is the airborne movement of herbicides).

<sup>305</sup> PEIR at 3.11-29.

<sup>306</sup> *Id.*; *see also id.* at 2-44.

<sup>307</sup> PEIR at 2-44.

Nor does the PEIR actually conduct the necessary analysis of the Program's cumulative water quality impacts. In fact, it never even mentions the projects it purports to analyze.<sup>308</sup>

The PEIR also does not comply with CEQA's requirement that agencies first determine whether cumulative impacts to a resource are significant, and then determine whether a project's impacts are cumulatively considerable (i.e., significant when considered in conjunction with other past, present and reasonably foreseeable projects).<sup>309</sup> The PEIR skips the first step and focuses only on the second. This error causes the document to underestimate the significance of the Project's cumulative impacts because it focused on the significance of the Program's impacts on their own as opposed to considering them in the context of the cumulative problem. It is wholly inappropriate to end a cumulative analysis on account of a determination that a project's (or Program's) individual contribution would be less than significant. Rather, this should constitute the beginning of the analysis.

Moreover, the PEIR cannot credibly conclude that the Program would avoid significant impacts to water quality. As we explained, the PEIR fails to provide any meaningful analysis of the water quality impacts that would result from the Program. It also lacks the evidentiary basis that significant water quality impacts would be avoided through the incorporation of SPRs.

The PEIR must be revised to take into account each of the cumulative projects that has the potential to result in cumulatively considerable environmental impacts. Furthermore, the PEIR must identify feasible mitigation measures capable of reducing these environmental impacts.

#### **F. The PEIR Fails to Adequately Analyze and Mitigate the Impacts from Herbicide Application.**

##### **i. The PEIR's description of herbicide application is vague and conflicting.**

The PEIR fails to accurately depict the project because it includes a vague and shifting description of the overall project area and treatment methods for herbicide applications. An accurate depiction of the Project is essential to the public's understanding of the project.<sup>310</sup>

The PEIR engages in a shifting description of the area to be treated with herbicides. The PEIR states that 20.3 million acres in California are subject to treatment with "up to approximately 250,000 acres" treated annually.<sup>311</sup> Of this treatment area 10 percent are "reasonably expected" to be treated with herbicides.<sup>312</sup> This would result in an overall herbicide application of roughly 2.03 million acres with 25,000 acres treated annually.

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<sup>308</sup> Compare PEIR at 4-3 (which lists the past, present and reasonably foreseeable probable future activities, projects and plans identified as contributing to potential cumulative impacts) with PEIR at 21.

<sup>309</sup> 14 Cal. Code. Regs. § 15064(h)(1).

<sup>310</sup> *Cnty. of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192-193 ["accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient" CEQA analysis].

<sup>311</sup> PEIR at 2-1.

<sup>312</sup> PEIR at 2-28.

However, in appendices referencing herbicide toxicity, the PEIR proposes “to treat approximately 6,000 acres with chemical treatments” within the larger “20.3-million-acre treatable landscape.”<sup>313</sup> The PEIR also references that the “treatable landscape includes 6 million acres of forest land” and 7 million acres of timberland.<sup>314</sup> These varying descriptions of treatment areas, by orders of magnitude, fail to provide an accurate description of the scale and magnitude of the herbicide application on the landscape.

**ii. The PEIR fails to adequately analyze the risks from herbicide application.**

The PEIR fails to adequately analyze the risks from herbicide application by failing to disclose the impacts from individual chemicals and failing to analyze the varying risks from chemicals approved for use.

For example, the PEIR fails to disclose the carcinogenic risk of glyphosate and mischaracterizes the cancer risk from glyphosate. In July 2017 the California Office of Environmental Health and Hazard Assessment (OEHHA) listed glyphosate under Proposition 65 because it is “known to the state of California to cause cancer.”<sup>315</sup> However, the PEIR claims there is “[n]o evidence of carcinogenicity”, that carcinogenicity is based on “[u]nvalidated claims”, discredits court rulings regarding the risks associated with glyphosate and cancer, and then refers to Appendices HAZ-1 and HAZ-2 for further details.<sup>316</sup> Appendix HAZ-1 and HAZ-2 also fail to disclose the state of California’s determination that glyphosate is known to cause cancer. The PEIR must fully disclose and analyze the potential risks to humans and the environment from the products approved for use in the PEIR. The failure to fully disclose the toxicity of glyphosate precludes an accurate analysis of the environmental impacts of the use and application of those that product.

The PEIR fails to adequately analyze the water quality impacts from herbicides. The massive scale of herbicide application called for in the PEIR leads to potentially significant environmental impacts due to the pollution of water bodies and water supplies from runoff and leaching into groundwater. The PEIR discusses the potential water quality impacts from herbicides in under two pages and improperly analyzes the impacts from those 11 active ingredients.<sup>317</sup> One way the PEIR fails to accurately disclose and analyze the impacts of herbicide application is by treating all of those products equally and failing to analyze the different chemical qualities of the herbicides approved in the PEIR.

The PEIR fails to consider key characteristics of the herbicides, such as water solubility, which impact water quality. For example, Hexazinone and Clopyralid, two herbicides listed under this treatment activity, are highly water soluble which makes them more prone to leach

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<sup>313</sup> PEIR Appendix HAZ-2 at 4.

<sup>314</sup> PEIR at 3.3-8.

<sup>315</sup> Office of Environmental Health and Hazard Assessment, Chemical Listed Effective July 7, 2017 As Known to the State of California to Cause Cancer: Glyphosate, <https://oehha.ca.gov/media/downloads/cnrn/finallistingnoticeglyphosate07072017.pdf>

<sup>316</sup> PEIR at 3.10-14 to 3.10-15.

<sup>317</sup> PEIR at 3.11-28 to 3.11-29.

into groundwater and affect water quality.<sup>318</sup> Because hexazinone “is water soluble and does not bind strongly with soils” it “is of particular concern for groundwater contamination.”<sup>319</sup> Once a water system is contaminated with herbicides, treatment is often infeasible.<sup>320</sup>

Since the PEIR does not discuss herbicide characteristics that would affect the likelihood of herbicides reaching waterbodies, it is impossible for it to adequately discuss the impact this treatment activity could have on water quality.

### **G. The PEIR Fails to Adequately Analyze or Mitigate the Program’s Visual/Aesthetic Impacts.**

The signatories to this letter acknowledge that visual impacts are an inevitable component of forest thinning projects. Therefore, it is not our intention that aesthetic considerations stand in the way of critical community and home protection projects. But visual and aesthetic impacts are one of the criteria that the EIR is supposed to disclose analyze, and this DEIR has failed to adequately consider these impacts for a VTP that applies to 20 million acres for the indefinite future. Under CEQA, it is the State’s policy to “[t]ake all action necessary to provide the people of this state with . . . enjoyment of aesthetic, natural, scenic, and historic environmental qualities.”<sup>321</sup> Thus, courts have recognized that aesthetic issues “are properly studied in an EIR to assess the impacts of a project.”<sup>322</sup>

The CALVTP proposes vegetation treatment on about 20 million acres throughout California’s natural lands. The PEIR acknowledges that the Program could degrade the visual environment and affect scenic vistas,<sup>323</sup> yet it fails to provide a description of the visual setting sufficient to support a meaningful analysis of these impacts. The document merely discusses the types of scenic views found around the state and provides photographs of tree, shrub, and grass fuel types found throughout California.<sup>324</sup> These vague and non-specific descriptions of the scenic resources that would be impacted by the Program are not sufficient for purposes of CEQA compliance. An EIR’s description of a project’s environmental setting crucially provides “the baseline physical conditions by which a Lead Agency determines whether an impact is significant.”<sup>325</sup> “Without a determination and description of the existing physical conditions on the property at the start of the environmental review process, the EIR cannot provide a

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<sup>318</sup> National Center for Biotechnology Information. PubChem Database. Clopyralid, CID=15553, <https://pubchem.ncbi.nlm.nih.gov/compound/Clopyralid>; National Center for Biotechnology Information. PubChem Database. Hexazinone, CID=39965, <https://pubchem.ncbi.nlm.nih.gov/compound/Hexazinone>

<sup>319</sup> Tu, Mandy, Hexazinone, Weed Control Methods Handbook, The Nature Conservancy (2001), <https://www.invasive.org/gist/products/handbook/15.Hexazinone.pdf>, at 7f1.

<sup>320</sup> Currell, Christina, Keeping herbicides out of groundwater and surface water, Michigan State University Extension (Feb. 8, 2019).

<sup>321</sup> Pub. Resources Code § 21001(b).

<sup>322</sup> *Pocket Protectors v. City of Sacramento*, (2004) 21 Cal. Rptr. 3d 791, 816, 817 (overturning a mitigated negative declaration and requiring an EIR where proposed project potentially affected street-level aesthetics) (citation omitted).

<sup>323</sup> PEIR at 3.2-16.

<sup>324</sup> *See id.*, Figures 3.2-1, 3.2-3.

<sup>325</sup> CEQA Guidelines § 15125(a).

meaningful assessment of the environmental impacts of the proposed project.”<sup>326</sup> Here, the PEIR fails to adequately disclose the resources that could be affected as a result of the various treatment activities and therefore undercuts the legitimacy of the environmental impact analysis from the outset.

The deficiencies in the PEIR’s aesthetic impact analysis extend beyond its flawed approach to describing the environmental setting. Rather than provide a comprehensive analysis of the Program’s impacts to scenic views, vistas, and other scenic resources, the PEIR concludes that the incorporation of SPRs into the treatment design will ensure that the CALVTP’s treatment activities would not result in significant impacts to visual resources. The PEIR lacks evidentiary support for these conclusions. As we explain below, the SPRs pertaining to scenic resources are vague, incomplete, ineffective, and unenforceable:

- **SPR AD-4: Public Notifications for Prescribed Burning.** This SPR calls for the project proponent to notify the public of prescribing burning through the posting of signs, publishing notice in newspapers, and notifying the local county supervisor.<sup>327</sup> None of these actions would do anything to prevent the destruction or degradation of visual resources from the various treatment activities.
- **SPR AES-1: Vegetation Thinning and Edge Feathering.** This measure calls for the project proponent to take measures during mechanical and manual treatments to thin and feather adjacent vegetation to mimic forms of natural clearings.<sup>328</sup> This measure is unenforceable as it includes language such as “as reasonable or appropriate.” Because this measure leaves the nature of the thinning and feathering to the discretion of the project proponent, there is no indication it would protect scenic visual resources.
- **SPR AES-2: Avoid Staging Within Viewsheds.** This measure calls for the project proponent to stage vegetation treatment vehicles and equipment in a location outside of the viewshed.<sup>329</sup> This measure does not address the vegetation treatment activities themselves and therefore would be completely ineffective in protecting visual resources.
- **SPR AES-3: Provide Vegetation Screening.** This SPR calls for the project proponent to take action to preserve sufficient vegetation in treatment areas to screen views.<sup>330</sup> This measure is vague (e.g., calls for preserving *sufficient* vegetation), and unenforceable (e., states that action will be taken as *reasonable or appropriate*). Consequently, this measure would not protect scenic resources.
- **SPR AQ-3: Create Burn Plan.** This measure calls for the project proponent to create a burn plan that, among other things, predicts fire behavior, and which calculates consumption of fuels and tree mortality in an effort to minimize soil burn severity.<sup>331</sup>

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<sup>326</sup> *Save Our Peninsula Comm. v. Monterey Cnty. Bd. of Supervisors*, 104 Cal. Rptr. 2d 326, 341, 87 Cal.App.4th 99, 119. (Cal Ct. App. 2001).

<sup>327</sup> PEIR at 3.2-14.

<sup>328</sup> *Id.*

<sup>329</sup> *Id.*

<sup>330</sup> *Id.*

<sup>331</sup> *Id.* at 3.2-15.

While this is an important measure, it simply calls for the project to be implemented, i.e., burning to occur and fuel vegetation to be consumed. It does nothing to ensure that visual resources would be protected.

- **SPR REC-1: Notify Recreational Users of Temporary Closures.** This measure calls for the project proponent to coordinate with a recreation area or facility's owner/manager pertaining to temporary closure.<sup>332</sup> A measure calling for the temporary closure of a recreation area during a vegetation treatment activity may be important to protect public health and safety but it would do nothing to protect scenic resources from treatment activities.

After identifying the SPRs, the PEIR provides a cursory analysis of each treatment activity's potential to impact scenic views and scenic vistas before promptly concluding that impacts would be less than significant. The PEIR's discussion of the visual effects that would result from prescribed burns is particularly flawed. The document devotes the majority of the discussion to views of equipment and vehicles, stating that it would be unlikely that they would significantly degrade views because this equipment would be only temporarily visible for motorists traveling along scenic highways and that, with notification, potential viewers would have the choice to avoid treatment areas.<sup>333</sup> As an initial matter, the PEIR may not avoid conducting a thorough analysis of the visual effects of prescribed burns under the assumption that such impacts would be temporary. CEQA requires analysis of temporary impacts.<sup>334</sup>

Nor can the PEIR assume that by providing the public the choice to enter a burned area, the visual effect would somehow be diminished. The fact remains that after a prescribed burn, the natural landscape would be replaced with charred duff. As a comparison of PEIR Figures 3.2-5 and 3.2-7 makes clear, it is self-evident that replacing a natural landscape with charred soils would have a significant adverse effect upon the views and beauty of the treatment area.

Finally, the PEIR claims that because prescribed burning already takes place under existing vegetation treatment programs, the increase in pace and scale of prescribed burning under the proposed CALVTP would not introduce a new activity on the landscape, but would simply expand the areas being treated under the existing program.<sup>335</sup> This absurd statement is tantamount to stating that since habitat is already lost through land use development, additional development would be inconsequential. In fact, the opposite is true. The PEIR must examine the effects from the CALVTP, along with the effects from CALFIRE's existing treatment program. Moreover, this "drop-in-the-bucket" approach to cumulative impacts has been explicitly rejected by the courts. In *Kings County Farm Bureau v. City of Hanford*, the court invalidated an EIR that concluded that increased ozone impacts from the project would be insignificant because it would emit relatively minor amounts of precursor pollutants compared with the large volume already emitted by other sources in the county.<sup>336</sup> The *Kings County Farm*

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<sup>332</sup> *Id.* at 3.2-15.

<sup>333</sup> PEIR at 3.2-17.

<sup>334</sup> CEQA Guidelines § 15126.2(a) (agency must analyze both short- and long-term impacts).

<sup>335</sup> PEIR at 3.2-17.

<sup>336</sup> *Kings County Farm Bureau v. City of Hanford*, 221 Cal. App. 3d at 717-18 (1990).

*Bureau* court aptly stated, “The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.”<sup>337</sup> Similarly, in *Los Angeles Unified School Dist. v. City of Los Angeles*, the court invalidated an EIR that deemed a project’s cumulative traffic noise impact insignificant in light of existing traffic noise in the project area.<sup>338</sup> Likewise, here, the PEIR may not minimize the Program’s aesthetics impacts by comparing them to the already significant impacts from CALFIRE’s existing treatment activities.

In sum, there can be no doubt that the CALVTP’s extensive treatment activities will visually degrade the natural environment.<sup>339</sup> In its current form, the PEIR is simply masking these effects. The EIR should be revised to provide a comprehensive analysis of the CALVTP’s aesthetic impacts and identify feasible mitigation measures or Program alternatives for those impacts that are determined to be significant.

## **VI. The Alternatives Analysis Is Inadequate and Fails to Consider Less Environmentally Damaging Alternatives.**

### **A. The PEIR’s Alternatives Analysis is Inadequate.**

A core substantive requirement of CEQA is that “public agencies should not approve projects as proposed if there are feasible alternatives . . . which would substantially lessen the significant environmental effects of such projects.”<sup>340</sup> Accordingly, a major function of the EIR “is to ensure that all reasonable alternatives to proposed projects are thoroughly assessed by the responsible official.”<sup>341</sup> To fulfill this function, an EIR must consider a “reasonable range” of alternatives “that will foster informed decisionmaking and public participation.”<sup>342</sup> As explained below, the PEIR for the CALVTP fails to heed these basic mandates.

First, while the document purports to identify five alternatives (in addition to the No Program Alternative), with the exception of Alternative A: Reduced Scale of Treatments, the remaining four alternatives result in similar or even greater environmental impacts. *See* Table 6-1. Alternatives that would increase the Program’s environmental impacts do not contribute to the “reasonable range” of alternatives required by CEQA.<sup>343</sup>

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<sup>337</sup> *Id.* at 661.

<sup>338</sup> *Los Angeles Unified School Dist. v. City of Los Angeles* 58 Cal. App. 4th 1019, 1025-26 (1997).

<sup>339</sup> PEIR at 4-72.

<sup>340</sup> Pub. Resources Code § 21002; *see also* 14 Cal. Code Regs. §§ 15002(a)(3), 15021(a)(2); *Citizens for Quality Growth v. City of Mount Shasta* 198 Cal.App.3d 433, 443-45 (1988).

<sup>341</sup> *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 400 (quoting *Wildlife Alive v. Chickering* (1976) 18 Cal.3d 190, 197).

<sup>342</sup> 14 Cal. Code Regs. § 15126.6(a).

<sup>343</sup> *See* Pub. Resources Code § 21100(b)(4); 14 Cal. Code Regs. § 15126.6(a) & (b).

Second, the only alternative that would appear to actually reduce the Program’s significant effects as compared to the proposed Program is Alternative A: Reduced Scale of Treatments.<sup>344</sup> The PEIR explains that Alternative A is intended to substantially lessen potentially significant environmental impacts that could result from treatment types by reducing the annual target acreage of treatments.<sup>345</sup> Yet, this alternative would appear to be identical to the treatment targets of the prior versions of the CALVTP.<sup>346</sup> As environmental organizations, wildlife regulatory agencies, and expert scientists in the fields of fire science and ecology, fire management, biogeography, native plant ecology, biodiversity, and wildlife conservation biology explained in their comments on the prior versions of the CALVTP, the prior CALVTPs would have resulted in devastating environmental impacts. Moreover, the prior VTPs would not have achieved the Board’s mission of safeguarding the people and protecting the property and resources of California from the hazards associated with wildfire. Finally, the Board and CALFIRE must have already determined that the treatment targets in Alternative A are infeasible otherwise these agencies would have continued to pursue the approaches taken in the prior VTPs. For these reasons, it makes no sense to include Alternative A as an alternative to the Program.

Third, the Board and CALFIRE have defined the Program’s objectives so narrowly as to preclude a reasonable alternatives analysis. The PEIR states that “CALFIRE must substantially increase the pace and scale of vegetation treatments” to achieve a “target up to 250,000 acres per year” and that “CALFIRE must increase the use of prescribed burning as a vegetation treatment tool.”<sup>347</sup> This is tantamount to saying that the objective of the Program is to implement the Program. Narrowing the Program’s goals in this way tilts the analysis of alternatives unavoidably—and illegitimately—toward the VTP as proposed. This problematic approach is best demonstrated in the PEIR’s evaluation of Alternative B: WUI Fuel Reduction Only. Here, the PEIR admits that it could be difficult to identify and plan enough treatment activities to achieve the treatment target area each year.<sup>348</sup> The PEIR also illogically rejects measures to implement and enforce defensible space within 100 feet of homes and other structures claiming such measures would not meet the Program’s objectives.<sup>349</sup> Yet, such defensible space measures have been repeatedly shown to be effective in protecting people and structures which, of course, is—or should be—the sole purpose of CALFIRE’s Program. Consequently, it appears clear that rather than providing the required reasoned, objective analysis, the PEIR’s alternatives analysis has become “nothing more than [a] post hoc rationalization[.]” for a decision already made.<sup>350</sup>

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<sup>344</sup> See PEIR at Table 6-1.

<sup>345</sup> PEIR at 6-11

<sup>346</sup> See PEIR at 6-4, Alternative A: Reduced Scale of Treatments, which would treat up to 60,000 acres per year with a combination of WUI fuel reduction, fuel break, and ecological restoration projects across the entire treatable landscape; see also PEIR at 6-11.

<sup>347</sup> PEIR at 2-1.

<sup>348</sup> PEIR at 6-19.

<sup>349</sup> PEIR at 6-46.

<sup>350</sup> *Laurel Heights*, 47 Cal. 3d at 394.



Moreover, the PEIR offers no evidentiary support for its assertion that focusing on defensible space while foregoing vegetation treatments would not achieve the same level of wildfire risk reduction to life and property.<sup>351</sup> It is particularly problematic that CALFIRE is not enforcing its defensible space program (a program that has been demonstrated to save lives and property) while instead pursuing the ill-advised VTP.<sup>352</sup> This article reveals that, according to CALFIRE citation data, violations of defensible space rules are going unaddressed across the state:

Between 2010 and 2018, CALFIRE conducted hundreds of thousands of inspections but issued just 780 fines. By comparison, the Los Angeles County Fire Department, which does its own inspections, issued more than 1,900 citations in fiscal 2013-14. Last year, CALFIRE inspected about 128,000 properties and issued just 62 fines, according to the data. More than 17,000 failed to meet the required guidelines but faced no financial repercussions, even after multiple visits by inspectors. Considering that CALFIRE inspects between 10 and 20 percent of the nearly 700,000 parcels in its jurisdiction every year, there are likely tens of thousands of properties throughout the state overgrown with flammable vegetation, putting entire communities at risk.<sup>353</sup>

Again, the PEIR may not define the objectives of its Program so narrowly as to preclude informed decisionmaking. As discussed below, there are viable alternatives to wildfire management that would be far more effective in protecting lives and structures, with far less environmentally destructive consequences. These alternatives must be evaluated in a revised EIR.

Fourth, the PEIR fails to provide an accurate comparative analysis of the No Program Alternative's and the proposed Program's environmental impacts. The No Program Alternative is a continuation of CALFIRE's existing program yet the EIR asserts that the No Program Alternative would have similar environmental impacts compared to the proposed Program. This assertion does not withstand scrutiny, because as discussed below, the magnitude of treatments proposed by the current VTP would be far greater than the prior VTP. Moreover, the PEIR makes clear that the magnitude of treatments under the No Program Alternative would be limited compared to the Program.<sup>354</sup> It is illogical then that the PEIR identifies the No Program's environmental impacts as being similar to or even greater than the proposed Program's.

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<sup>351</sup> PEIR at 6-46.

<sup>352</sup> See Smith, Joshua E., California's not enforcing wildfire-prevention rules for homeowners, leaving tens of thousands of properties vulnerable to big blazes, San Diego Union Tribune, July 7, 2019, <https://www.sandiegouniontribune.com/news/environment/story/2019-06-11/californias-not-enforcing-wildfire-prevention-rules-for-homeowners-leaving-tens-of-thousands-of-properties-vulnerable-to-big-blazes> (last visited 8/9/19).

<sup>353</sup> *Id.*

<sup>354</sup> See PEIR at 6-4 stating, "Under the No Program Alternative, CALFIRE and the Board would need to recognize constraints on the pace and scale of treatments associated with the necessity to use project-by-project environmental review and permitting, because of the absence of programmatic approval of the full

Under CALFIRE 's existing treatment program, vegetation treatments have been limited, averaging approximately 7,000 acres treated annually over the past 14 years.<sup>355</sup> Most recently, CALFIRE treated approximately 33,000 acres in 2017/2018 using the same methods proposed under the VTP. *Id.* The proposed Program, on the other hand, would treat 500,000 acres of non-federal lands per year within 5 years.<sup>356</sup> Thus, every year, the current proposed Program would treat 467,000 more acres of land than the existing program (the No Program Alternative). This equates to a 1,415 percent increase! Clearly, because the Program would treat so much additional acreage on a yearly basis, it would result in far greater environmental impacts than the No Program Alternative.

The PEIR largely relies on the fact that the proposed Program has more environmental protections than the No Program and thus would result in similar environmental impacts notwithstanding the increase in the amount of land treated. This assertion also does not withstand scrutiny. The PEIR alleges that the SPRs prepared for the proposed Program would avoid and minimize impacts on a statewide basis (PEIR at 6-7), however, this is not the case. As we have explained, the SPRs intended to reduce the VTP's environmental impacts are vague, incomplete, ineffective, and unenforceable. Moreover, as the PEIR clearly acknowledges, CALFIRE 's existing program is currently subject to CEQA so environmental protections are in place.<sup>357</sup> The EIR should be revised to provide an accurate comparative analysis of the No Program Alternative's and the Program's environmental impacts.

Fifth, the PEIR states that Alternative C: Modified WUI Fuel Reduction and Fuel Breaks was developed in response to comments that advocates for including an alternative similar to the Fire Management Plan prepared for the Santa Monica Mountains National Recreation Area (SMMNRA Fire Plan).<sup>358</sup> Yet, a close review of SMMNRA Fire Plan reveals that it bears no similarity to Alternative C. As an initial matter, the SMMRNA Fire Plan focuses on defensible space of 100 feet from structures generally, and then a reduction of annual grasslands due to their flammability. Unlike Alternative C, the goal of the SMMNRA Fire Plan is "strategic fuel modification" which would apply fuel treatments in discrete areas:

The goal of strategic fuel modification treatments is to create new opportunities for firefighters to practice fire suppression safely and effectively in areas where successfully limiting fire spread could substantially reduce the overall size of an expected large wildfire. The premise of strategic fuel modification is that by studying historic fire progressions and fire weather patterns, and then applying general tactical principles, discrete areas of fuel treatments can be identified that make an important difference in helping firefighters stop spread of large wildfires. It is generally easier to demonstrate

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spectrum of management tools"; and "it is reasonable to expect that any increase in the amount of vegetation treatment would be limited without the streamlining provisions of the CalVTP".

<sup>355</sup> PEIR at 6-5.

<sup>356</sup> PEIR at 6-6.

<sup>357</sup> See PEIR at 6-7.

<sup>358</sup> PEIR at 6-23.

the effectiveness of defensible space in protecting structures than it is to demonstrate the effectiveness of strategic fuel modification.

As applied in the SMMNRA, the objectives of strategic fuel modification projects are to manage fuels in annual grasslands on NPS and co-operatively managed park lands to reduce fire intensity and reduce the rate of fire spread under expected weather conditions to levels that allow firefighters to employ suppression tactics safely and effectively. Projects are located at potential chokepoints in historic fire corridors to create new tactical opportunities for controlling fire spread, or along important transportation routes to make access and evacuations safer.<sup>359</sup> Contrary to this targeted approach to fuel modification, Alternative C would implement the same flawed WUI treatments over 250,000 acres per year, an identical treatment target as the Program itself.<sup>360</sup>

Moreover, although the PEIR asserts that Alternative C was included in the PEIR to “avoid” large-scale conversion of chaparral and coastal sage scrub (at 6-23), it would do no such thing. Alternative C simply calls for eliminating prescribed burns (in certain locations) but it would allow for other vegetation treatments that could result in type conversion. We again suggest that CALFIRE and the Board model one of its Program alternatives on the SMMNRA Fire Plan.

Finally, it appears that Alternative C was purposely designed to fail to achieve Objective 5, which calls for improving ecosystem health using prescribed burns. An alternative that is designed to fail a key Program objective is not a feasible alternative. Consequently, rather than imparting serious information about a potentially viable alternative such as the SMMNRA Fire Plan, the EIR instead offers Alternative C as a “straw man” to provide justification for the Program. Such an approach violates the letter and spirit of CEQA. In sum, the EIR’s failure to consider feasible alternatives that reduce the Program’s environmental impacts renders the document inadequate under CEQA.<sup>361</sup> This critical omission makes the EIR of little utility to the public and decisionmakers, who are left with no reasonable, less damaging option for development of this highly constrained site.

**B. There Are Valid Alternatives to the CALVTP that Are Far Less Environmentally Damaging.**

**i. Fuel reduction and fuel breaks are unlikely to deliver the Program’s intended benefits.**

The PEIR lists a number of general objectives—from reducing risks to natural resources to increasing the pace of vegetation treatment to managing forests as a net carbon sink—that includes an expansive array of potential projects and project types that could be implemented in

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<sup>359</sup> See SMMNRA Fire Plan at 32, submitted under separate cover.

<sup>360</sup> PEIR at 6-23.

<sup>361</sup> See, e.g., *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* 27 Cal.App.4th 713, 735-39 (1994).

any number of locations across millions of acres. However, achievement of the *specific* objectives of reducing risks to particular houses and communities, or improving ecosystem health in a particular area, requires that vegetation management is implemented as an integrated plan that ties together home treatment with defensible space treatment and WUI fuels reduction, in order to protect lives and property. Outside of WUI areas, achieving ecological objectives requires linking fuel breaks and prescribed fire and ecological restoration projects. These projects must be integrated not only geographically, but must occur in the right sequence and at the right times with respect to each other, with appropriate (and often ongoing and long-term) approval, commitment, and funding, in order to be meaningful and effective.

The CALVTP, by combining all of these different potential projects and objectives under the same programmatic EIR, fails to require that any single project will achieve the desired objectives. For example, wildland-urban interface (“WUI”) fuels reduction does not protect lives and property from wind-driven fire. However, the CALVTP does not require that such WUI projects are integrated with home protection and/or defensible space projects. Similarly, a fuel break may be proposed as necessary for implementation of a subsequent prescribed burn, but the CALVTP does not require that the fuel break is actually integrated with the prescribed burn. A WUI fuels reduction and the fuel break may each be broadly consistent with the Strategic Fire Plan and the PEIR, for instance, but both projects will fail to provide the proposed objectives in isolation.

Furthermore, consistency with the Strategic Fire Plan, Executive Order B-52-18, SB 1260 (2018), or the California Forest Carbon Plan, does not guarantee that any project will achieve the objectives stated in these documents. Providing meaningful and lasting benefits for communities or forest ecosystems requires that projects are implemented as part of comprehensive plans that integrate the various components and local and site-specific objectives. By casting a wide net that includes all of these different documents and objectives, the PEIR does not require that any single project achieve any of these objectives, nor that any two projects occur in coordination. This will likely lead to many disjointed projects with extremely limited benefits and no long-term efficacy.

A fuel break in the wildland forest implemented as a stand-alone project without planning and funding for ongoing, long-term maintenance, provides no forest health benefits at all on its own and it provides no benefits with respect to fire management unless a fire occurs within about ten years of the project completion, because fuel levels generally return to pre-thinning conditions within ten to twenty years (in wetter sites and drier sites, respectively).

Likewise, a thinning project in the wildland forest that is supposed to achieve ecological restoration objectives should be linked to the implementation of a comprehensive plan to restore a natural fire regime at a large geographic scale to maintain forest health rather than relying on an assumption of indefinite and increasing forest thinning and investments of funds in perpetuity. Such a plan should include not just fire restoration at the watershed and landscape scales, but also community and home protection projects to protect lives and property within the fire planning area. Such a plan may analyze historic fire regimes, model the effects climate change may have on an area and detail the ideal future state of the area. Given that the CALVTP does

not require forest thinning projects to be tied to plans, other than being broadly consistent with the goals of any of the named documents, forest thinning implemented under the PEIR is unlikely to contribute to positive forest health outcomes.

**ii. Defensible space maintenance, home hardening, home retrofitting, and building code updates are more likely to deliver the Program’s intended benefits with respect to community safety.**

“The proposed CalVTP directs the implementation of vegetation treatments to reduce wildfire risks and avoid or diminish the harmful effects of wildfire on the people, property, and natural resources in the state of California.”<sup>362</sup> To this end, the CalVTP chiefly proposes thinning and the creation of fuel breaks within and away from the WUI. However, “Computations, experiments, and disaster examinations show that a home’s ignition potential during extreme wildfire is principally determined by the characteristics of a home’s exterior materials, design, and associated flammable debris related to surrounding burning objects within 100 feet (30 meters) and firebrands (lofted burning embers).”<sup>363</sup> Such research indicates that the focus fire fuels management plans should be on 100-foot defensible space zones and buildings themselves.

The CalVTP briefly addresses CALFIRE’s education and enforcement activities as they pertain to defensible space.<sup>364</sup> The CalVTP also points to laws that allow insurance companies and local governments to mandate defensible space maintenance.<sup>365</sup> Listing the regulations that pertain to defensible space in California in a plan with the objective of reducing the effect of wildfire on humans and property does not adequately address the treatment of the area that science indicates principally determines whether or not a home will ignite. The CalVTP also fails to consider fire resistant building materials. Modeling and case studies indicate that, “home ignitions are not likely unless flames and firebrand [ember] ignitions occur within 40 meters of the structure.”<sup>366</sup> In addition to the creation of defensible space, homes existing homes should be retrofit with fire resistant materials.

The CalVTP should require that projects with the purpose of protecting life and property be tied to a plan that will lead to adequate defensible space and fire-resistant retrofits for the overwhelming majority of homes in a given community. If fuel breaks and fuel reduction projects are a component of a properly implemented community protection plan, they will be far more effective in saving lives and property. If projects are disjointed, they will have a minuscule chance of contributing to community safety.

If the state prioritizes the protection of life and property, and dedicates funding and resources for that goal, then those funds and resources should be directed toward projects that provide genuine protection for houses, communities and emergency access. A WUI fuel

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<sup>362</sup> PEIR at 1-3.

<sup>363</sup> Cohen. 2010. The wildland-urban interface fire problem.

<sup>364</sup> PEIR at 1-11.

<sup>365</sup> PEIR at 1-12.

<sup>366</sup> Cohen, J.D., Preventing disaster: home ignitability in the Wildland-Urban Interface, 98 Journal of Forestry 15 (2000)

reduction project, in this case, must be linked to the implementation of a comprehensive community protection plan which considers risks of wind-driven fire and includes home protection measures such as home hardening and retrofitting of existing structures, along with defensible space treatment and emergency access. Such a plan should also include review of local building codes to ensure adequate home protection, and review of local building and zoning laws to ensure that future development does not continue to place lives and properties unwittingly at risk. A fuel break in the absence of such comprehensive plans, fully and properly implemented, will fail to provide adequate protection from fire risk.

The PEIR must analyze alternatives that lessen the VTP's potentially substantial environmental impacts. Without this opportunity, the public is merely asked to take on "blind trust" that the proposed VTP is the best alternative. This is not only unfair to the people of California, it is unlawful "in light of CEQA's fundamental goal that the public be fully informed as to the environmental consequences of action by their public officials."<sup>367</sup> Because the Alternative identified above is reasonable and viable, and because it would achieve the VTP's objectives and lessen its environmental impacts, the Board must examine it in the revised PEIR.

## VII. Conclusion

For the reasons stated above, the PEIR fails to comply with CEQA and the CEQA Guidelines. CALFIRE cannot approve the VTP on the basis of the PEIR. The Center, EHL, and Sierra Club respectfully request that the Board revise the PEIR so that it provides meaningful environmental analysis in full compliance with CEQA. In addition, the Center, EHL, and Sierra Club request that the Board revise its VTP in a manner consistent with the best available scientific research.

Respectfully,



Laurel L. Impett, AICP  
Urban Planner  
Shute, Mihaly & Weinberger LLP




Dan Silver  
Executive Director  
Endangered Habitats League

/s/ Brian Nowicki  
Brian Nowicki  
California Climate Policy Director  
Center for Biological Diversity

/s/ Shaye Wolf  
Shaye Wolf, Ph.D.  
Climate Science Director  
Center for Biological Diversity

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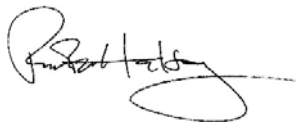
<sup>367</sup> *Laurel Heights*, 47 Cal.3d at 404.



Lauren Packard  
Staff Attorney  
Center for Biological Diversity



Daniel Barad  
Campaigner  
Sierra Club California



Richard W. Halsey  
Director  
California Chaparral Institute

**IN ADDITION, the following have endorsed and sign onto this letter:**

Bryant Baker  
Conservation Director  
Los Padres Forest Watch

Nan Wishner  
Founding Board Member  
California Environmental Health Initiative

Caroline Cox  
Senior Scientist  
Center for Environmental Health

Emily Marquez, Ph.D.  
Staff Scientist  
Pesticide Action Network North America

Encl.: letters and comments incorporated by reference

## Letters and Comments Incorporated by Reference

Comments from Center for Biological Diversity to Board of Forestry and Fire Protection re: Vegetation Treatment Program (VTP) Draft Environmental Impact Report (submitted May 31, 2016) - with accompanying references

Comments from Center for Biological Diversity et al. to Forest Carbon Action Team c/o California Department of Forestry and Fire Protection re: California Forest Carbon Plan (January 20, 2017 Draft) (submitted March 17, 2017) - with accompanying references

Comments from Center for Biological Diversity et al. to California Air Resources Board and California Natural Resources Agency re: Natural and Working Lands Implementation Plan Proposed Process California Natural and Working Lands Carbon and Greenhouse Gas (CALAND) Model (submitted October 30, 2017) - with accompanying references

Comments from Center for Biological Diversity to Board of Forestry and Fire Protection re: Vegetation Treatment Program Recirculated Draft Environmental Impact Report (submitted January 12, 2018) - with accompanying references

Comments from Center for Biological Diversity to Board of Forestry and Fire Protection re: Notice of Preparation, VTP PEIR (submitted March 1, 2019) - with attached reference

Letter from Van K. Collinsworth, Natural Resource Geographer, to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 21, 2013);

Letter from Anne S. Fege, Adjunct Professor, Department of Biology, San Diego State University to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 23, 2013);

Letter from CJ Fotheringham, Research Ecologist, Edith Hannigan (March 31, 2016)

Letter from Karen A. Goebel, Assistant Field Supervisor, U.S. Department of the Interior, Fish and Wildlife Service to George Gentry, Executive Officer, California Department of Fire and Forest Protection (Feb. 25, 2013)

Letter from Richard W. Halsey, Director, California Chaparral Institute to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Jan. 25, 2013)

Letter from Richard W. Halsey, Director, California Chaparral Institute and Justin Augustine, Attorney, Center for Biological Diversity to George Gentry, Executive Officer, Board of Forestry and Fire Protection, (Feb. 25, 2013);



Letter from Richard W. Halsey, Director, California Chaparral Institute to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Apr. 8, 2013)

Letter from Frank Landis, Conservation Chair, California Native Plant Society to Edith Hannigan, Board Analyst, Board of Forestry and Fire Protection (May 30, 2016)

Letter from Frank Landis, Conservation Chair, California Native Plant Society to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 15, 2013);

Memorandum from Sandra Morey, Deputy Director, Ecosystem Conservation Division, California Department of Fish and Wildlife to George Gentry, Executive Officer, Board of Forestry and Fire Protection, (Feb. 25, 2013)

Letter from Dan Silver, Executive Director, Endangered Habitats League to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013)

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Letter from Sweetgrass Environmental Consulting to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013)

Letter from Alexandra D. Syphard, Research Scientist, Conservation Biology Institute to George Gentry, Executive Officer, Board of Forestry and Fire Protection (Feb. 25, 2013)

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