

BOARD OF FORESTRY AND FIRE PROTECTION

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To: Board of Forestry and Fire Protection

From: Edith Hannigan, Board Analyst

Date: September 25, 2015

Re: Board Comments on the Preliminary Draft VTP EIR

Attached please find a copy of Board member comments regarding the Preliminary Draft VTP EIR received by staff as of September 25, 2015. This document is designed to assist discussion during the VTP workshop on Tuesday, September 29th.

The comments are arranged in the order of the VTP EIR sections they refer to. The comments are numbered for referenced and include a column that places each comment within a general category. A short explanation of each category is below:

Alternatives Analysis	Comments regarding the Alternatives presented for analysis
Chaparral	Comments regarding chaparral landscapes and environments
Data	Further data or information on this point is requested
Editorial	Editorial changes to the document beyond typographical changes
Environmental Analysis	Comments regarding the environmental analysis of the Proposed Program and/or Alternatives
Herbicides	Comments regarding the use or analysis of herbicides
Monitoring	Comments regarding the proposed monitoring program
Objectives	Comments regarding the Vegetation Treatment Program's Objectives
Overall	A comment on the overall organization and/or contents of the section in question
Prescribed Fire	Comments regarding the use or analysis of prescribed fire
Program Scope	Questions or comments regarding the scope of the Proposed Program, available acres for treatment, and related calculations
Project Prioritization	Questions or comments regarding the methods used to prioritize landscapes and/or project types within the Proposed Program
Public Participation	Comments regarding public input into the VTP EIR and/or VTP projects
Rangeland	Comments regarding the discussion of rangeland
SPRs	Comments or questions regarding the Standard Project Requirements
Written Clarity	Requests for more information or context on an issue, notations on potentially conflicting information within the document, unclear tables/figures

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	Member	Section/Page	Category	Comments
1	Wade	Overall	Program Scope	The scope of the project, treating 2% of 24 million acres over a ten-year period, is simply too low to be effective. Setting this amount of treatment as the basis of the analysis undermines the initiative. Setting a figure of 110% as the limit before exceeding the range of the VTPEIR likewise undermines its utility.
Chapter 1				
2	Husari	Chapter 1 Overall	Editorial	Could be shortened, lots of distracting information
3	Husari	Section 1.4 Use of a Program EIR/Page 1-7	Editorial	Figure 1.3-1 either missing or mislabeled
4	Husari	Section 1.6 Regulatory Setting/Page 1-9	Editorial	Figure 1.4-1 either missing or mislabeled
5	Husari	Section 1.7.2 Vegetation Management Program/Page 1-12	Project Prioritization	Regarding "other objectives" mentioned in the first sentence of the last paragraph on this page: need to explain somewhere why the VTP does not include some of these objectives, particularly improving commodity production
6	Husari	Section 1.7.3 Fire Prevention/Page 1-13	Data	Add language regarding funding of this program (SRA fees and other) and what percent is dedicated to vegetation management
7	Husari	Section 1.7.4 CFIP/Page 1-13	Editorial	Recommend removing this section
8	Husari	Section 1.8.1 Statewide Strategic Planning/Page 1-15	Editorial	Reorganize and simplify this section
Chapter 2				
9	Farber	Chapter 2 Overall	Overall	Overall, it is well constructed and flows well. Case studies are helpful in understanding background to proposal.
10	Husari	Section 2.1 Overview of the VTP - Objective 2/Page 2-6	Data	Include information about amount of watershed that must be treated to realize a reduction in fire impacts - see Finney literature and Sapsis (FRAP)
11	Husari	Section 2.1 Overview of the VTP - Objective 2/Page 2-7	Written Clarity	Remove Figure 2.2-4, does not relate to paragraph
12	Husari	Section 2.1 Overview of the VTP - Objective 4/Page 2-9	Chaparral	Include information about ecosystems where fire frequency is too often due to human ignitions and invasive grasses for a balanced discussion. Could cite California fire ecology book or other references.
13	Husari	Section 2.1 Overview of the VTP - Objective 5/Page 2-9	Public Participation	Additional text on outreach to NGOs and private landowners.
14	Wade	Section 2.2.1 Objectives of the VTP/Page 2-4 Objective 1	Project Prioritization	A broad category of commodity values, such as timber, are not included in "values at risk". "Structures" are included, as are ecosystem services. On what is this value system based?

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15	Wade	Section 2.2.1 Objectives of the VTP/Pages 2-4 and 2-5 Objective 1 and Objective 3	Written Clarity	The descriptions provided here do not provide clarity as to their differences. For example, one must infer from Table 3.10-1 on Page 3-38 (also included in the Executive Summary as Table ES-9 on Page E-9) that Objective 3 is achieved through the installation of Fuel Breaks.
16	Husari	Section 2.2.2 Major Vegetation Formations/page 2-10 & 2-11	Written Clarity	Additional text indicating variability among fire regimes within the 3 vegetation types
17	Farber	Section 2.2.2 Major Vegetation Formations/Page 2-13	Program Scope	Table 2.2-2 is very helpful in understanding the number of treatable acres.
18	Farber	Section 2.2.2 Major Vegetation Formations/Page 2-14	Written Clarity	Figure 2.2-5 adds up to 28,002,170 acres. Based on text on page 2-12 and previous Table 2.2-2 it seems like this Figure should be linked to the "treatable" acres which would be 24 to 25 million acres? If this was not the intent, we may want to clarify the acres in Figure 2.2-5.
19	Wade	Section 2.2.2.1 Fire Behavior/Page 2-16	Project Prioritization	The discussion of fuel rank and of condition class is not placed in the context of the process of prioritization of projects. It was not clear why these concepts were being described until later examining Figure 2.4-1 on Page 2-48.
20	Husari	Section 2.2.2.1 Fire Behavior/Page 2-17	Program Scope	Clarify whether areas not classified as high or very high were excluded from the totals of WUI available for treatment in each bioregion.
21	Husari	Section 2.2.2.1 Fire Behavior/Page 2-17	Written Clarity	"we can infer general relationships between the vegetation formation, fire behavior, and the likelihood of successful fire suppression activities." - This inference does not make sense because of the amount of variability in the WHRs.
22	Husari	Section 2.2.2.2 Departure from Fire Regime/Page 2-20	Project Prioritization	See comments in Chapter 4 regarding condition classes
23	Husari	Section 2.2.3 Program Treatments (Fuel Breaks)/page 2-32	Project Prioritization	Question about use of condition class language - should that read "fuel rank" instead?
24	Husari	Section 2.2.3 Program Treatments (Fuel Breaks)/page 2-32	Written Clarity	Figure 2.2-12 does not illustrate fuel break concept
25	Husari	Section 2.2.3 Program Treatments (WUI Treatments)/page 2-22	Project Prioritization	Explain how the priority system relates to figure 2.2-9 and whether the fuel rank system has the categories in the figure or whether there are just very high, high and moderate as shown in the map labeled as 2.2 7 Confusing. Also does the map of WUI and the acreages exclude anything in WUI with a rank less than Very High.

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	Member	Section/Page	Category	Comments
26	Wade	Section 2.2.3 Program Treatments/Page 2-19	Written Clarity	The word "treatments" is confusing, as it connotes what we are terming "activities." "Project Types" seems to be a less confusing descriptor with respect to projects in the WUI, Fuel Breaks, or Ecological Restoration projects. The descriptions here describe where the varying projects will take place and their purpose.
27	Husari	Section 2.2.3 Program Treatments/page 2-21	Public Participation	Case studies should be looked at again
28	Husari	Section 2.2.3 Program Treatments/page 2-21	Project Prioritization	See WUI analysis comments in Chapter 4
29	Wade	Section 2.2.3 Program Treatments/Page 2-23	Project Prioritization	The paragraph pertaining to firefighter deployment and safety seems out of place. How does this differ from a fuel break "treatment". Perhaps firefighter safety needs to made an objective? The details about nomex and etc. seem out of place.
30	Wade	Section 2.2.3 Program Treatments/Page 2-26 Ecological Restoration, and Page 2-31 re: Fuel breaks	Public Participation	Does the language regarding inclusion of a treatment in a local fire plan need to be repeated verbatim for each of the three treatments being described? I am skeptical about the amount of public feedback that would be solicited for the Unit Fire Plan. How many actually do serve as a county-wide CWPP?
31	Husari	Section 2.2.3 Scale of Past Treatments/page 2-43	Data	Add acreage that is treated in SRA by landowners under 100 foot requirement. Explain that this is the responsibility of the landowner and not funded by CALFIRE.
32	Husari	Section 2.2.3 Scale of Past Treatments/page 2-44	Data	CWPPS should be looked at to see what those documents estimate for conducting vegetation treatment activities
33	Wade	Section 2.2.4 Program Activities/Page 2-36, Table 2.2.5	Written Clarity	Mechanical Activities should include a feller-buncher in the column "Methods of Application".
34	Wade	Section 2.2.4 Program Activities/Page 2-37, 2-38	Written Clarity	The term "vegetation activities" is used several times to refer to what had been labeled "VTP Activities" or "Program Activities". As a matter of precision in the language it might be well to refer to VTP Activities throughout, as "vegetation activities" is not a clear term outside the context of this section.

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35	Husari	Section 2.2.4 Projected Scale of VTP/page 2-44	Data	See comments on Chapter 3. FRAP and CAL FIRE have the capability to complete an analysis of how much fuels treatment is needed to meet program objectives 1-4. This is a fundamental and needed component of the analysis rather than relying on past program history and CAL FIRE capacity and funding levels. More stakeholder scoping is needed of what the public expectations are, in terms of outcomes from the program.
36	Husari	Section 2.2.4 Projected Scale of VTP/page 2-44	Public Participation	More stakeholder scoping is needed of what the public expectations are, in terms of outcomes from the program.
37	Wade	Section 2.2/Page 2-2 last paragraph	Project Prioritization	This describes prioritization of projects based on values at risk, fuel conditions, strategic necessity, and departure from the natural fire regime. It then refers to Figure 2.4-2, which is on Page 2-56. I would like to see a broader discussion of this prioritization process here, as subsequent discussions about fuel rank and condition class are without context. I found Figure 2.4-1, which is not presented until Page 2-40, to be very valuable in finally understanding why all these topics were being discussed.
38	Wade	Section 2.3 Scope of the VTP/ Page 2-38, first paragraph	Program Scope	It's my opinion that the scope of the work is much too conservative. Two percent of the total acres would be treated over a 10-year period is not adequate to address the problem, and if we are making the effort to prepare this EIR we need to aim toward levels of treatment that will actually effect a reduction in risk. In light of the additional funding from various policy initiatives that may be available, many more acres could potentially be treated than what is anticipated in this document. It also may not recognize that within a ten year horizon we need to anticipate that there will be repeat acres, that is, the same acre is treated two or more times, we may be seriously undermining our ability to treat an adequate number of acres.
39	Wade	Section 2.3 Scope of the VTP/Page 2-39 Table 2.3-1	Program Scope	It seems that the "land cover type" and "Vegetative Type" column heading in this table should easily correlate with the "Vegetative Subtypes by Dominant Vegetation Formation" itemized in Table 2.2-1 on Page 2-10. With this table we introduce another vegetative classification, and I'm not sure how this relates to SRA or treatable area under the VTP. In this table the private lands in wildland type total over 32 million acres, and so is not easy to correlate with SRA

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40	Wade	Section 2.3 Scope of the VTP/Page 2-39, first full paragraph	Written Clarity	Regarding the reference to 80 million acres in California. As there are over 100 million total acres in California, it's evident that the 80 MM acre figure is referring to the subclassifications itemized in Table 2.3-1 on the same page. There should be an explanation as to what constitutes 80 MM acres.
41	Farber	Section 2.3.1 Geographic Extent of the VTP/Page 2-39	Written Clarity	Text in 2nd paragraph references 31 million acres, however the Table 2.3-1 directly below text describes 32,150,000 acres. We may want to further explain the difference and review the reference to Table 2.1-1 in text when the number is Table 2.3-1.
42	Wade	Section 2.3.2 Treatable Area	Program Scope	There is no clear explanation in this section why SRA lands available for treatment are narrowed to 24 million from 31 million. This is referred to in passing on Page 2-12 in the third paragraph, and apparently presented qualitatively in Table 2.2.2 on Page 2-13. A sentence explaining that some 7 million acres of SRA was in the types described in Table 2.2.2 as "untreatable" would be helpful here.
43	Wade	Section 2.3.2 Treatable Area/Page 2-40	Program Scope	How do the figures in Table 2.3-2 relate to the acreage for vegetation subtypes presented in Figure 2.2-5 on Page 2-14? That pie chart totals 28 million acres.
44	Wade	Section 2.3.3 Scale of Past Treatments/Page 2-42	Written Clarity	Is there any issue with the conclusion here that 23,000 acres have been treated on average, as opposed to the 30,000 acres previously stated?
45	Wade	Section 2.3.3 Scale of Past Treatments/Page 2-43	Data	That only 9 of 27 Unit or County representatives responded, and that the data is in such poor shape, is unfortunate. This creates a weakness in the document. Can there be a better effort made to shore up these numbers by re-contacting the 18 Units or Counties that did not respond?

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46	Farber	Section 2.3.4 Projected Scale of the VTP/Page 2-44	Program Scope	On several occasions the Board has heard testimony from both private and public sectors that the current pace and scale of vegetation treatment isn't adequate to address the current vegetation conditions, let alone the continued growth of vegetation. Approximately 60,000 acres a year represents treating approximately 2.4% per decade, is this amount of treatment going to address the existing vegetation issues and continued growth of vegetation? A discussion of how this amount is adequate should be discussed in this Chapter or an Appendix. If this amount of treatment is not going to achieve the pace and scale necessary, then we need to disclose this to the public.
47	Wade	Section 2.3.4 Projected Scale of the VTP/Page 2-43	Program Scope	Is it the intent that projects under existing VMPs continue outside of the VTP? This section alludes to covering activities not currently covered under a VMP, but I know of at least a few VMPs that are in forests. If activities on existing VMPs would continue outside of the umbrella of the VTP, does this not affect the entire environmental analysis?
48	Wade	Section 2.3.4 Projected Scale of the VTP/Page 2-44 Table 2.3-7	Written Clarity	Some explanation of this table is necessary. The text above the table states that "The spatial distribution of projects is likely to follow a pattern similar to the historic distribution of vegetation treatment projects". The table has a constant .24% in the column "% of Treatable Landscape Treated per Decade", so does not attempt to reflect the historic spatial distribution of projects. This should be explained.
49	Wade	Section 2.3.4 Projected Scale of the VTP/Page 2-45	Program Scope	The relative distribution of projects is based on "trends from the available recorded data", and the expectation is presented. However, the projected scale of the VTP as described on Page 2-43 has explained why historical data is not particularly applicable, having excluded forested landscapes, mechanical mastication, and herbicide treatment were not accounted for under the VMP statistics. Therefore the premise for the analysis is flawed.

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50	Wade	Section 2.3.4 Projected Scale of the VTP/Page 2-45	Herbicides	What I find perplexing is the projection that the level of prescribed herbivory is expected to be equal to the level of herbicide treatment. This seems impractical, in that the ease and effectiveness of herbicide treatment would seem to lend itself to far more application than herbivory. This would seem to be either a serious weakness in the analysis (if herbicide use would constitute substantially more than 10% of the treatments), or a serious flaw in the strategy of the VMP (that prescribed herbivory is equally applicable and efficient <i>vis a vis</i> herbicide treatment).
51	Wade	Section 2.3.4 Projected Scale of the VTP/Table 2.3-8	Editorial	It would be awesome to provide totals for rows and columns of data in tables such as 2.3-8 so readers do not have to do the math.
52	Wade	Section 2.4.1 Implementation Process/Page 2-46	Public Participation	In the second paragraph, it is stated "During the project planning phase, the project proponent will provide a public meeting for projects outside of the WUI. Why the distinction? How would public input differ for projects within the WUI ?
53	Wade	Section 2.4.1 Implementation Process/Page 2-48 Figure 2.4-1	Written Clarity	This is a valuable diagram, explaining the use of fuel hazard and condition class. It should perhaps be referred to in the prior discussion of these rating systems, and given more prominence in the document.
54	Wade	Section 2.4.1 Implementation Process/Page 2-60	SPRs	AIR-8: This restriction would insert a great deal of uncertainty into any project involving heavy equipment activity. Would it be possible to qualify this restriction by stipulating that the dust transport must be in exceedance of local air quality standards?
55	Wade	Section 2.4.1 Implementation Process/Page 2-61	SPRs	AIR-10: This is quite restrictive, and makes no distinction whether the ambient air quality is good or bad, or the location of the project with respect to its effects on a local population. This could be qualified by restricting it to "bad air" days as defined by the local air quality management district.
56	Wade	Section 2.4.1 Implementation Process/Page 2-61	SPRs	BIO-3: The term "special status species" needs to be defined in the glossary. It is quite distinct from "rare, threatened, or endangered".
57	Wade	Section 2.4.1 Implementation Process/Page 2-62	SPRs	BIO-4: A different term, "CNDDB Species", is now being used. Is this equivalent to "special status species"? Neither of these necessarily connotes that a species reaches a threshold of CEQA significance.

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58	Wade	Section 2.4.1 Implementation Process/Page 2-63	SPRs	BIO-7: A strict minimum buffer may not be appropriate for plant species that are favored by disturbance. Bio-4 outlines the request for specific information from expert sources regarding "special status" species. This information should be used to guide activities in the vicinity of these plants.
59	Wade	Section 2.4.1 Implementation Process/Page 2-69	SPRs	HYD-3: This restriction seriously undermines the efficacy of vegetative treatments and should be discarded or modified. Simply allowing prescribed fire to be the exception belies that without prior treatment of the area prescribed fire is typically not practical, and would not be implemented in most cases. Why would hand treatments not be practical and with minimal potential environmental effect?
60	Wade	Section 2.4.1 Implementation Process/Page 2-71	SPRs	HYD-15: I presume this is to protect soils, but 100 square feet as the maximum? Is this limit supportable as a threshold for a significant effect on the environment? Piles this small are not practical under several treatment scenarios, particularly when mechanically piling fuels, and increase the difficulty in burning them.
61	Farber	Section 2.4.3 Monitoring and Adaptive Management Plan/Page 2-53	Monitoring	We should consider an annual report or presentation to the Board, specifically addressing items described in Section 2.4.3 and Section 2.3.4 regarding pace and scale of vegetation treatment activities. Also, it would be helpful to receive annual updates on the monitoring proposed in Appendix I and how well this monitoring approach is working.
62	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-59	SPRs	ADM-2: RPF not necessary for this
63	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-60	SPRs	ADM-7: This sounds like a capacity issue – what if contractors are doing the work. Why would not RX fire or prep work be limited, especially if the landowner is doing the work
64	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-61	SPRs	AIR-2: Note this is a requirement of smoke management plans already
65	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-62	SPRs	AIR-12: Redundant
66	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-62	SPRs	Mitigation Measure AIR-1 What about PFIRS?
67	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-63	SPRs	BIO-5: Define "critical." What about houses?

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68	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-65	SPRs	CC-1: FOFEM not an appropriate tool
69	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-68	SPRs	HAZ-6 & 7: Why is there a discussion of pesticide use in the VTP. It is not one of the treatment methods.
70	Husari	Section 2.5.1 Standard Project Requirements and Mitigations/page 2-73	SPRs	NSE-7: Except as needed for public safety such as mop up for prescribed burns which occur outside those hours. Does this mean no prescribed burns on weekend?
Chapter 3				
71	Wade	Section 3.7.3 Regarding the Achievement of Basic Project Objectives for Alternative D/Pages 3-31 and 3-32	Prescribed Fire	This narrative makes statements that are difficult to support; for example, "Prescribed fire is the only logical treatment option to treat large areas in need of fuel reduction". What's "logical" depends on many factors, particularly on the ground conditions. Further, the reference to fire as the only way to restore the ecological balance for fire-adapted communities is overly broad. After all, we are treating only a few percent of the SRA landscape under the preferred alternative, so the overall ecological health of wildland ecosystems will be generally unaffected by this program, in whatever form it is implemented.
72	Wade	Section 3.9 Alternatives Considered but Eliminated	Alternatives Analysis	A general comment here is that a higher acreage alternative, broadly applied to all treatment areas would've been a logical alternative to consider. I think we need to question whether an alternative to treat 5% or 10% of the available landscape is not appropriate to consider under the extreme circumstances that we're facing. The level of activity proposed under this document is inadequate to address the problem.
73	Wade	Section 3.10 Preferred Alternative/Page 3-38, Table 3.10-1	Objectives	This highlights that Objective 3 really needs elaboration, in order to further distinguish it from Objective 1. From this summary table the objective of reducing fire size and associated cost (of fire suppression) may only be achieved through the Fuel Break treatment.

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74	Husari	Overall	Program Scope	<p>1. Rationale for acres/treated per year. Program size (max 61K per year and min 30K per year)</p> <ul style="list-style-type: none"> • CALFIRE capacity to oversee planning of projects – seems to rely heavily on current VMP and CEQA staffing • CALFIRE capacity to implement projects such as prescribed fire prep and implementation • Interest of private landowners in projects • Current funding distribution for VMP program and for SRA grants. • Past history of project implementation. <p>All these are understandable reasons to hold the program size to twice historical average, but there are many ways to increase program size to treat more acres: greater outreach, larger grant program, increase in staffing.</p>
75	Husari	Overall	Objectives	<p>2. Analysis of programmatic objectives.</p> <ul style="list-style-type: none"> • There is no quantitative analysis of how the program or the alternatives will meet objectives 1 to 4 at a program scale. The narratives in Chapter 3 say that the objectives will be met, but contrast them based on the amount and distribution of treatments by WUI, fuel break and ecological restoration category. • The only objective that can be met at the program scale is 5, because of the improvements to the planning process. • It is more reasonable that objective 1-4 can be met at the individual project scale • Table that contrasts alternatives with pluses and minuses is unconvincing and not particularly logical. Can explain why: All individual projects are likely to meet each objective to some extent because they only vary in location and use the same methods in a different arrangement. • FRAP has the ability to do a spatial analysis of fire distribution and past fuel treatment distribution because it has complete database. Using the wildfire distribution, a more quantitative analysis of how much fuel treatment and retreatment is needed to meet objectives 1-4

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76	Husari	Overall	Alternatives Analysis	<p>3. Ability of the alternatives to meet objectives 1-3 Again, the program objectives can be met on an individual project basis. An ignition that occurs in a treated area can be more easily controlled. An ignition that occurs in a structure adjacent to a treated area or in the WUI can be more easily controlled and increase firefighter safety, and risk to life, property and resources. A fire that starts in or burns into a treated area can be controlled at much less cost.</p> <p>Maximum number of projects per year: 231 at 260 acres per project. Average number of fires per year in SRA: 3965 2003-2012 The chance of a fire occurring or burning into a treated area is low even after 10 years of treatment because the number of treated areas are small, the treatments are widely distributed over a very large landscape and the number of projects are small compared to the number of projects, even after 10 years. The chance of a large fire being influenced by a treated area is low, because once fires are large, small fires that are widely distributed do not change the overall fire behavior, although they can reduce severity within the treated area. The requirement to retreat every 2-3 years to maintain effectiveness also reduces the area that can meet objectives. Most acres are burned by 5 percent of the fires. Large areas have to be treated to influence, risk to WUI, fire suppression costs and overall acres burned.</p>
77	Husari	Overall	Program Scope	<p>4. Avoidance of significant impacts: There is no category in Chapter 4 that indicates that significant impacts would occur if acreage treated were increased. This is especially true if a good case is made that increasing fuel treatment will decrease wildfires.</p> <p>Overall: the alternatives cannot meet objectives 1-4 at a programmatic scale. The benefits of this small amount of treatment are overstated. It is still useful and worthwhile to do fuel treatment because of the benefits within the treated areas. The Board should take a realistic look at how much treatment is needed to make a difference and make the public aware of this.</p>

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Chapter 4				
78	Wade	Chapter 4	Editorial	A diagram or outline of the detailed structure of this Section would be very helpful. Frankly, I became bogged down in the first 40 or 50 pages.
79	Husari	Overall	Environmental Analysis	Effects: There is a lack of consistency in whether the treatment levels affect wildfire scale and cost and impacts. Some sections assume this based on the subjective analysis of the alternatives in Chapter 2. Some sections don't. The board should discuss whether the overall VTP program will affect wildfire given the small scale of treatment and the dispersed nature of treatment.
80	Husari	Overall	Environmental Analysis	The use of different ways of parsing the CA landscape makes some of the sections difficult to compare to the bioregion analysis.
81	Husari	Overall	Environmental Analysis	The section on biological resources is very good.
82	Husari	Overall	Environmental Analysis	Effects on some of the components really cannot be analyzed effectively at the statewide scale.
83	Wade	Section 4.1 Introduction and Impact Analysis/Page 4-1	Written Clarity	An explanation should be offered as to why the total on Table 4.1-1 equals 80 million acres.
84	Husari	Section 4.1.1 Land Management Regulation/page 4-2	Data	Include USFS 470,000 acres of refuge, most with FMPs, in Table 4.1-2 (see contact information in document)
85	Husari	Section 4.1.1 Land Management Regulation/page 4-3	Data	Update number of National Park Service areas in state
86	Wade	Section 4.1.1 Land Management Regulation/Page 4-5 Table 4.1-2	Written Clarity	It doesn't seem consistent to list the Sierra Nevada Conservancy as the "manager" of 25,000,000 acres. It clearly does not.
87	Wade	Section 4.1.2 Analysis Introduction/Page 4-7 Table 4.1-3	Project Prioritization	"Example of Project Goals within Each Bioregion" I find this table to be very odd and not useful. It does not seem practical to generalize by bioregion, particularly when all have ample acreages of the three treatment areas, WUI, Fuel Break, and Ecological Restoration. The purpose of this table is not at all clear.
88	Husari	Section 4.1.2 Analysis Introduction/Table 4.1-3	Project Prioritization	This table needs more explanation. It implies that some goals are better addressed in some bioregions than others. Not sure why the table is here, but if it is retained its purpose should be explained.

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89	Husari	Section 4.1.3 Major Tree, Brush, and Grass Vegetation Formation Review	Written Clarity	This section needs major revision. It is not consistent with the later section 4.2 (Biological Resources) and introduces information about the affected environment, effects and mitigations that should be placed in that section. The treatment of grass and timber is brief and not helpful and often inaccurate. The section on southern California chaparral should be shortened, checked for consistency with the biological resources section and the various citations should be presented together in a balanced way.
90	Husari	Section 4.1.3 Major Tree, Brush, and Grass Vegetation Formation Review	Chaparral	The biological resources section has a much better section on sagebrush, and also affects on chaparral in non southern California settings. The mitigations should be moved to the biological resources section.
91	Husari	Section 4.1.3.1 Life History Features for Tree-dominated Subtypes/Page 4-8	Written Clarity	The discussion in the biological resources is much more accurate and nuanced regarding long-need conifer subtypes.
92	Husari	Section 4.1.3.1 Life History Features for Tree-dominated Subtypes/Page 4-9	Data	Re: paragraph on short needle conifer subtype: Generally not true of many lodgepole stands in California, less cone serotiny, fire behavior more like other conifer stands. Could substitute closed cone pine as an example of short needled pines that exhibit strong serotiny and burn with infrequent high severity fire – bishop pine and Monterey pine for example.
93	Husari	Section 4.1.3.1 Life History Features for Tree-dominated Subtypes/Table 4.1-4	Data	The montane hardwood type contains the majority of acres but its description is inaccurate. Most of the acres in the WHR type are canyon live oak and interior live oak, except for the acres in the Klamath/North coast which are madrone, tanoak and one deciduous species, Oregon white oak. This section could easily receive a longer discussion. The median FRI for montane hardwood is probably incorrect.
94	Husari	Section 4.1.3.3.1-4 (Chaparral and Fire)/Page 4-12 through 4-16	Written Clarity	Move to biological resources section, and reconcile with information in that section. Use common names.
95	Husari	Section 4.1.3.3.4 Guidelines for Projects Located Outside the WUI.../Page 4-16	Chaparral	Define "old growth chaparral"

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	Member	Section/Page	Category	Comments
96	Husari	Section 4.1.3.4 Rangeland Base and Ownership/Page 4-17	Rangeland	I am puzzled by this section. It seems out of place. It should be rewritten and should discuss the affected environment, the effects and the mitigations associated with the ranching community. A discussion of how private rangelands fit into the CMP and the VMP programs and how the concerns and management needs of ranchers will be addressed by the new VTP preferred alternative is lacking. There are no mitigations in this section. I would like to see a table that discusses the amount of SRA that is private rangeland and how much of it is available for treatment under the preferred alternative. This section could also be cross referenced to the section in biological resources on grazing and to the discussions of prescribed herbivory.
97	Husari	Section 4.1.3.4 Rangeland Base and Ownership/Page 4-17	Public Participation	The whole document is strangely silent on the role of landowners, and particularly on the role of ranchers in managing their own land.
98	Husari	Section 4.1.3.4 Rangeland Base and Ownership/Page 4-17	Public Participation	Stakeholders, as a general term, seems to be, in large part a term for people who don't have land ownership, but want to be involved in setting standards for people who do.
99	Husari	Section 4.1.4.1 Fuel Rank Potential Fire Behavior/Page 4-23	Project Prioritization	It is unclear to me how fuel rank was used in the analysis. The only thing I can gather from this discussion is that fuel treatments will be used in areas ranked moderate, high and very high in the WUI. A discussion of fuel rank determination and how it relates to the development of alternatives and acreage estimates for effects is needed.
100	Wade	Section 4.1.4.1 Fuel Rank Potential Fire Behavior/Page 4-23 and 4-24	Editorial	This is the first of a series of duplicative language from previous sections, as much of this section is verbatim from Section 2.2.2.1. Perhaps this is unavoidable; that the content of Sections 2 and 4 are so aligned that it's appropriate it should be the same. That said I would hope that we can make the time to review these and other areas where we've relied on duplicative language. In this case, perhaps it's the level of detail that is necessary to provide in Section 2 that can be reduced, and still serve the purpose.
101	Husari	Section 4.1.4.1 Fuel Rank Potential Fire Behavior/Page 4-27, Table 4.1-12	Data	Very confusing table, and I think I know what it is about. Not sure how this relates to the topic.

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102	Husari	Section 4.1.4.2 Wildland Urban Interface/page 4-29	Written Clarity	Regarding "cost-distance function" used to create WUI buffer: This needs a much better explanation. Cost distance analysis. The changes in WUI buffers result in very large differences in what is available for treatment in different bioregions – It looks like the 1.5 buffer is used in the Klamath/North Coast and the Sierra/Cascade bioregions. More explanation of how this translates to next table where WUI acreage is displayed by bioregion is needed, and how the adjustment of buffers affects total acreage by bioregion is needed.
103	Husari	Section 4.1.4.2.1 Wildland Urban Interface Zone of Influence/Figure 4.1-4	Written Clarity	This figure seems unnecessary. After all the complicated tables it seems overly simplistic. The concept that fire moves from WUI or into WUI from wildlands makes sense.
104	Husari	Section 4.1.4.3.1 Condition Class/page 4-36	Project Prioritization	It is very important here that we define condition class and discuss how ecosystems with too frequent fire were classified by FRAP during the mapping exercise.
105	Husari	Section 4.1.4.3.1 Condition Class/page 4-36	Chaparral	Sagebrush in the Modoc Plateau – loss of the shrub component due to invasion of cheatgrass and other annual grasses which allows more frequent fire than characteristic. And Southern California chaparral where human ignitions, habitat fragmentation and exotic annuals also have increased the fire frequency and degraded habitats, causing loss of important wildlife habitat, larger fires and threats to species that depend on these ecological types.
106	Husari	Section 4.1.4.3.1 Condition Class/page 4-36	Project Prioritization	The section is vague and confusing on how condition class was actually translated into the FRAP layers and how this influenced the acres available for ecological restoration by bioregion.
107	Husari	Section 4.1.4.3.1 Condition Class/page 4-38	Written Clarity	Both Table 4.1-17 and Figure 4.1.9 seems to imply, from the legend, that the map only covers condition class in forests. Not sure what is happening with non forest rangeland? Very confusing about what was mapped as what.
108	Husari	Section 4.1.4.4 Fuel Break/Figure 4.1-11	Written Clarity	I do not understand what the figure below has to do with fuel breaks. If you check Agee's book, this figure had nothing to do with fuel breaks. There are much better diagrams of shaded fuel breaks and how they affect fire dynamics that show how shaded fuel breaks affect fire behavior.

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	Member	Section/Page	Category	Comments
109	Wade	Section 4.1.4.4 Fuel Break/Page 4-41	Editorial	The first paragraph states includes the sentence “The wide fuel breaks...are expected to assure successfully holding of firelines in most situations...” I would replace the word “assure” with “increase the chances of”.
110	Husari	Section 4.1.4.4 Fuel Break/Page 4-41	Project Prioritization	This section needs a rewrite. It is disorganized. It jumps around and has a long confusing section about whether fuel breaks work or not that is unnecessary. It should be linked to the section in the affected environment. The modeling is based on topography, but in general fuel breaks are rarely put in place except in areas where roads exist. It is important that the ESRI modeling be more clearly described. – Did suitable areas include both the existence of a road and a ridgeline or either/or? I would like to see a clear discussion of how the acres available for fuel breaks by bioregion were derived. Also link this to the discussion of the pros and cons of fuel breaks in the affected environment rather than speculating about it in the section on fuel breaks.
111	Husari	Section 4.1.4.4 Fuel Break/Page 4-41	Data	Need to include a section on spot fires when spotting distance exceeds the width of fuel breaks. This is not discussed and is generally, in my experience the reason that wildfires move across fuel breaks.
112	Husari	Section 4.1.4.4 Fuel Break/Page 4-46	Project Prioritization	Lopping and scattering is generally not used in creation of fuel breaks. Add underburning, remove lopping and scattering. A better explanation of the ESRI modeling is needed. A discussion of how existing fuel breaks that need maintenance and how they were considered in the modeling is needed. A discussion of whether the modeling only used areas along roads is needed. How much connectivity between fuel break sections is implied in the modeling. The figure (4.1-14) makes the fuel breaks look very disconnected.

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	Member	Section/Page	Category	Comments
113	Husari	Section 4.1.5.1 Prescribed Burning/Page 4-49	Written Clarity	Very southern California centric. Review terminology and definitions for consistency with nationally accepted definitions. See the definition of “underburn” as an example. Broadcast burns are not defined. Jackpot burning – there are better definitions. This section is all over the place. Needs to be reorganized. A clear discussion of burn objectives and the methods used to meet burn objectives at both the landscape and project specific levels is needed. The effects section and mitigations section of the biological resources section does a better job of talking about the pros and cons of prescribed burning.
114	Husari	Section 4.1.5.1 Prescribed Burning/Page 4-51	Data	Check prescribed burning costs - seem low
115	Husari	Section 4.1.5.1 Prescribed Burning/Page 4-52	Written Clarity	Expand on information in required burn plans
116	Husari	Section 4.1.5.2 Mechanical Treatments/Page 4-53	Written Clarity	Eliminate this discussion [of herbicides + mechanical treatment combinations]. How old is that chaining picture? Some of these photos are ancient and do not reflect current techniques – may be disturbing to many readers. I would substitute some more current photos which do not show this kind of damage and impacts. The photo of the feller buncher is good and it should be pointed out that it is being used over the snow to limit the impacts to soils. However, the use of feller bunchers is generally associated with commercial operations and would not be covered by the VTP.
117	Husari	Section 4.1.5.3 Manual Treatments/Page 4-57	Written Clarity	This section seems to be more about weed control than manual fuel modification
118	Husari	Section 4.1.5.3 Manual Treatments/Page 4-58	Data	Revise [section on costs]. Discuss widespread use of CDC crews to do manual fuels work on Northern California.
119	Husari	Section 4.1.5.4 Herbicide Treatments/Page 4-60	Herbicides	I think the board should have a discussion regarding whether herbicide use should be covered by the programmatic document. It is controversial with much of the public in many areas of the state. I would much prefer seeing it analyzed using either a bioregion or project level CEQA document.

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120	Husari	Section 4.1.7 Analysis Summary/Page 4-64	Written Clarity	I am not sure what the purpose of this section is, except to allow the quantification of effects in future sections. It does not appear that the information was used to do that in most of the sections except the air quality section. Clarify that these estimates were created so that the effects sections could be created. The explanation is long and clunky.
121	Husari	Section 4.1.7 Analysis Summary/Page 4-66	Project Prioritization	I think that dividing the grassland treatments into low intensity treatments and high intensity treatments is very confusing. The distinction is that in the low intensity you are talking about underburning oaks and in grasslands without an overstory the burning is just grass. The intensity is not much different whether you are burning annual grass under oaks or annual grassland. The only difference is that you might use a different firing pattern in oak stands to reduce impacts on the trees.
122	Wade	Section 4.2.2.1 Significance Criteria/Page 4-100	Written Clarity	The prior-stated concern about the use of the term “special status species” arises again here. Depending on its definition, the sentence in the second-to-last paragraph reading “Under the Federal Endangered Species Act, activities may not result in the take, direct or indirect, of a special status species” may not be correct. This phrase as used on Page 4-101 is clearly not a species that is rare, threatened, or endangered, under FESA or CESA. The term is further used throughout the discussion of biologic resources.
123	Wade	Section 4.2.2.1 Significance Criteria/Page 4-104	Written Clarity	In the first paragraph under the heading “Aquatic”, the statement is made that 60,000 acres is .2% of the total acreage of California. This does highlight a recurring issue with adequately explaining whatever baseline or reference acreages for the topic being discussed. This is most likely total acres of SRA, since it computes to a total of 30 million acres. As California is over 100 million acres, this needs modification.
124	Husari	Section 4.3 Hydrology, Geology, and Soils	Environmental Analysis	Long section. I read it and it seemed logical. Not my area of expertise, but concerns are well described. Would be interested in comments from Board Members with hydrology background.
125	Husari	Section 4.3 Hydrology, Geology, and Soils/Page 4-204	Environmental Analysis	Wondering why the section on biological resources discussed the impacts of more wildfire when fuel treatment is not done, but this section only considers the impacts of the fuel treatments.

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126	Husari	Section 4.3 Hydrology, Geology, and Soils/Page 4-208	SPRs	HYD-8: Kind of defeats the purpose of fuel treatment
127	Husari	Section 4.4 Air Quality	Data	The modeling in this section could be much improved. Discussion of creation of emissions from treatment should be modeled over the proposed season in which the projects will be implemented. The assumption that prescribed fires will reduce wildfire acres is not supported by modeling and is unlikely to occur from the very small amount of treatment that will occur. I don't think that this section will withstand any rigorous review. That being said it is nearly impossible to analyze program affects on a statewide scale.
128	Husari	Section 4.4 Air Quality/Page 4-356	Data	Table 4.12-3 should also have a summary of attainment by air district.
129	Husari	Section 4.4 Air Quality/Page 4-368	Data	More explanation of how CONSUME was used to do this. CONSUME is intended for use for estimating emissions from discrete projects. Not generally used for programmatic estimates of emissions from prescribed fire.
130	Husari	Section 4.4 Air Quality/Page 4-376	Program Scope	Given the small scale of the proposed VTP program and the dispersed nature of the treatments I really think it is not likely that the fuel treatments would impact wildfire emissions on a significant scale.
Appendix A				
131	Husari	Overall	Overall	I struggled with understanding the analysis methods when reading the text, both Chapters 2 and 4. It would be helpful to expand this section and go deeper to clearly define how the WUI layer was created. A section on condition class would be useful. And I am still not clear how/when fuel rank was used. A section on how WHR was converted and recombined to create the shrub, grass and forest categories would also be useful. As it is this is one of the better written sections. It needs expansion so the reader can understand the creation of the underlying geospatial layers.
132	Farber	Page A-1	Written Clarity	The number of acres reported as treatable is 28 million, similar to chart on page 2-14, we need to clarify in Chapter 2 or Appendix A the number of treatable acres which is typically described as 24 to 25 million acres.
Appendix I				

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	Member	Section/Page	Category	Comments
133	Farber	Overall	Overall	Overall, the Appendix is well written and justifies the monitoring approach. As described on Page I-12, each project will have a monitoring checklist completed for the planning, implementation and completion phase. I think it would be helpful to add either compliance or implementation monitoring (and a brief description) to the list of monitoring types on Page I-2.
Glossary				
134	Husari	Overall	Overall	The glossary is an incomplete list of terms used in the document. Terms are somewhat randomly included. Many of the definitions in the glossary are different from the interagency NWCG glossary of fire terminology (October 2014). Definitions specific to relationships between agencies defined in agreements should be used. For example, the definition of DPA in the glossary does not agree with the definition in the 2015 CFMA, signed by CAL FIRE.