



Deschutes County Board of Commissioners
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AGENDA REQUEST & STAFF REPORT

For Board Business Meeting of September 23, 2015

DATE: September 15, 2015

FROM: Anthony Raguine CDD 541-617-4739

TITLE OF AGENDA ITEM:

Board of County Commissioners (Board) deliberations on The Tree Farm conditional use permits and tentative plan applications.

PUBLIC HEARING ON THIS DATE? No.

BACKGROUND AND POLICY IMPLICATIONS:

The Tree Farm, LLC (Applicant), submitted applications to establish five cluster subdivisions. These applications were referred to a Hearings Officer and a public hearing on November 6, 2014. The Hearings Officer's decisions denied the applications due to a lack of detail associated with the submitted wildfire and wildlife management plans. These decisions were timely appealed by the Applicant and Rio Lobo Investments, LLC. On July 8, 2015, the Board conducted a de novo hearing limited to issues related to the submitted Wildfire Protection Management Plan and Wildlife Management Plan. The purpose of this meeting is for the Board to determine if the applicant has met their burden of proof regarding the proposed subdivisions. Attached to this agenda request is a decision matrix to guide the Board's deliberations.

FISCAL IMPLICATIONS:

None.

RECOMMENDATION & ACTION REQUESTED:

Deliberate and reach decisions on the subject land use applications.

ATTENDANCE: Anthony Raguine and Legal Counsel

DISTRIBUTION OF DOCUMENTS:

Anthony Raguine, CDD
David Doyle, Legal Counsel



THE TREE FARM

Land Use File Nos. 247-15-242-CU, 243-TP, 244-CU, 245-TP, 246-CU, 247-TP, 248-CU, 249-TP, 250-CU, 251-TP,

Wildfire Protection Management Plan	Hearings Officer Identified Issue Area	Applicant Submittal	Central Oregon Landwatch Response	Applicant Rebuttal	Proposed Conditions of Approval
1	Identify each residential lot building envelope, the extent and nature of the defensible space around each dwelling, and fire fuel treatments on the building envelope and the rest of the lot.	The applicant's Exhibit 6 of the Wildfire Protection Management Plan (WPMP) details the building envelopes on each residential lot; the three proposed zones of fuels reduction that begin on each residential lot and extend into the open space lots; and the required fuels reduction within each zone.	Scale of exhibit is small and not clear. What criteria were used to determine building envelopes? NFPA 1144 requires a lot-specific fire hazard analysis, which was not done. It's not appropriate to have the analysis done by the Architectural Review Committee (ARC). Analysis should be done now.	Exhibit 6 clearly shows setbacks and fire fuels reduction zones. Applicant accepts staff's recommended condition of approval to include the building envelopes on the final plat. NFPA standards are intended to be applied to existing structures. For this reason, the applicant proposes to have the ARC conduct the hazard assessment for each lot.	Recommended condition of approval requiring building envelopes on final plat.
2	Identify the setback from the upper edge of the slope(s) for each building envelope and dwelling.	Applicant's Exhibit 3 of the WPMP details slopes of greater than 20 percent. Structures adjacent to vegetated slopes of greater than 20 percent shall observe a 30-foot setback. Mitigation measures such as noncombustible wall or barrier will be required for lots where the 30-foot setback cannot be met.	NFPA 1144 Section 5.1.3.2 calls for a setback from a vegetated slope and is not limited to any minimum slope percentage. Under Section 5.1.3.3, a barrier is allowed only if the structures cannot be moved further away from the slope. Thirty-foot setback not adequate based on recent research.	The 20 percent slope profile was selected on the advice of Gary Marshall, the applicant's wildfire expert, and NFPA literature. Thirty-foot setback is the NFPA standard.	Recommended condition of approval requiring identification on final plat of lots which cannot meet 30-foot structure setback and which would require a noncombustible wall or barrier.
3	Identify any fuel treatment on slopes below each dwelling, and if such fuel treatment will occur on open space, what impact it will have on open space, on surface water drainage, and on wildlife habitat for WA-zoned lots.	Exhibit 6 of the WPMP details extent of proposed fuels treatments. Dr. Wentz, the applicant's biologist, concludes fuel treatments on slopes below homesites is a small proportion of total brush acreage. Fuels reduction will still allow maintenance of pockets of understory habitat. No impact to surface water drainage will result.	Applicant has not identified fuels treatments on slopes and fails to explain impact of fuels treatments on open space and surface drainage. What is the scientific basis for the three-zone approach?	Exhibit 6 illustrates the specific fire fuels reduction zones surrounding each lot with an explanation of each zone in the legend. The impact of fuels reduction on slopes and open space is addressed by Dr. Wentz in the WPMP. The zone model was based on USFS research and NFPA standards.	None.
4	Identify whether and where decks and outbuildings would be permitted on each lot.	Combustible decks and outbuildings will be subject to the same setbacks at the dwelling. Applicant proposes to allow non-flammable patios and retaining walls to extend into the fire protection zones.	Applicant has not specified location of outbuildings.	Setbacks for flammable structures is depicted on Exhibit 6 of the WPMP.	Recommended condition of approval requiring all combustible construction to be located within the building envelopes identified in Exhibit 6 of the WPMP.

Wildfire Protection Management Plan	Hearings Officer Identified Issue Area	Applicant Submittal	Central Oregon Landwatch Response	Applicant Rebuttal	Proposed Conditions of Approval
5	Identify what specific construction methods and building materials will be required for each dwelling to meet specific, identified NFPA standards.	Exhibit 2 of the WPMP identifies specific National Fire Protection Association (NFPA) 1141 and 1144 standards which apply to The Tree Farm, the document which implements these standards, and who has the authority to ensure compliance. The revised WPMP and the proposed Design Guidelines detail specific construction methods and building materials that will be required to meet the identified NFPA standards.	No response.	No rebuttal.	Where the identified NFPA standards have an equivalent county road standard, staff recommends a condition of approval that the applicant be required to comply with the most restrictive standard. Prior to construction of any improvements, staff further recommends the applicant identify both standards on the engineering plans and document that the more restrictive standard will be met. The proposed Design Guidelines include standards for fencing. Staff recommends a condition of approval that all fencing within the WA Zone comply with the fencing standards under DCC 18.88.070.
6	Provide a detailed description of how and by whom the wildfire plan will be implemented, monitored, and enforced, with particular attention to the transition between the developer and the HOA.	The proposed CCR's and HOA Bylaws detail the maintenance responsibility with respect to the revised WPMP and WMP. Included in the CCR's and Bylaws are requirements related to timing of compliance, funding, auditing, implementation of the WPMP and WMP, and enforcement authority of the HOA. According to Section VII of the WPMP, the developer will turn over HOA management to the owners. HOA responsible for continuing Firewise Community recognition.	The WPMP does not identify who has responsibility to conduct enforcement. County does not have resources to enforce code enforcement issues. Private citizens may lack resources to pursue code enforcement and lack access to property to obtain evidence. HOA's become dysfunctional with no assurance that an HOA will exist over the long term. Standards can be amended by the HOA. No assurance of adequate funding.	Parties responsible for enforcement are identified in Section VII and VIII of the WPMP, Exhibit 2 of the WPMP, the CC&R's, Bylaws and Design Guidelines. If Landwatch's argument regarding code enforcement were taken to its conclusion, then the county should not approve any land use applications because any applicant could fail to follow conditions of approval. Draft condition of approval No. 1 requires a new land use approval if a substantial amendment is proposed. This is carried over to Article 15.6 of the CC&R's which prohibits any amendment to the WPMP that would lessen its requirements without land use approval from the county.	Recommended condition of approval requiring proof of Firewise Community recognition be submitted to the Planning Division. Further, continuing Firewise recognition be submitted to the Planning Division annually from the date of first recognition.
7	Develop a specific, mapped evacuation plan for The Tree Farm and each of the five Tree Farm developments, including directions for operation of the gate on Sage Steppe Drive.	Exhibit 7 of the WPMP shows both the main access to The Tree Farm via Tree Farm Drive, and the emergency access road leading from Tree Farm 1 to Crosby Drive to the southeast. Section VI.C of the WPMP states that owners will be instructed on how to operate the gate either electronically or manually.	Although the applicant provided an evacuation plan for the development as a whole, no evacuation plan was provided for each specific subdivision. Mr. Addison, the appellant's wildfire expert, states that including an emergency road access beside a school can compound a fire issue with children mixing with emergency vehicles.	Section VI, Exhibit 7 and Exhibit 8 of the WPMP detail plans for communicating the evacuation plan to owners and guests, directional signage, evacuation routes, and the Emergency Evacuation Information Form and Instructions. Evacuation routes and plans are the same for all five subdivisions.	Recommended condition of approval requiring the HOA to provide each owner written instructions regarding operation of the emergency gate within 30 days of the property being conveyed or sold to persons or entities.

Wildlife Management Plan	Hearings Officer Identified Issue Area	Applicant Submittal	Central Oregon Landwatch Response	Applicant Rebuttal	Proposed Conditions of Approval
1	<p>In the Hearings Officer decision on Tree Farm 5, the Hearings Officer found that it was not clear that Dr. Wentz considered vegetation removal downslope from the homesites in forming her opinion regarding impacts on deer winter range.</p>	<p>Dr. Wentz concludes that the historic thinning and brushing of The Tree Farm property has resulted in an open understory which could expose deer and other wildlife to a higher level of visual disturbance. However, the interspersed ridges, rock piles, rock outcrops, and downed logs with associated brush will serve to provide some cover and travel corridors. Dr. Wentz goes on to state that fuels treatments on steeper slopes below homesites represents a small proportion of the total property acreage and that it would continue to leave pockets of brush for cover. Dr. Wentz concludes that the vegetation treatment on slopes are not expected to significantly impact wildlife habitat beyond the management already occurring as part of the currently applied Zone 3 treatments.</p>	<p>No response.</p>	<p>No rebuttal.</p>	<p>None.</p>
2	<p>Opponents question whether developing Tree Farm 4 and 5 at the proposed density will create too great an impact on the winter range considering the increase in human activity in the area, compared with lower density development, or no development at all. The applicant's WMP does not address this issue, which the Hearings Officer found may be relevant in the context of the general "suitability" approval criterion under DCC 18.128.015(A)(3).</p>	<p>Dr. Wentz notes that The Tree Farm, as a whole, focuses the majority of the development to the east, outside of the WA Combining Zone. Only 13 of the proposed 50 residential lots will be located within the WA Combining Zone. The Tree Farm will exceed the 80 percent open space requirement by retaining 92 percent of the WA-zoned lands as open space. While there will be an increase in human activity in the WA Combining Zone due to the development of dwellings, Dr. Wentz notes that the 13 proposed residential lots is less than the 37 lots that could be permitted in the WA Zone. The applicant proposes to close and decommission a number of existing roads and designate fewer trails connecting to Shevlin Park to concentrate human activity within the WA Zone. Finally, Dr. Wentz notes that the design and location of residential lots within the WA Zone allows for two north-south travel corridors and an east-west travel corridor.</p>	<p>No response.</p>	<p>No rebuttal.</p>	<p>None.</p>

Wildlife Management Plan	Hearings Officer Identified Issue Area	Applicant Submittal	Central Oregon Landwatch Response	Applicant Rebuttal	Proposed Conditions of Approval
3	The WMP must include an action plan that identifies specific measures addressing each residential lot, as well as roles and responsibilities for the developer and HOA, and describes how and when the developer will hand off responsibility to the HOA.	<p>Per the revised WMP, the developer will bear initial responsibility for implementation and monitoring of the WMP. Ultimately, the developer will transfer management to the owners when one of three actions takes place: 1. All property has been conveyed or sold to persons or entities other than the developer;</p> <p>2. Fifteen (15) years after the conveyance of the first homesite; or 3. At such earlier time as developer decides.</p> <p>Implementation and monitoring of the WMP is included in the proposed CCR's. Section 4.5 of the Covenants, Conditions and Restrictions (CCRs) requires a wildlife audit by a professional biologist every three to five years to ensure compliance.</p>	The revised WMP mostly repeats the original WMP, and does not provide an action plan. It does not address each residential lot, which is surprising because there are so few lots that have to be addressed (lots 37 and 39-50), and also because of the variability of slopes below the lots.	The action plan clearly lists the proposed wildlife conservation measures, identifies responsible parties, and describes how and when these measures will be implemented. The WMP details how vegetation will be treated in around each lot via the Zone-based vegetation treatments. There is a component of adaptive management purposefully built in to this Plan that is meant to give it flexibility and longevity.	Recommended condition of approval requiring the HOA to submit the biological audit report, as detailed in Section 4.5 of the Covenants, Conditions and Restrictions (CCRs), to the Planning Division. The applicant's biologist should determine the timing of the initial audit report. As part of every audit report, the biologist should determine the timing of the subsequent audit report.
4	What specific measures will be undertaken consistent with the wildfire plan to assure more aggressive fuel reduction measures, if any, will not interfere with deer use of the winter range and migration corridors?	If more aggressive fuels treatments are necessary, the WMP requires that a professional biologist be retained to assess impacts to wildlife habitat. The WMP is included as Exhibit 5 of the WPMP.	There is no explanation of how the zone system affects wildlife habitat or how wildlife habitat will be different than it would have been under the original plan.	The Hearings Officer did not object to the Zone-based treatments approach. The Hearings Officer did not take issue with the substantive analyses or the recommended wildlife habitat mitigation measures.	None.
5	Explain the meaning of the terms "development" and "completion" in the context of transference of WMP management from developer to HOA.	Initial implementation and monitoring of the WMP will reside with the developer. Management of the WMP will be transferred to the HOA under one of the three scenarios detailed above. Long-term compliance with the WMP will reside with the HOA via the CCR's and HOA Bylaws.	No response.	No rebuttal.	None.

WA Zone 100-Foot Setbacks	Applicant Identified Issue Area	Applicant Submittal	Central Oregon Landwatch Response	Applicant Rebuttal	Proposed Conditions of Approval
1	<p>Pursuant to DCC 18.1238.200(B)(3)(c)(1), in a cluster subdivision a 100-foot yard setback is required on all lots within a Wildlife Area (WA) Combining Zone and adjacent to required open space. The Hearings Officer made findings that all lots in The Tree Farm, including lots outside of the WA Combining Zone, will meet the required 100-foot setback.</p>	<p>The applicant requests the Board make revised findings to limit the 100-foot yard setback to only those lots within the WA Combining Zone that are adjacent to required open space.</p>	<p>No response.</p>	<p>No rebuttal.</p>	<p>Recommended condition of approval requiring a 100-foot yard setback for all residential lots within the WA Zone that are adjacent to required open space. This special setback should be shown on the final plat.</p>



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JUL 27 2015 www.oregonlandwatch.org

Deschutes County CDD

July 27, 2015

Deschutes County Board of Commissioners
c/o Anthony Raguine
Community Development Department
117 NW Lafayette Ave.
Bend, OR 97701-1925

Re: Appeal of Miller Tree Farm Decisions in
Tree Farm 1: 247-14-000242-CU, 247-14-000243-TP
Tree Farm 2: 247-14-000244-CU, 247-14-000245-TP
Tree Farm 3: 247-14-000246-CU, 247-14-000247-TP
Tree Farm 4: 247-14-000248-CU, 247-14-000249-TP
Tree Farm 5: 247-14-000250-CU, 247-14-000251-TP

Dear Commissioners:

I am writing on behalf of Central Oregon LandWatch and appreciate this opportunity to provide additional comments following the hearing on July 8. The Applicant's appeals should be denied as it has not sustained its burden of proof on the applicable criteria.

The central theme of the Applicant's presentation at the July 8 hearing was that it was answering and even embracing the Hearings Officer's bases for turning down the applications.

Hearings Officer Green very appropriately rejected the Applicant's proposed development for failure to present adequate wildfire and wildlife plans. Even the Applicant apparently does not dispute that now. Instead, the Applicant's argument in its appeals is that it has answered any problems with its new Wildfire and Wildlife plans. As extensively documented below, the Applicant repeatedly ignored what the Hearings Officer said had to be done.

SCANNED

JUL 29 2015

The New Wildfire Plan

Apparently, the Applicant read only the first part of the Hearings Officer's decision that "it is feasible for the applicant to create an adequate wildfire plan based on those [NFPA] standards" and forgot the rest of the Hearings Officer's sentence, "that includes the critical information missing from the submitted plan." The Applicant's materials submitted in support of its appeals are fundamentally inadequate in a number of ways.



The missing critical information the Hearings Officer called for to determine whether the site is suitable for the proposed use included “at a minimum”:

“I believe it is feasible for the applicant to create an adequate wildfire plan based on those [NFPA] standards that includes the critical information missing from the submitted plan. I find such a plan must include, at a minimum, the following information:

- identification of each residential lot building envelope, the extent and nature of the defensible space around each dwelling, and the fire fuel treatments on the building envelope and the rest of the lot;
- the setback from the upper edge of the slope(s) for each building envelope and dwelling;
- the fuel treatment, if any, on any slope below each dwelling, and if such fuel treatment will occur on open space, what impact it will have on that open space, on surface water drainage, and on wildlife habitat for lots in the WA Zone;
- whether and where decks and outbuildings would be permitted on each lot;
- what specific construction methods and building materials will be required for each dwelling to meet specific, identified NFPA standards;
- a detailed description of how and by whom the wildfire plan will be implemented, monitored, and enforced, with particular attention to the transition between the developer and the HOA;
- a specific, mapped evacuation plan for The Tree Farm and each of the five Tree Farm developments, including directions for operation of the gate on Sage Steppe Drive; and
- a detailed description of when and how residents and guests will be informed of the wildfire plan requirements and the evacuation plan.” (H.O. Decision on Tree Farm #5, pp. 38-39)¹

While the Applicant did provide a map and diagram showing some identification of each residential lot building envelope, it is done at such a small scale that it is not clear whether the specific requirements for setbacks and zones are met.

It also isn't shown by what criteria these building envelopes and dwelling locations were determined. The Revised Wildfire Protection and Management Plan (“WPMP”) June 2015

¹ While the Hearings Officer focused most of her analysis in the context of DCC 18.128.015, see our letters of November 14, December 11 and January 6 for identification of other applicable plan and code provisions regarding wildfire and wildlife.



(“Revised WPMP”) states that the initial design and construction of the community’s infrastructure will follow applicable NFPA 1144 standards. NFPA standards in 1144 require assessment of wildland fire hazards in the structure ignition zone to determine the location of each structure.

Section 4.1.1 requires the authority having jurisdiction (“AHJ”) to perform “a wildland fire hazard assessment of each structure ignition zone to determine relative risk, the extent of wildland fire hazard, and applicable mitigation measures.” Under Section 4.1.2, the structure assessment is to include, “as a minimum”:

“The structure assessment shall, as a minimum, include the following: (1) Identification and documentation of the wildland fire hazards in the ignition zone(s) for each structure within wildland fire hazard areas, according to the elements and conditions in Section 4.2 (2) Determination of mitigation measures for vegetation, other combustibles, and the structure, including the periodic maintenance associated with such measures (3) Establishment of priorities relative to mitigating the risks from wildland fire.”

This wildland fire hazard assessment is to be the basis for recommended mitigation measures relative to the vegetation, other combustibles and structures on the site. Section 4.1.3.

Section 4.2 requires the structure assessment to cover, “as a minimum”:

“4.2.1 Overview of the Surrounding Environment. The structure assessment shall document the conditions of 4.2.1.1 through 4.2.1.5 in the assessment of the surrounding environment as they will place the structure in the most risk from ignition by a wildland fire.

4.2.1.1 The structure assessment shall document the location of structure in relation to predominant topographical features, such as flat open areas, ridges, saddles, steep slopes, natural chimneys like steep narrow draws, or small canyons, that will increase the ignition potential of the structure.

4.2.1.2 The structure assessment shall document local weather conditions, including wind, relative humidity, temperature, and fine fuel moisture content.

4.2.1.3 The structure assessment shall document nearby structures using the same criteria as the primary structure.

4.2.1.4 The structure assessment shall document any neighboring properties that could impact the ignition zone of the property being assessed.

4.2.1.5 The structure assessment shall document the structure’s location on the slope relative to the structure’s potential exposure to heat from a wildland fire.”



None of this analysis is shown in the Applicant's selection of the location of the residential structures. Not only are the individual structure locations not assessed (given the varieties in slope and vegetation over the sites), but not even the groupings in Tree Farm 1, 2, 3, 4 or 5.

Just for examples, where is the assessment of local weather conditions including wind; the assessment of neighboring properties, such as for lot numbers 1, 8-14 and 32-37; the setback from the upper edge of the slopes for each dwelling; where decks are permitted "on each lot"; the fuel treatment on any slope "below each dwelling"; a specific evacuation plan for each of the five developments; and what impact fuel treatment on open space on any slope below each dwelling will have on wildlife habitat?

The Applicant's use of NFPA standards to address the concerns of the Hearings Officer is problematic in that the Applicant has not shown how it utilized NFPA standards in selecting the location of the dwellings.

Also, the Applicant has impermissibly shifted whatever decisions remain on siting from the Deschutes County Board of Commissioners to the Architectural Review Committee ("ARC"). See Applicant's Exhibit 2², under the heading of "Authority Having Jurisdiction" ("AHJ"), which shows the AHJ as the ARC.

This also improperly delays important decisions to a point where the public will have no opportunity to review them. This is an improper delegation of authority and delay of decisions past when they are publicly reviewable.

The bottom line is that "the critical information missing from the submitted plan" and the specification of NFPA standards that the Hearings Officer called for have not been provided. These NFPA standards have not been utilized by the Applicant in any meaningful way to provide the County with the basis it needs to be making a decision under the County Code criteria. These NFPA standards have been merely provided as a "add on" to be used later by the Architectural Review Committee.

Note that other provisions of NFPA 1144 address such things as roofing materials, skylights, landscaping, parking and other matters that one would think an architectural review committee would, in fact, address.

The fundamental problem here is that the Applicant has made no effort to integrate the NFPA standards into the County Code's decision-making process and criteria. For example, the history of wildland fire in the area should be critical in the County's assessment of whether the particular sites proposed for dwellings are suitable. Yet, the Applicant proposes that Section 4.3.4 of NFPA 1141 calling for the assessment of the history of wildland fire be done by the ARC to come up with a "hazard mitigation plan" that is to be implemented with a "wildland fire hazard severity map" by the Homeowners Association. With all due respect, such a map will be worthless if it is developed long

² This Exhibit 2 shows the "Implementing Document" as "Design Guidelines." These "guidelines" are just a repetition of the NFPA 1141 and 1144 standards in Exhibit 2 and impermissibly convert these "standards" to mere "guidelines."



Distance Research which calls for doubling the distance of the existing rule. See the attached report of fire expert Addison (Dick) Johnson. The 30-foot setback standard is not adequate considering convective heat.

The Hearings Officer's third bullet called for identification of the fuel treatment on any slope below each dwelling, and if that fuel treatment would occur on open space, what impact it would have on that open space, on surface water drainage, and on wildlife habitat for lots in the wildlife overlay zone.

The Applicant has not identified the fuel treatment on any slope below each dwelling. It doesn't address any particular treatment for slopes other than saying it is taking special note of slopes greater than 20% and showing them on a map. The Wildfire Plan, though, does not identify the particular treatments to occur for each dwelling. Though it appears from the Applicant's map that there are substantial slopes greater than 20%, there is no description of the variety of areas or, again, of the individual lots affected.

The Applicant further fails to explain what impact fuel treatments on slopes will have on open space or on surface water drainage.

Despite the Hearings Officer's identification of specific concerns for Tree Farm 4 and 5 with regard to protection of wildlife habitat and conflicts between the wildfire and wildlife plans, the revised plans provide little of the additional information called for by the Hearings Officer. The Hearings Officer stated (at pages 38-39 of the decision on Tree Farm 5):

"Tree Farm 5 is the most western of the cluster developments and has the steepest slopes and the most dense vegetation in The Tree Farm. Dwellings in Tree Farm 5 would be located farther west than dwellings in the nearby Highlands at Broken Top PUD. They also would be farther west than dwellings in the Saddleback Subdivision, just north of Shevlin Park, which was evacuated during the 2014 Two Bulls Fire. All of the proposed Tree Farm 5 dwellings are located at the top of a slope. For these reasons, and in the absence of an adequate wildfire plan, the Hearings Officer finds applicant has not demonstrated the site and configuration of Tree Farm 5 sufficiently address predicted wildfire behavior affecting residential lots and dwellings. I also find it is neither feasible nor appropriate for me to craft conditions in an effort to make the applicant's proposal approvable.

* * *

As discussed in the findings below, the applicant's wildlife expert testified that in her opinion, management of vegetation on Tree Farm 5 for fire fuel reduction can and will be accomplished in a manner consistent with preservation of wildlife habitat. However, because of the sloped lots and moderate vegetative cover in Tree Farm 5, and the suggestion in Mr. Marshall's testimony that Firewise and NFPA standards might require thinning and/or removal of vegetation on slopes below the dwellings – *potentially within the open space tract* – the Hearings Officer finds fire fuel reduction



after the lots and dwelling locations have been selected and, apparently, the houses built. The history of wildland fire and a wildland fire hazard severity map should be used early to decide dwelling locations.

Beyond these general problems with not utilizing the NFPA standards to show how and why sites selected for dwellings are suitable, the Applicant has failed to provide the specific information required by the Hearings Officer under her first bullet, “The extent and nature of the defensible space around each dwelling.” (Emphasis added.)

Rather than provide this specific information, the Applicant presented a generalized three-zone approach, with certain landscaping and management to be done 1) within the first 30 feet, 2) within 30 feet to 100 feet, and 3) within 100 feet to 200 feet from a dwelling. If the Applicant had instead done the individual assessment called for by the Hearings Officer, it would have shown that proposed dwellings 1, 2, 8-14 and 32-37 are so close to the property’s north boundary that the protective measures between 100 feet and 200 feet cannot be completed on the property subject to these land use applications. It also appears that for lots 1, 4, 8 and 37 that not all the proposed management for the 30-100 foot zone can be done either.

The Applicant likewise ignored the Hearings Officer’s second bullet, “The setback from the upper edge of the slope(s) for each building envelope and dwelling.” The Applicant’s maps don’t show what is considered to be “the upper edge of the slope(s),” and the topographic features on its Exhibit 6 depict slopes apparently extending into the buildings themselves.

As for the width of the setback, the Applicant has selected 30 feet, apparently on the basis of NFPA 1144 Section 5.1.3.2. But then the Wildfire Plan makes two decisions inconsistent with the NFPA. The Plan calls for 30 feet of separation “from a vegetated slope” only when the slope is “greater than 20%.” (Wildfire Plan, p. 6) Section 5.1.3.2 isn’t limited to a certain percentage of slope, but only refers to “a vegetated slope.” It provides that a building is to be located within 30 feet of a vegetated slope, then special mitigation measures are required by the AHJ.³

The second inconsistency with the NFPA is to Section 5.1.3.3. The Wildfire Plan provides that a dwelling may be built within 30 feet of a 20% slope if mitigation measures like a noncombustible wall or barrier are used. However, Section 5.1.3.3 allows such a barrier only if sufficient space is unavailable between the structure and slopes. That is, before any barrier may be built there must be a showing that the dwelling cannot be moved back on the lot.⁴

These inconsistencies call into question where the Applicant came up with the three-zone approach and its scientific basis. Its scientific foundation is also called into question by the 2014 Safe

³ The Applicant’s Exhibit 2 inappropriately assigns responsibility for this decision to the ARC instead of Deschutes County which is to decide whether a site is suitable under the County Code.

⁴ Additionally, the Applicant has proposed variations from the requirements of NFPA 1141 Sections 5.3.11 and 5.2.17.1 on the size of turnarounds at cul-de-sacs and emergency access road standards. Its proposal to instead “work with local fire department” is not justified and would occur outside public review processes.



in Tree Farm 5 may be more extensive than in the other Tree Farm cluster/PUDs.”
(Original emphasis.)

Despite this clear explanation of the Hearings Officer’s concerns, the Applicant failed to clearly identify how treatments would be altered and what effects there would be.

The fourth bullet of the Hearings Officer was for the Applicant to identify whether or where decks and outbuildings would be permitted on each lot. Again, the Applicant simply hasn’t done this. Other than showing a couple of sample outbuildings on its maps, the Applicant has not clearly shown the location of where outbuildings would go or where decks would be.

The Hearings Officer in her sixth bullet further called for “a detailed description of how and by whom the Wildfire Plan will be implemented, monitored, and enforced, with particular attention to the transition between the developer and the HOA.” As an initial matter, the Applicant did not pay “particular attention to the transition between the developer and the HOA,” but instead just described the fact that the transition would occur when the development is fully built out, or within 15 years, or whenever the developer wants to. The particulars of the transition were not addressed.

The issues of implementation, monitoring and enforcement are critical, not only because there are so many transitions between entities, but also because this program, to be effective, has to be consistently implemented for over 100 years.

Despite this reality, the Wildfire Plan is seriously lacking in details on how the Plan will be implemented, monitored and enforced. A significant problem is the language of the Wildfire Plan which is often passive and permissive, as on page 3 where the Plan “may require” or on page 4 where NFPA is referred to as “guidelines.”

There are also references to a number of documents, such as CC&Rs, bylaws and Design Guidelines without any clear analysis of consistency between them. There is also a reference to “Rules and Regulations,” but there does not appear to be any such document in the Applicant’s materials. See the reference on page 3 of the Wildfire Plan.

There is also language in the Wildfire Plan at pages 4 and 6 that refer to the Tree Farm following the most restrictive standards or codes as between NFPA standards and Oregon state fire codes and building codes. At page 6, there is a reference to deed restrictions including “the specific fire fuel management treatments.” Without clear identification of which standards are more restrictive than others, it is difficult to understand what the most restrictive provisions will in fact end up being applied and what specific fire fuel management treatments will be included in any deed restrictions.

At page 11 of the Wildfire Plan, there is a statement that it is being submitted as part of the land use applications and thus becomes part of the land use decision authorizing the development. As a practical matter, it is not always the case that something included within a development plan automatically becomes a standard which can be enforced. The better way is always to include critical provisions in conditions of approval.

Throughout the Wildfire Plan there are statements of who has authority to enforce the Plan. A variety of entities, including the Architectural Review Committee, the Homeowners Association,



Deschutes County, the Road Department, the Tree Farm developers, etc. are mentioned. See, for example, the mention of all the authorities with “the authority to enforce the WPMP.” In fact, at page 12 the Plan states “authority to enforce this plan will rest with a variety of entities, including the developer, the HOA, the County Public Works and Road Departments, the local fire department and the County Community Development Department.” Nowhere, though, does the Plan actually call out who has the “responsibility” to enforce the Plan. As has become apparent in recent discussions on how code enforcement in the County can be improved, the reality is that the County does not have the resources to enforce its land use decisions. Also, its complaint-driven enforcement system is seriously lacking where private citizens lack resources to enforce provisions and lack access to property to obtain evidence to enforce the provisions.

The suggestion that an Architectural Review Committee or Homeowners Association will effectively enforce these provisions is without foundation. HOAs easily become dysfunctional and certainly over such a long-term monitoring need, there is no assurance that an HOA will even be functioning, let alone that it will be strictly enforcing all of the associated provisions. The standards being approved here are also not enforceable since they can be easily amended by the HOA.

Though “funding” is addressed at page 12 of the Plan, there is in reality no assurance of adequate money after the developer ceases contributing. Expenses may become a part of the HOA annual budget, but there is no assurance that it will be enough. There is no discussion of funding for all the responsibility the County will have or for adjoining land owners to maintain vegetation.

Bullet number seven of the Hearings Officer called for “a specific, mapped evacuation plan for The Tree Farm and each of the five Tree Farm developments.” Though the Applicant provided a map and generic evacuation plan, there is no specific evacuation plan for each of the five developments. See also the attached Johnson report on inadequate evacuation routes.

In addition to the above, there are a number of other problems with the Wildfire Plan, including:

1. The Plan at page 4 states that the Governing Documents will incorporate NFPA requirements “to create a fuel break to slow or stop an approaching wildland fire from adjacent properties.” No such fuel break is identified that would slow or stop an approaching wildland fire from the variety of properties surrounding the proposed development.
2. At page 6, the Plan refers to “attached Exhibit 3 to this WPMP for a detailed topographic map showing the homesites and the specific setback requirements that will be included in the final plat of The Tree Farm.” The exhibit does not clearly show the specific setback requirements and, as explained above, shows the setbacks on some proposed homes extending beyond the property boundary.
3. The Plan at page 6 provides that structures should have at least 30 feet of separation from a vegetated slope greater than 20%, but then allows a “variance to this provision” if in compliance with NFPA standards. There is no explanation of what this “variance” could be. Note that the variance could be in addition to “special mitigation measures” such as walls.



4. The Plan at page 7 claims to be compatible with Shevlin Park's Vegetation Management Plan (March 2008) and management of USFS lands. These conclusions are not adequately explained and are apparently based on the simplistic assumption of similarity by burning understories, mowing understories, hand-treating brush, doing thinning and using selection method systems. That does not constitute "compatibility" or adequately explain actual different management practices. A critical impact of this development will be potential impacts on Shevlin Park's vegetation management. There is a very real possibility of lawsuits by homeowners against Shevlin Park for failure to adequately protect these homes.
5. The Plan's conclusion that its management will be "consistent and compatible with these methods" is not sufficient. It is also not sufficient because it fails to address private lands to the southeast and to the north in terms of compatibility.
6. The Plan at page 7 refers to fire fuel reduction treatment "on an on-going basis" which is not adequate to explain exactly how these treatments will be done over time.
7. The Plan at page 9 refers to an "attached Exhibit 6 to this WPMP for plans showing the Fire Prevention Zones on each lot in Tree Farm 1-5." Again, these zones impermissibly extend off the property.
8. The Zone Model presented at pages 8-9 is not specific enough. Not only does this zone method ignore the Hearings Officer's call for individual assessments for each house, but the zones themselves can be extremely general, such as:

"Zone 3 – 100-200 feet from the home. Trees are thinned and pruned in this area, woody debris and brush is mowed (with some scattered exceptions to provide wildlife habitat) and removed, density of trees is reduced so canopies are not touching."

There is simply too much variety in the proposed locations of the houses, the slopes, terrain, wind patterns, etc. to allow such a generic zone method to define how the area will be protected.

9. There was a suggestion at the July 8 hearing that the Applicant would call for an auditing of every three to five years. There is no identification of adequate funding for that and there is no reliable mechanism or requirement for this to be a permanent obligation. It is also consistent with statements elsewhere in the Plan that suggest annual work would actually have to be done.
10. The new Wildfire Plan also fails to address whether existing public services are adequate to cover a wildfire blowing into this proposed subdivision. As noted in Mr. Johnson's report, the determination of the adequacy of public services needs to take into consideration that firefighting resources usually relied upon to fight a wildfire may not be available due to the presence of other fires, which is a common occurrence.



11. Water pressure availability has also not been adequately addressed. See the attached Johnson report. Given the identified problems, any postponement of a determination of compliance with this criteria must be shown to be “feasible.”
12. The slopes and lands to the southeast are also a fire concern not addressed by the Applicant, either in terms of fire coming from this area, lack of control over vegetative management there, or lack of evacuation routes. The only proposed evacuation routes go to the southeast, so if there is a fire from that direction there is no evacuation route available to the north.

The New Wildlife Plan

Another major concern of the Hearings Officer in her rejection of the applications was that the Wildlife Plan was not adequate and did not reconcile apparent differences with the Wildfire Plan. The Hearings Officer stated:

“I find the relevant wildlife issues include development of dwellings, roads, and trails, and the vegetation removal required for those features and for fire fuel reduction.

* * *

Dr. Wente’s opinion would support a finding that the applicant’s proposed fire fuels management will be consistent with conservation of the Tumalo winter deer range in Tree Farm 5. However, as discussed in the findings above, the Hearings Officer has found the record, including the applicant’s wildfire plan evidence, suggests that in order to adequately address predicted wildfire behavior it may be necessary to remove significant vegetation downslope from the dwellings, including from the adjacent open space tract(s). It is not clear that Dr. Wente considered removal of vegetation beyond historic fire fuel treatments in forming her opinion about impacts on the winter deer range. Moreover, as discussed above, I have found the applicant’s wildfire plan is inadequate because, among other deficiencies, it does not specify what fuel treatments will be required to reduce the fire risk for dwellings on each Tree Farm lot.

* * *

[T]he Hearings Officer finds the WMP suffers from the same lack of detail and clarity as does the wildfire plan as how, when, where, and by whom these measures will be undertaken, how their success will be measured, and how and by whom they will be enforced.

* * *

As is the case with the applicant’s wildfire plan, the Hearings Officer finds that to be effective, the WMP must include more detail, such as an action plan that identifies specific measures addressing each residential lot in the WA Zone, as well as roles,



responsibilities, and timing of measures to implement the action plan.” (H.O. Decision on Tree Farm #5, pp. 40, 42-43)

The Applicant in the new Wildlife Plan does not provide what the Hearings Officer said is needed here. There is certainly no such thing as “an action plan that identifies specific measures addressing each residential lot in the WA Zone, as well as roles, responsibilities, and timing of measures to implement the action plan.” (Emphasis added.)

The June 23, 2015, Wildlife Habitat Plan mostly just repeats (verbatim) the July 2014 Wildlife Assessment and Management Plan. What is new is a three-page section entitled, “Integration of Wildlife Habitat Management with Wildfire Protection.” The discussion focuses on the three-zone system adopted by the new Wildfire Plan. Accordingly, it suffers from the same lack of definiteness of the Wildfire Plan.

The Hearings Officer’s call for identifying “specific measures addressing each individual lot in the WA Zone” was ignored. This is surprising, not only because there are so few lots that have to be addressed (numbers 37 and 39-50), but also because of the variability of the slopes below the lots. See Applicant’s Exhibit 3, a depiction of the slopes greater than 20%. Rock outcrops and vegetation also vary across the slopes.

The zone method is also not meaningful. Zone 1 covers only the first 30 feet and the idea was that dwellings would be set back 30 feet from any vegetative slope anyway. NFPA 1144 Section 5.1.3.2. Zone 3 at the other end of the zone system provides no meaningful change from what the Hearings Officer already rejected.

Despite the title of “Integration,” there is no explanation how the zone system affects wildlife habitat or how wildlife habitat will be different than it would have been under the 2014 plan. Apparently, there have been few changes since Zone 3 applies not only to 100-200 feet from the dwellings, but is to apply to the remainder of the open space (Wildlife Plan, p. 10) and is to cover 92% of the WA Zoned area within the project study area. Also, Zone 3 is essentially the same as the 2014 plan based on current management:

“Zone 3 management standards within the open space will mimic those that are already practiced on the PSA under the Miller Tree Farm LLC Management Plan.”
(Wildlife Plan, p. 10)

The only differences identified in the new Wildlife Management Plan are:

1. On slopes greater than 20% in Zone 2 (the 30'-100' zone), the Zone 2 treatment will extend beyond 100 feet out to the lot boundary. What difference that makes is not explained, but it is apparently not much, at the most maybe another 100 feet to the lot boundaries. Also not explained is the rationale for stopping at the lot boundary, since the greater than 20% slopes extend far beyond those boundaries. See Applicant’s Exhibit 3, the map of slopes greater than 20%.



The reason apparently has nothing to do with wildlife biology or wildfire concerns, but rather the fragmented land ownership and responsibilities inherent in this project. Below the lot boundaries will be the open space that Bend Parks and Recreation will manage. Apparently the open space management will vary according to ownership, not science. Whether that will absolve Bend Parks and Recreation District from liability when it is sued by homeowners who have lost their dwellings arguably because the Parks District managed the open space to a standard less than what was necessary is unknown. However, it is certainly foreseeable.

2. The new Wildlife Plan also provides for “special vegetation treatments” on slopes greater than 20%. Again, though, the treatments are limited to the lot boundaries.

Though the treatments have the embellished description of “hand pruning to provide breaks in the linear continuity of brush patches oriented along the steep slope” (Wildlife Plan, p. 11), the pruning is not described except to say that it is not “total removal.” Also, the area covered by this “special vegetative treatment” is trivial, approximately four acres in total spread across lots 37 and 43-50. (Wildlife Plan, p. 11)

Unfortunately, the 14-foot spacing proposed by the Applicant is not going to be adequate for wildland fire. See the attached Johnson report. Neither is the proposed NNW to SSE wildlife corridor. While good for wildlife, these provisions just do not provide adequate wildfire protection for the residences or for firefighters.

On top of all this, the new Wildlife Plan fails to factor into its prescriptions and analysis the clearing of vegetation in the development of dwellings, roads and trails, as identified by the Hearings Officer. That is, a truly integrated wildlife plan would take into consideration the cumulative effects of all the impacts on wildlife in this area including the fuel treatments, dwellings, road and trails combined. That analysis has not been done.

Finally, the Applicant has failed to provide a detailed action plan showing the roles, responsibilities and timing of measures to implement the action plan. There is no integration of management of wildlife between the development and Bend Parks and Recreation District. There is also no identification of funding needed for wildlife habitat. The presumption appears to be that any needed funding for wildfire treatments will somehow translate into wildlife habitat protection. That, though, is neither explained nor provided for in any kind of funding or other enforceable agreements.

Additional Response to Comments and Questions at July 8 Hearing

As I stated at the hearing, this is a land use decision that will put people and residential structures in harm’s way for as long as the proposed developments exist. There is no reason to believe that development won’t be on these sites for over 100 years.

Contrary to the suggestion at the hearing, the Miller Tree Farm is different from development at the coast or in Portland where the risks are tsunamis and earthquakes. What is proposed here is to actually build further out into a high fire risk area and where residential development does not already exist, as found by the Hearings Officer, quoted above.



There was also a suggestion at the hearing that everywhere around Bend is of equal fire risk. That is simply wrong. There is a demonstrable difference in fire risk and hazard as shown in the map of large fires in Central Oregon over the past 100 years. Subdivisions in the west and south sides of Bend that adjoin ponderosa pine forests are obviously at far higher risk of catastrophic fire than subdivisions in the northeast and east. Most of the proposed Miller Tree Farm subdivisions would have burned in the 1990 Awbrey Hall Fire and would have come close to burning in the 2014 Two Bulls Fire.

This application is also occurring in the context of recently-adopted comprehensive plan provisions under Section 3.5.11:

“a. Ensure that land use activities do not aggravate, accelerate or increase the level of risk from natural hazards.

b. Address wildfire concerns to and from development, through consideration of site location, building construction and design, landscaping, defensible space, fuel management, access and water availability.

c. Require development proposals to include an impact evaluation that review the ability of the effected fire agency to maintain an appropriate level of service to existing development and the proposed development.

* * *

g. Require new subdivisions and destination resorts to achieve Fire Wise Standards from the beginning of the projects and maintain those standards in perpetuity.”

This is exactly the kind of proposal to which the County should be applying its fire hazard policies.

The premise of this proposed development is that with Firewise and NFPA standards the development can be made safe for residents and firefighters. While fireproof building materials, landscaping and thinning are good ideas, there is no basis to assume that they will make any meaningful difference in a large, wind-driven catastrophic fire. There is simply no evidence in the record by the Applicant addressing catastrophic fire or ensuring that such Firewise and NFPA standards can, year after year, effectively make these areas safe for residential development and firefighting.

Also, as explained by Mr. Johnson in his attached report, the NFPA standards are not all-encompassing. They do not take into consideration, for example, the latest research on Safe Separation Distance associated with wildfires and convective heat.

These standards are also being inappropriately applied here, not to protect areas already developed or being developed, but to justify building further out into the danger zone.

At the hearing, Applicant mentioned that the threat of fire from adjoining lands could be discounted because they are “slated for urban development.” Just because the surrounding lands were zoned



Urban Area Reserve 30 years ago does not mean development is imminent. Obviously, they haven't occurred to date. Current and future risks need to be assessed and assumptions of further urban development cannot be relied upon.

The Applicant argued in its rebuttal at the public hearing that LandWatch had raised arguments outside of the scope of appeal regarding evacuation plans, water pressure and management of adjoining lands. There is no basis for that assertion and, in fact, a number of elements of the proposed new Wildfire Plan and the identification of NFPA standards explicitly address evacuation plans, water pressure and management of nearby lands.

Conclusion

The Applicant's appeal should be denied.

Very truly yours,



**Paul Dewey,
Executive Director**

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Wildfire Risk Management

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July 27, 2015

Rebuttal

To

Submissions just prior to, July 8, 2015 Hearing Before Deschutes County Commissioners:

The many impacts of moving further into what is a natural fire environment are complex and numerous; wildlife, recreation, weather, water availability etc., and they all need to be assessed together through integrated review. This review has not been done and fire risk, to the public and emergency service personnel has not been adequately recognized.

Facts:

1. The proponents acknowledge that “Historically the most prevalent natural hazard in Deschutes County has been wildfire.”
2. The primary threat is from wildland fires advancing from outside the development, just as Awbrey Hall, Two Bulls and the more recent Shevlin Fire have most recently shown.
3. The proponents (developers) do not and will not have authority to decide or implement any fuel reduction or fire prevention work on adjoining property to limit the risk to the subject property.
4. Even though a rhetorical comment was made in attempting to lead the proponent’s fire witness to minimize the higher risk of the Bull Springs, Shevlin Park and western areas outside of Bend, Attachment 1 does show a higher risk in these areas. This map was developed by a Deschutes County organization “Project Impact”, and has only been updated by the author to include more recent larger incidences.
5. Other fires in Deschutes County such as in La Pine, Sunriver, Sisters or Redmond as well as to the south or west in other counties can absorb firefighting resources and making them unavailable to assist the local resources. This common occurrence has not been taken into consideration in any risk assessment by the proponents.
6. The newly supplied information shows that road widths have been improved, but having one improved entrance/egress and the one emergency entrance/egress gated with its access to a local road beside Elementary and Middle Schools should not be acceptable. This can compound the problem with school

age children mixing with emergency vehicles and evacuees all of which are under stress. As these schools are used for various purposes when school is not in session it is only the magnitude that varies.

7. Water availability is inadequate due to lack of pressure to many of the hydrants in the development, See proponents submission of the "City of Bend Engineering Division Peak Conditions Water Analysis". The low pressure, as low as twelve pounds per square inch, will require an engine (fire truck) to be stationed within ten feet of the hydrant using a hard suction line to obtain water to protect nearby structures. This is in contrast to using a Large Diameter Hose soft supply line and having the engine located by the structures that require protection. The first scenario (call it Hard Suction) requires more time, more equipment and a separation of the engine from those people operating the hoses lines. The second (call it LDH) is faster, more efficient. The larger than average sized structures which are loosely spaced further complicates these problems possibly requiring one engine per structure, again a drain on possible resources affecting not only the rest of the City but also their neighbors.
8. Residential sprinklers have been added to the plans, and I strongly support this addition. It must be kept in mind residential sprinklers stop the fire from spreading to the other areas exposed to the fire.

In other words, they will reduce the risk to the wildland from the structure and only have a very limited effect on saving the structure from an advancing wildfire.

9. The fuels reduction work that has been accomplished is commendable and even though the property should not be used as a residential enclave the work should continue. The thinning has been done to a commercial thinning specification, which is also the specification used in Zone 3 of the Wildlife Management Plan, pg. 10, <8^{inch} spaced out at 14^{ft} between the boles (trunks) which is a silvicultural and wildlife prescription. With larger Ponderosa Pine trees there is no spacing required other than the crowns cannot touch. These spacings are not adequate for wildland fire. When thinned for a reduction of the possibility of a crown fire (fire spreading between the tops of the trees) the thinning prescription opens up the stand to 22^{ft} between the crowns of the trees ⁽¹⁾⁽²⁾.

The other fuels work, grass, shrubs and litter should be done on a small area by area mosaic by experienced wildland fire behaviorist and wildlife biologists. This mosaic should be maintained on a yearly basis. To maintain and/or improve the fuels manipulation requires the use of either mechanical or the return of fire to the land. Mechanical treatment is noisy and can create large amounts of dust; fire on the other hand creates smoke with particulates and a certain level of fear to people that live in the area. I have experienced public complaints, some of it very heated when attempting to use either treatment methods adjacent or even near to residences. How will the HOA handles these and still keep the desired level of fuels work accomplished? Unless there is some enforceable consequence to not accomplishing this, then it will not happen.

These fuels treatments if not maintained will add significant risk to adjoining properties including the schools, natural park and National Forest. The fact that these homes are there will also limit the options available to nearby properties to treat and/or maintain the fuels on their land which can increase the hazards to and from the development.

10. Topographic allowances begin with a slope of greater than twenty percent requiring a structure setback of 30^{ft}. This is based on radiated energy and does not include convective heat transfer which we are now able to take into account and which has been now calculated and adopted for firefighter safety zones. If firefighters are expected to protect structures then this new formula will be used and so it should be applied to any infrastructure. (See Attachment 2)

11. The NFPA which has been quoted extensively by the proponent. It should be recognized that the NFPA is a Northeastern organization that applies very broad brush suggestions in an attempt to apply the same standard across the nation and world, which is fine for structures, but should not be used as a hard and fast rule to be applied the same to the western wildfire prone states. The NFPA has stated in its "Community Wildfire Safety through Regulation" publication "A Best Practices Guide for Planners and Regulators" published in 2013, that there are "Four Good Reasons for Wildfire Regulation in Your Community", reason number 1. Protect Lives of Residents and Firefighters. 2. Limit Property Damage and Protect Community Assets. 3. Save Taxpayer Money. 4. Complement Voluntary Wildfire Safety Efforts.

Some of the recommendations included in this publication have been recommended by the proponents, but others have been omitted such as on page 15 "Multiple accesses required for subdivisions or project of certain size", "Emergency firefighting water supply required". On page 23 under "Neighborhood/Subdivision Scale WUI Tools", "Water Supply" "Require firefighting water supply, Provide hydrants with adequate pressure and volume or a year round water source...", "Tax districts to fund fire mitigation projects (vegetation clearance)" "Establish special districts funded by homeowners to conduct wildfire mitigation services for the neighborhood (e.g. clear and maintain vegetation, install signage, develop evacuation plans)". They make a strong case for governmental regulation and establishing taxing districts rather than rely on Homeowners Associations. HOAs, for example, have no obligation to protect adjoining properties from threats on the land managed by the HOA. Please see Attachment 3 for more detailed reasons.

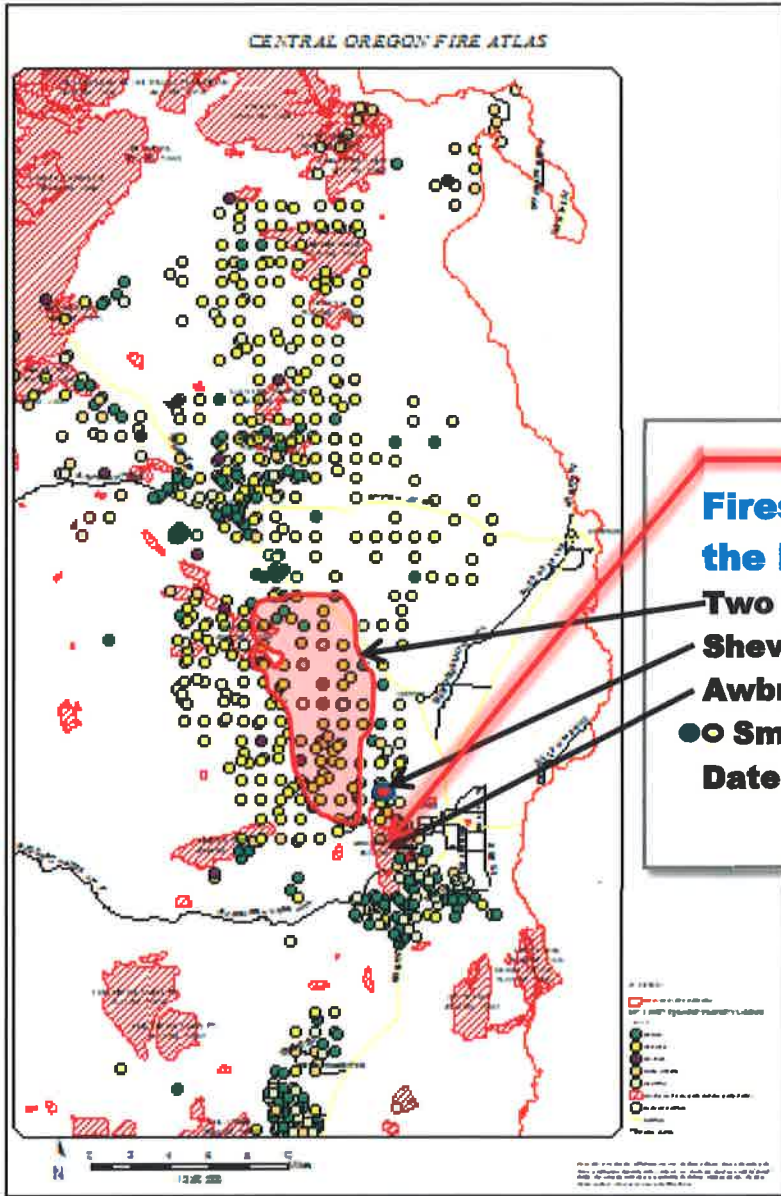
12. Wildfire and Wildlife disciplines, ideal desires frequently conflict and they do here. Hiding and thermal cover, browse and wildlife corridors are the usual culprits.

Hiding cover usually means continuous vertical fuel strata which to fire is a ladder to allow fire to get to the top of the trees where wind is stronger, temperature higher and humidity is lower. All of these lead to greater amount of fire brands and spot fires at a greater distance jumping defensive barriers.

Browse to a firefighter means fuel to a fire. Clumps away from the underside of trees are fine, but under timber leads to the same result as the hiding cover problem.

Wildlife corridors such as the two proposed in this development can be of little consequence as the far western one is, but the NNW to SSE one more centrally located or more eastern is a fuse leading to a potential disaster. The most common winds that have spread larger wildfires in this local are NNW to SSE.

Attachment 1



Proposed Development location

Fires that could have impacted the Proposed Development

- Two Bulls Fire 2014**
- Shevlin Fire 2015**
- Awbrey Hall Fire 1990**
- Smaller fires of various causes and Dates.**

Attachment 2

**Firescience.gov Friday
Flash News**

Issue 96 | July 11, 2014

**CRITICAL New
Wildland Firefighter Safety
Zone Research**

**Critical New
Wildland Firefighter
Safety Zone Research**

**The new calculation is
based on *vegetation* height
rather than *flame* height**



2011 Las Conchas Fire, New Mexico

Photo: Kari Greer - National Interagency Fire Center

For many years, the **Joint Fire Science Program** has funded the wildfire safety zone work of **Bret Butler** who is a research engineer at the Missoula Fire Sciences Laboratory. Bret developed flat terrain safety zone recommendations for firefighters. As a result of his initial work, the JFSP funded Bret's additional research which focuses on safe separation distances on slopes.

*Although results are preliminary and subject to change,
this new research should be used to provide an extra margin of safety for all wildland fire personnel.*

U.S. Forest Service scientists Russ Parsons and Ruddy Mell collaborated on the project,

providing assistance formulating and running the computer simulations that form the basis of the modified rule.

Safe Separation Distance (SSD)

$$\text{SSD} = 8 \times \text{Slope-Wind Factor} \times \text{Height of Surrounding Vegetation}$$

Firefighters:

Please watch for future releases and check the date of the table you are using.

New Preliminary Proposed Safety Zone Rule (July 2014)			
Calculating a Safe Separation Distance (SSD)			
SSD = 8 * Slope wind Factor * Height of the surrounding vegetation			
SLOPE-WIND FACTOR			
Wind Speed	Flat 0% Slope	20% Slope	>30% Slope
Light 0-10 mph	1	2	3
Moderate 11-20 mph	2	3	5
Strong > 20 mph	3	5	6

ADDITIONAL CONSIDERATIONS

1. For a **20-person crew**, add **10 feet of radius** and for a **vehicle** add another **5 feet of radius**.
2. The **area in red** requires large natural openings or construction by mechanized equipment.
3. The proposed rule is **to be used for flat ground rather than the existing flame height rule**.
4. Also consider **additional lookouts on the ground and in the air** to monitor fire activity with **early egress to escape routes and safety zones**.
5. At **30% or greater slopes**, hot gases tend to stay **close** to the ground.

In the two **examples** below, with slope, wind, and vegetation height remaining the same, the calculated safe separation distance of the proposed rule is **double the distance of the existing rule**.

The difference is due to the influence of wind and slope on fire intensity.

Example from *Existing Safety Zone Rule*

Based on flat terrain with no wind

- Flames are 6 feet tall, wind speed is 10 miles per hour, slope is 20 percent and sagebrush is 3 feet tall.
- Radius of the safety zone = 4 x flame height = **4 x 6 feet = 24 feet**

Example from *Preliminary Proposed New Safety Zone Rule*

Based on vegetation height not flame height

- Wind speed is 10 miles per hour, slope is 20

percent, and sagebrush is 3 feet tall

- Slope-wind factor from the table is 2
- Radius of the safety zone = 8 x slope-wind factor x vegetation height = **8 x 2 x 3 feet = 48 feet.**

Disclaimer: This proposed safety zone rule should be considered preliminary because it is based on limited data and analysis and subject to increase or decrease based on additional data. **It is presented for release this fire season with the intent of increasing firefighter safety and reducing risk of injury.** It is likely that an updated rule will be released in the next year.

Read the article in the International Journal of Wildland Fire:

Wildland Firefighter Safety Zones: A Review of Past Science and Summary of Future Needs

Monitor www.firelab.org and firescience.gov for updates



Photo: Setting up project sensors in Alaska. Courtesy Bret W. Butler, Missoula Fire Sciences Lab

NEW RESEARCH REVEALS HOW WILDFIRES SPREAD

07/20/2015

The phrase "spreads like wildfire" is well known, but until recent discoveries by researchers at the University of Maryland (UMD), U.S. Forest Service, and University of Kentucky, it wasn't well-understood how wildfires actually spread.

Specifically, it was unclear how radiation and convection - two heat transfer processes that occur in wildfires - contribute to the spread of such fires. Now, evidence presented in a new paper in the Proceedings of the National Academy of Sciences (PNAS) reveals that the spread of wildfire is caused primarily by convection, the transfer of heat through the movement of liquids or gasses. Convection determines flame behavior in a fire, and convective air currents also can heat or cool nearby vegetation.

"This discovery provides the missing piece of the puzzle we needed to describe wildfire dynamics," says Michael Gollner, an assistant professor in the University of Maryland's Department of Fire Protection Engineering who contributed to the study.

"Current computer modeling systems are not very good at predicting the spread of fire. We present a physical basis from which to create a new model that won't break down under the most extreme conditions. This will have a huge impact on firefighting strategy, effectiveness, and safety."

Prior to this study, little was known about the role of convection in the spread of wildfires because research had focused on radiant heat - heat transferred by electromagnetic waves. Heat from the sun is another example of such direct radiation of energy. Studies used to create predictive wildfire models assumed that radiant heat governed how fast a fire spread.

However, this team of scientists, led by Mark Finney of the USDA Forest Service Rocky Mountain Research Station, unexpectedly found that the net rates of heat transferred by radiation were insufficient to ignite the fine fuel particles that constitute wildland vegetation. Instead they found such particles are efficiently kept cool by convection until contacted directly by flames.

UMD's Gollner helped Finney determine what these convective motions were and how they impacted the fire by running small-scale experiments in a special combustion wind tunnel at Maryland. Colleagues at the University of Kentucky provided a framework to scale up the phenomena, and used high-speed thermal infrared cameras to observe heating in large scale fire spread experiments run at the Missoula Fire Sciences Laboratory's unique combustion wind tunnel in Missoula, Mont.

Together, their efforts produced a never-before-seen picture of the flame movement that governs advancement of such fires. Outdoor experiments and prescribed fires extended their results, demonstrating the model could replicate the behavior of large-scale wildfires.

The experiments led to the discovery of previously unrecognized flame behaviors and how those behaviors cause wildfires to spread. The team discovered that flame vorticity (circulations) and instabilities due to the buoyancy of flame gasses cause wildfires to spread by forcing flames downward into the fuel bed and bursting forward ahead of the fire into fresh fuel, such as grass and brush.

"This study opens the door into the little known world of flame dynamics and gets us closer to understanding the complexities of radiative and convective heat and how they affect wildfire spread," says Finney.

Why Planners Need to Get Involved in Wildfire Protection

Traditionally, reducing wildfire risk has been treated as a job for the fire department or district, and planners were happy to stand on the sidelines. That day has passed, and planners can and should have a more significant role in protecting communities from wildfire. Planners are uniquely qualified to assist their communities in creating a more comprehensive approach to wildfire risk — one that goes beyond structure and site design to fundamentally change the location, design, and type of development in high wildfire risk zones. The rising toll of fire losses in the wildland/urban interface reflects not just a wildfire problem but a problem of poorly planned development, and planners can change that.

To make matters worse, research on global climate change indicates that losses due to wildfire are going to get worse in coming decades, with some models predicting that the total number of trees and other vegetation consumed by wildfire will at least double in the western United States over this century. To reduce those losses we need to expand our understanding of fire risk to include site, subdivision, and even community design — and that is what planners are uniquely trained to do. This guide summarizes many of the key planning, subdivision, and zoning tools that planners can use to help protect their communities from wildfire. These actions should complement — but not replace — the well-proven techniques we already use to reduce wildfire risk through fire and building code enforcement.

Why Don't More Communities Have Wildfire Regulations?

While wildfire hazards to life and property are often clear, many at-risk communities have few or no wildfire regulations. The reasons for inaction are many. First, the seriousness of these threats is not always clear and present to the average citizen. Wildfires may affect a community only once every decade — or even less — so the threat seems remote. It can be hard to convince residents that the cherished forest in their backyard may someday threaten their homes and lives.

Second, discussions about regulations to address future wildfire risk can quickly become politicized and controversial. For example, requirements to cut or thin trees and other vegetation can generate considerable opposition from full-time and second-homeowners who want to preserve the greenery and privacy on their property. Some landowners also worry that their property's value will be reduced by the loss of trees or that the costs for compliance will be burdensome. These concerns create fertile ground for the spread of misinformation regarding the true cost of proposed wildfire regulations and erode support for those new regulations. It is important to remind skeptics that wildfire regulations are similar to other hazard-related land use requirements. For example, many communities restrict the size and location of structures in floodplains and strictly limit modifications to the floodplain itself, but the public has generally come to accept such restrictions as reasonable and necessary. Wildfire regulations based on accurate mapping and risk assessment should gain a similar level of credibility and acceptance in communities that adopt them, and this guide can help achieve that goal.

(1) Mathematical modeling of crown forest fire initiation

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WSEAS International Conference on ENGINEERING MECHANICS, STRUCTURES, ENGINEERING GEOLOGY (EMESEG '08), Heraklion, Crete Island, Greece, July 22-24, 2008

Abstract: Under specific conditions, a surface forest fire spreading through the ground cover is converted into a crown fire that moves through crown at a significantly greater rate than the surface fire, and hence is more dangerous ecologically. In this context, a study - mathematical modeling - of the conditions of conversion of a surface forest fire into a crown fire that would make it possible to obtain a detailed picture of the change in the velocity, temperature and component concentration fields with time, and determine the mechanism of energy transfer from the source of the surface forest fire toward the forest canopy, as well as the limiting conditions of ignition of forest fuels in the tree crowns, is of interest. In this paper, the results of a theoretical study of conversion based on a numerical solution of the full system of Reynolds equations for plane surface forest fire source are given. The problem is examined taking into account the effect of the wind. It is assumed that the forest during a forest fire can be modeled as a two-temperature multiphase non-deformable porous reactive medium. A comparison of numerical and experimental results based on the conditions and characteristics of ignition of tree crowns from a surface fire source was conducted.

(2) Conditions for the start and spread of crown fire

C.E. Van Wagner

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Chalk River, Ont., Canada

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VAN WAGNER, C. E. 1977. Conditions for the start and spread of crown fire. Can. J. For. Res. 7: 23-34.

Some theory and observations are presented on the factors governing the start and spread of crown fire in conifer forests. Crown fires are classified in three ways according to the degree of dependence of the crown phase of the fire on the ground surface phase. The crown fuel is pictured as a layer of uniform bulk density and height above ground. Simple criteria are presented for the initiation of crown combustion and for the minimum rates of spread and heat transfer into the crown combustion zone at which the crown fire will spread. The theory is partially supported by some observations in four kinds of conifer forest.

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August 10, 2015

Deschutes County Board of Commissioners
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Subject: Tree Farm 1: 247-14-000242-CU, 247-14-000243-TP
Tree Farm 2: 247-14-000244-CU, 247-14-000245-TP
Tree Farm 3: 247-14-000246-CU, 247-14-000247-TP
Tree Farm 4: 247-14-000248-CU, 247-14-000249-TP
Tree Farm 5: 247-14-000250-CU, 247-14-000251-TP

Dear Commissioners:

We represent The Tree Farm LLC ("Applicant"). Please accept this letter into the record as the Applicant's response to the evidence and argument submitted into the record on July 27, 2015, by Mr. Paul Dewey for Central Oregon Landwatch ("Landwatch") and Mr. Anthony Raguine for the Deschutes County Planning Staff ("Staff Report").

I. RESPONSE TO CENTRAL OREGON LANDWATCH

Introduction. Landwatch's arguments are based on two underlying premises that misinterpret the Deschutes County Code ("DCC") and/or are not supported by evidence in the record.

The first incorrect premise is that the west Bend area where The Tree Farm developments are located is the highest risk area for wildfire. The record does not support this assertion. The Greater Bend Area Community Wildfire Protection Plan Boundary Map¹ shows that The Tree Farm properties, the territory within the City of

¹ This map is in the record, attached as the last page of Exhibit O (the Complete Greater Bend Area Community Wildfire Protection Plan ("CWPP")) to Landwatch's November 19th, 2014, submittal to the

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Bend, and most of the territory surrounding the City of Bend are rated "high" for wildfire risk. "High" is actually the *lowest* risk rating in the Greater Bend vicinity: There are significant areas near the City that are rated "extreme" or "high-density extreme" for wildfire risk. Most of these higher risk areas are actually to the south and the east, not to the west. (Map attached as Exhibit A for the Board's convenience.) The wildfire hazard risk within the City and on most of the surrounding territory is thus the same as or higher than that on The Tree Farm properties.

Landwatch's second incorrect premise is that the applicant must demonstrate that it has eliminated all risk from even the most rare and extreme wildfires. This is not the standard set by the Code.

The Hearings Officer's decision was based upon DCC 18.128.015.A.3, which requires that:

"[t]he site under consideration shall be determined to be suitable for the proposed use based upon the following factors: . . . The natural and physical features of the site, including, but not limited to, general topography, natural hazards and natural resource values." (Emphasis added.)

If a site were deemed "unsuitable" simply because it is subject to wildfire risk, development would be prohibited everywhere in the greater Bend vicinity, as the CWPP map so graphically illustrates. This provision must be construed in its context in the Code.² The County Code allows and contemplates rural development on The Tree Farm properties. By requesting and obtaining an exception to Goals 3 and 4 to

Hearings Officer. The Greater Bend Area CWPP was a collaborative effort by the City of Bend Fire Department, Deschutes County, Deschutes County Rural Fire Protection District No. 2, the U.S. Forest Service ("USFS"), the U.S. Bureau of Land Management, the Oregon Department of Forestry ("ODF"), and Project Wildfire. The CWPP was updated in 2011 and adopted by the City of Bend and Deschutes County. The Plan is one of many throughout the state adopted to address the Oregon Forestland-Urban Interface Fire Protection Act of 1997 and the federal Healthy Forests Restoration Act of 2003. It is thus the most comprehensive and authoritative assessment of wildfire hazard risk in the record.

² See *PGE v. Bureau of Labor and Industries*, 317 Or 606, 610-12, 859 P2d 1143 (1993) ("PGE"), as modified by ORS 174.020; *State v. Gaines*, 346 Or 160, 171-72, 206 P3d 1042 (2009) (in construing a law or regulation, the courts first look to the text, context, and legislative history of the provision). *Lane County v. LCD*, 325 Or 569, 578, 942 P2d 278 (1997) ("We do not look at one subsection of a statute in a vacuum; rather, we construe each part together with the other parts in an attempt to produce a harmonious whole.").

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designate The Tree Farm properties as Rural Residential or Urban Area Reserve in 1988, the County made the policy decision that these are developable lands. Property owners such as the Applicants have relied on these designations to make investments in their property. Landwatch's interpretation that no development can be allowed if any fire risk remains would swallow the rest of the Code by effectively prohibiting all rural development in the Greater Bend area, regardless of zoning. While this appears to be the outcome desired by Landwatch, the Hearings Officer correctly held that such a significant policy change cannot be accomplished through a quasi-judicial interpretation of the Code, but would require a legislative amendment to the text of Titles 18 and 19. TF1, page 37.³

The Urban Area Reserve and rural residential designations were acknowledged to be in compliance with the State Land Use Planning Goals, including Statewide Land Use Planning Goal 7, which provides that "[l]ocal governments shall adopt comprehensive plans . . . to *reduce* risk to people and property from natural hazards." There is no requirement in the Code or the Goal that all risk from natural hazards be eliminated. For example, downtown Portland is built on fill where new construction requires significant seismic protection measures, but these measures do not guaranty 100 percent safety if the City were subjected to a major subduction zone earthquake.

The appropriate construction of the Code is therefore whether the applicant has taken appropriate measures to reduce the identified risk on the particular site. Hearings Officer Green agreed:

"The Hearings Officer agrees [with the Applicant] that in order to find compliance with this conditional use approval criterion I need not find that the wildfire plan eliminates all fire risk for these dwellings. Rather, I must determine whether the wildfire plan, in designation and implementation, will reduce the risk to a sufficient degree that the Tree Farm 1 site and configuration are suitable for the proposed 10-lot cluster/PUD considering the risk of wildfire." TF1, page 37 (emphasis in the original).

³ The Applicant references the Hearings Officer's decisions on the five Tree Farm Applications as TF1, TF2, TF3, TF4, and TF5. Hearings Officer Green's findings on the WPMP are basically the same throughout the five decisions, and so the Applicant cites to TF1 for convenience.

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This is the correct interpretation of the requirements of the Code. Staff concurs with this interpretation. Staff Report, page 7.

The Hearings Officer concluded that a wildfire plan based upon the "nationally recognized, comprehensive, and detailed" Firewise and NFPA standards would comply with the applicable criteria, but she concluded that the Applicant's plan lacked sufficient detail as to implementation and enforcement. She provided detailed guidance as to what a compliant wildfire plan should contain.

The Applicant's revised Wildfire Plan complies with this guidance.⁴ As staff noted in the Staff Report, the Applicant's revised Wildfire and Wildlife Plans provide an "unprecedented level of detail" and impose state-of-the art wildfire protection requirements on the development and long-term maintenance of the Tree Farm developments. Staff Report, page 7. Constructing and operating The Tree Farm developments in compliance with NFPA and Firewise Community standards will significantly lessen the hazards associated with wildfire in this area. The Tree Farm development complies with DCC 18.128.015.

Response to Landwatch's Comments on the Revised Wildfire Plan. Landwatch begins by listing the details that the Hearings Officer concluded a revised plan should address.

Mr. Dewey first states that "[w]hile the Applicant did provide a map and diagram showing some identification of each lot building envelope, it is done at such a small scale that it is not clear whether the specific requirements for setbacks and zones are met."⁵ This information is clearly set forth in the Revised Wildfire Protection and Management Plan ("WPMP") at Exhibit 6. As indicated on the legend on each page of Exhibit 6, the Fire Prevention Zones are shown, and front setbacks of 30 feet, side setbacks of 30 feet, and rear setbacks of 50 feet are shown except where a different setback is specifically noted. Setbacks have thus been established and shown for every single lot. To the extent that Mr. Dewey finds Exhibit 6 difficult to read, we note that staff recommends as a condition of approval that these building envelopes be shown on

⁴ See the Applicant's Appeal Narrative and attachments.

⁵ Mr. Dewey raises the "each lot" argument several times in the Landwatch testimony, apparently for the proposition that the Applicant should be required to submit a separate piece of paper for each lot. This would unnecessarily kill a lot of trees when the information for "each lot" can be shown on a single diagram or set of diagrams—as the Applicant has done.

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the final plats. Staff Report, page 2. The Applicant accepts this suggested condition. The revised WPMP fully complies with the Hearings Officer's direction.

Mr. Dewey's next page or so of comments regarding the application of NFPA 1144, Section 4.2 standards misconstrue those standards when they have to be applied and how the Applicant's WPMP will apply them. As the language of the standards indicates, this assessment is designed to be applied to existing structures to assess fire resistance. In the case of The Tree Farm, the Applicant will be applying the NFPA standards from the ground up. The assessment will therefore be part of the architectural review process by the ARC,⁶ and would be conducted by a qualified expert. Findings from the assessment might alter the submitted plans. This assessment cannot be completed until there is a proposed building project on a finished lot. This will not occur (and cannot lawfully occur) until after the development is approved and the plat is recorded. The revised WPMP, Exhibit 2, provides that the NFPA 1144 4.1, 4.2, and 4.3 standards will be administered by the Homeowners Association ("HOA") Architectural Review Committee ("ARC") as part of the design guidelines at the time of individual home construction and after construction on an ongoing basis to ensure continued compliance.⁷

Mr. Dewey claims that this impermissibly shifts the decision on individual home siting from the Deschutes County Board of Commissioners to the ARC. Mr. Dewey points to no standard or criterion in the County Code that requires the County to make individual home siting decisions on a platted lot. The designated building envelopes will ensure that all structures are sited within the envelope and the ARC will ensure that structures within the envelope will be built and sited in compliance with fire zone requirements and NFPA siting, design, landscaping, and materials standards as part of the approved WPMP. If the ARC fails to comply with the approved WPMP, then the County can pursue a code violation.

The Hearings Officer's decision required the Applicant to develop a meaningful action plan and explanation of how the WPMP will be implemented. The

⁶ See the Applicant's Appeal Narrative, Exhibit 2.

⁷ Mr. Dewey argues in a footnote that by including these requirements in the "Design Guidelines," the Applicant is impermissibly converting standards to guidelines. In a standard planned development, architectural and siting requirements are typically included in a document titled "Design Guidelines." It is clear from a review of the actual draft document (Appendix 4 to the Applicant's Appeal Narrative), as well as the CC&Rs and Bylaws (Appendices 2 and 3) that compliance with the NFPA standards is mandatory. See the discussion in the Applicant's Appeal Narrative, pp. 8-9.

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applicant has done so, in great detail. Nothing about the Hearings Officer's decision or the County Code requires the *County* to implement or manage the WPMP. It is standard operating procedure in planned developments for a homeowner's association to govern the community and implement and enforce the covenants, conditions, and restrictions, including any design requirements and any conditions of land use approval. The Applicant is following this model. We doubt that the County has the capacity or the desire to become the HOA for every rural development in the County.

Mr. Dewey next argues that the Applicant's proposed zone approach does not comply with the Hearings Officer's direction that the Plan identifies the extent and nature of defensible space around each dwelling. WPMP, Exhibit 6 does exactly this. The Applicant stands by Exhibit 6.

Mr. Dewey next complains that some of the zones overlap and some of the lots are so close to the northern and southeastern boundaries that Zone 3 will be compressed in those areas. The Applicant's zonal approach is consistent with NFPA and Firewise Standards and defines homeowners' landscape design areas to slow the intensity or stop an approaching wildland fire which will reduce fire risk to structures and firefighters. The NFPA does not require Zone 3 to extend to the boundary of a property.⁸ So the Tree Farm is actually going well beyond the NFPA recommendations over most of the property.⁹ In addition, when clustering homes it is very common for neighboring residents to collaborate to treat and maintain combustible vegetation to a safer standard. The property to the southeast, also owned by the Miller family, has been and will continue to be managed to Zone 3 standards. The property to the northeast, owned by Rio Lobo LLC, has been effectively managed to a Zone 1 standard: Rio Lobo has removed all trees and understory vegetation on its property in the area north of the boundary with the Tree Farm covering a territory well beyond any Zone 3 boundary. In addition, both of these adjacent properties are zoned UAR-10, and so are designated for development and eventual urbanization, so the long-term management of these properties will be for development.

⁸ See Exhibit B, a copy of pages 21 and 22 from the NFPA Publication "Community Wildfire Safety Through Regulation, A Best Practices Guide for Planners and Regulators" which explains the zone system.

⁹ For example, all of the open space area will managed to Zone 3 standards, even those areas well beyond 200 feet from the dwellings. This is primarily to be consistent and compatible with the management of Shevlin Park and the USFS land to the South, which are also managed in manner similar to the Zone 3 model.

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The siting of the Tree Farm cluster development balanced a number of factors, the most important being to keep the building envelopes off the slopes, which more hazardous for wildfire, and to shift as much of the development as possible out of the WA Combining zone to reduce the impact on wildlife habitat. For all of these reasons, the Applicant believes it has clustered its development on the most suitable sites on the properties within the meaning of DCC 18.128.015.A.3.

Mr. Dewey's next few paragraphs jumble together a couple of arguments about the special slope setbacks established in the WPMP. Mr. Dewey first argues that the Applicant's maps do not show or define the "upper edge of the slope." The maps attached as WPMP, Exhibit 3 do in fact show these slope profiles and establish "the upper edge of the slope" as the edge of slopes that are greater than 20 percent.

Mr. Dewey takes issue with this 20 percent determination. This slope profile was selected on the advice of Gary Marshall, the Applicant's wildfire expert, who was relying on the Firewise Community standard as the point at which slope influence on wildfires starts requiring additional setbacks.¹⁰ Mr. Dewey is correct that the NFPA standards do not define the degree of "slope" that constitutes a "sloped lot" for the purposes of applying the NFPA 1144 5.1.3.2 requirements. We have attached as Exhibit B, a copy of pages 21 and 22 from the NFPA Publication "Community Wildfire Safety Through Regulation, A Best Practices Guide for Planners and Regulators." This diagram illustrates the Zone Approach, and states that "some communities increase the size of the above defensible space zones when steep slopes (greater than 20% to 30%) are present."¹¹ The Applicant submits that this evidence from its experts and recognized authorities supports that 20 percent is a reasonable slope break at which to establish the special buffers.

Mr. Dewey claims that the WPMP conflicts with NFPA 1144 5.1.3.3 because it allows dwellings to be built within 30 feet of a 20 percent slope if mitigation measures are used, but the NFPA only allows such measures if there is not sufficient room for a setback. Mr. Dewey misreads the WPMP. The WPMP expressly states that

¹⁰ See Applicant's December 11, 2014, testimony to Karen Green, p. 4, and letter from Gary Marshall, attached as Exhibit B to that testimony, pp. 2 and 16-18.

¹¹ We note that Landwatch's expert, Mr. Addison Johnson, cites to this publication with approval on page 3 of his June 27, 2015, memorandum.

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structures have to be at least 30 feet from a slope, and that any variance has to comply with NFPA standards.¹² WPMP, page 6.

Mr. Dewey next calls into question the adequacy of the 30-foot setback, based upon the testimony of his expert, Addison Johnson. Thirty feet is the NFPA standard. Mr. Marshall has testified that this setback is sufficient for the Zone 1 area.¹³ The Applicant relies on its expert and the NFPA standards.

Mr. Dewey next argues that the revised WPMP fails to show the fuel treatment on slopes for each dwelling. WPMP, Exhibit 6 does, in fact, show this. It shows the zones surrounding each lot and dwelling and describes the fuels treatments for each zone in the legend. Mr. Dewey questions the science behind the zones. The zone model was utilized by Mr. Marshall based upon research by Jack Cohen, a USFS scientist, and based upon NFPA standards.¹⁴ It is documented and supported in both NFPA 1144 and the Firewise Communities/USA literature. We submit that this is expertise upon which a reasonable person would rely.

Mr. Dewey next argues that Applicant failed to explain what impact fuel treatments on slopes will have on open space or surface water drainage. WPMP, Section IV.D and .E (page 7) directly address these issues.

Mr. Dewey next argues that the Applicant failed to address the Hearings Officer's expressed concerns about Tree Farm 5. The quoted sections of the Hearings Officer's Decision were based upon her findings that the prior WPMP was insufficiently detailed and failed to interrelate with the Wildlife Management Plan ("WMP"). We directly addressed these issues in the revised WMP as explained on pages 9 to 13 of the Applicant's Appeal Narrative.¹⁵

Mr. Dewey next argues that the Applicant has failed to show whether and where decks and outbuildings would be permitted on each lot. As the Applicant's Appeal Narrative states on page 6, decks and outbuildings (and all combustible

¹² Staff has suggested a condition of approval to clarify where these exceptions exist.

¹³ See Applicant's December 11, 2014, testimony, Exhibit B.

¹⁴ See Applicant's December 11, 2014, testimony to Karen Green, p. 4, and letter from Gary Marshall, attached as Ex. B to that testimony, pp. 7-8. Mr. Marshall's extensive credentials are set forth in the record, attached as Exhibit 1 to the Applicant's December 30, 2014, testimony to the Hearings Officer.

¹⁵ The WMP is incorporated into the WPMP as Exhibit 5. WPMP, p. 7.

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construction) are subject to the same setbacks as the dwelling. Those setbacks are shown on WPMP, Exhibit 6. Staff has suggested a condition of approval to further clarify this.¹⁶

Mr. Dewey next argues that the Applicant fails to adequately comply with the Hearings Officer's requirement for a detailed description of how and by whom the WPMP will be implemented, monitored, and enforced. We disagree with this argument. Sections V, VII, and VIII of the WPMP respond to this issue in detail, and pages 7 and 8 of the Applicant's Appeal Narrative cite to the sections of the Plan and the governing documents that explicitly set forth these responsibilities and authorities. The transition from the Developer to the HOA is governed by Sections 1.6, 1.19, 3.2, and 13 of the HOA Bylaws, and in Sections 1.10, 2.4, 2.6, and 4.1 of the CC&Rs.¹⁷

Mr. Dewey next argues that there is no clear analysis of the consistency between the CC&Rs, Bylaws, and Design Guidelines. Mr. Dewey does not explain how these documents are *inconsistent*.¹⁸ These documents are attached to the Applicant's Appeal Narrative and speak for themselves.

Mr. Dewey next notes that the WPMP states that The Tree Farm will follow the most restrictive standards or codes between the NFPA standards and the Oregon Fire and Building Codes, and argues that the Applicant should be required to catalog and identify which standards are more restrictive. This is both unnecessary and would serve no useful purpose. It is unnecessary because The Tree Farm is required to comply with NFPA Standards pursuant to its CC&RS, Bylaws, Design Guidelines, and the land use decision¹⁹, and is also required by law to comply with Building and Fire Codes. Where these are not in conflict, both standards will apply; where the NFPA standards do not comply with the Building or Fire Codes, the latter will control. Because the Building and Fire Codes will be amended over time, it does not make any sense to catalog them at this time.

¹⁶ As noted below, the Applicant accepts all of the Staff's proposed additional conditions of approval.

¹⁷ Attached as Appendix 2 and Appendix 3 to the Applicant's Appeal Narrative.

¹⁸ Mr. Dewey also complains that the "Rules and Regulations" referenced in the WPMP are not attached to the Applicant's materials. The Rules and Regulations do not exist yet; they are not created until the HOA is formed and the CC&Rs and Bylaws are recorded. See Appendix 3 (Bylaws), Section 14.

¹⁹ These are "deed restrictions" referred to on page 6 of the WPMP. They were recorded at the time of the final plat and became deeds restrictions that run with the land.

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Mr. Dewey next argues that the Plan fails to call out who is responsible to enforce the Plan. This is not true. Sections VII and VIII of the WPMP, Exhibit 2 to the WPMP, and the CC&Rs, Bylaws, and Design Guidelines cited above in the Applicant's Appeal Narrative (pp. 7-9) explicitly describe the parties responsible for enforcing the Plan and how that authority and responsibility is handed off over time.

Mr. Dewey argues that the County's complaint-based enforcement system is inadequate and the HOA could become dysfunctional and fall apart. Taking this argument to its logical conclusion, the County shouldn't approve any land use applications because this worst-case scenario could occur with any approval. The Tree Farm will be a signature development and the homeowners will have a vested interest in having a strong HOA that will enforce the Plan. In addition, The Tree Farm's developers have a decades-long track record of success at creating planned developments that continue to function as vibrant communities well after they are out of the picture.²⁰ The model proposed by the Applicant can work and does work.

Mr. Dewey next states that the standards being approved are not enforceable because they are easily amended by the HOA. In point of fact, Draft Condition of Approval No. 1 to each of The Tree Farm Decisions requires that any substantial change to the approved development will require new land use applications and approvals. Consistent with this requirement, Article 15.6 of the CC&Rs prohibits any amendment to the WPMP and WMP that would lessen their requirements without land use approval from Deschutes County. Any amendment to the Plans will therefore require a new land use application and opportunity for citizen comment and appeal.

Mr. Dewey next argues that the evacuation plans do not comply with the Hearings Officer's requirements. We disagree with this argument. Section VI of the WPMP contains the specific Evacuation Plan information required by the Hearings Officer, including plans for communicating the evacuation plan to owners and guests via annual meetings, the project website, and directional signage on site. Exhibit 7 and Exhibit 8 of the WPMP show the designated evacuation routes and the Emergency Evacuation Information Form and Instructions that will be provided to and required

²⁰ Examples include Black Butte Ranch, Awbrey Butte, and Awbrey Glenn. The latter has become a recognized Firewise Community by action of its HOA.

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from every homeowner. The evacuation plans and routes are the same for all five Tree Farm developments.²¹

Mr. Dewey concludes his testimony with regard to the Wildfire Plan by raising twelve additional "problems" with the Plan. We respond as follows:

1. Mr. Dewey argues that the Applicant has failed to identify the fuel break mentioned on Page 4 of the WPMP. Mr. Dewey misreads the Plan. By employing the NFPA standards with regard to fire resistant building materials and landscape treatments, the development itself will create a fuel break that will slow or stop approaching wildfires from adjacent properties. This will reduce the fire hazard in the area overall.

2. Mr. Dewey argues that Exhibit 3 does not clearly show the specific setback requirements and shows setbacks extending beyond property boundaries. We disagree. The Exhibit 3 legend clearly states the setbacks that are generally applicable to all of the lots, "except where noted." Any special setbacks due to steep slopes such as those on lots 1, 2, 3, 5, and 6 are shown on the lots. Setbacks are thus established for "each lot," as requested by the Hearings Officer. None of the setbacks extend beyond the property boundaries.

3. Mr. Dewey argues that the WPMP, page 6 allows a "variance" to the 30-foot setback per the NFPA standards, but doesn't explain what the variance can be. We responded to this argument above. Structures are required to be set back at least 30 feet from a vegetated slope of more than 20 percent, except as otherwise allowed under the applicable NFPA standards. These types of mitigation measures (such as rock walls) are described in the WPMP and NFPA 1144.

4. Mr. Dewey argues that the WPMP, Page 7 conclusion that the proposed Tree Farm Management Plan is compatible with the Shevlin Park and USFS plans is not "adequately explained." The Shevlin Park Master Plan and USFS Plans are in the record, as is testimony from the Park District supporting The Tree Farm development and concluding that it will be compatible with Shevlin Park. This constitutes substantial evidence in the record that supports the statement on page 7 of the WPMP.

²¹ Staff has proposed an additional condition requiring the HOA to provide each owner with written instructions on how to operate the emergency gate within days of property acquisition by a new owner. The Applicant agrees with this condition.

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5. Mr. Dewey argues that the conclusion in the Plan is consistent and compatible with the Plans is not sufficient. Mr. Dewey does not explain which criterion is violated by the statement. The Hearings Officer rejected Landwatch's argument that The Tree Farm development would force a significant change to farm and forest practices on adjacent property in forest use.²² The Applicant relies on the Hearings Officer's findings and analysis. This argument is also beyond the scope of this appeal. If Landwatch wanted to challenge this decision of the Hearings Officer on this finding, it should have filed its own appeal.

6. Mr. Dewey claims that the requirement for ongoing fuel reduction is not adequately explained. As noted above, the fuel reduction standards and requirements are clearly set forth in the WPMP and will continue to be applicable to the development in perpetuity. Ongoing enforcement and management is provided for in the CC&Rs and Bylaws.

7. Mr. Dewey argues that the zones impermissibly extend off the property. We addressed this argument above with regard to the zones.

8. Mr. Dewey argues that the Zone Model on pages 8 to 9 of the WPMP is not specific enough. We addressed this argument above. The zones and the required fuel treatments are specifically identified and described on WPMP, Exhibit 6, in relation to each lot. Mr. Dewey fails to read pages 8 and 9 in context.

9. Mr. Dewey argues that the compliance audit is not enforceable or funded. This audit is provided in Article 4.4 of the CC&Rs and is expressly funded as a common expense allocated amount by the homeowners.

10. Mr. Dewey argues that Applicant has failed to address firefighting services are available to cover a wildfire. The record contains a "will serve" letter from the City of Bend Fire Department.

11. Mr. Dewey argues that water pressure availability has not been adequately addressed. The issue of the adequacy of the Applicant's water system to serve the development is outside of the scope of this appeal. Mr. Marshall extensively addressed Mr. Johnson's same arguments before the Hearings Officer.²³ The Hearings

²² TF1, pp. 18-22.

²³ See Applicant's December 11, 2014, testimony to Karen Green, letter from Gary Marshall, attached as Exhibit B to that testimony, pp. 3-4, 11.

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Officer concluded, based on the testimony and on Exhibits E (Water System Analysis) and G (City of Bend "will serve" letter), that the Applicant's proposed water system "will provide adequate pressure and fire flows at each lot." TF1, pp. 68, 78, and 84. The applicant stands by these determinations based upon the evidence cited. If Landwatch wanted to challenge the Hearings Officer's findings on these criteria, it should have filed its own appeal.

12. Mr. Dewey states the Applicant has failed to address vegetative management or emergency access on the lands to the southeast. Mr. Dewey fails to point to a criterion that would require the Applicant to manage vegetation or address vegetation on the adjacent property. None exists. The record indicates that owners of this property (the Miller Family) manage the property to Zone 3 standards. Contrary to Mr. Dewey's assertion, there is an evacuation route to the South, to Crosby Drive. The Hearings Officer rejected Landwatch's arguments that the evacuation routes and locations are inadequate. TF1, pp. 33-34. She also concluded that the steep terrain would make an emergency access to the north unfeasible. TF1, p. 34.

Response to Landwatch's Comments on the Revised Wildlife Plan. Mr. Dewey first argues that the WMP does not respond to the Hearing Officer's request for an action plan for compliance addressing each lot in the WA zone, as well as roles and responsibilities to implement the Plan.

The Wildlife Plan does address how vegetation will be treated in and around each of the lots by describing the Zone-based vegetation treatments (starting on page 9), and by referencing Exhibit 6 of the WPMP (The Tree Farm Fire Prevention Zones Exhibit). This exhibit demonstrates spatially where each zone will be implemented within the development.

Mr. Dewey argues that the zone method is not meaningful and that the Hearings Officer rejected it. The Hearings Officer did not reject the zone approach. In point of fact, she found the WPMP would be compliant as long as the deficiencies she noted were corrected (none of which included the zone approach). WPMP, Exhibit 6 describes exactly the measures that will be employed and where they will be employed. The WMP explains how these activities impact wildlife and describes exactly what modifications will be made to those activities in order to mitigate the impacts on wildlife. WMP, pp. 9-18.

Mr. Dewey complains that there is no explanation of how the zone system affects wildlife habitat or how the wildlife habitat will be different than it would have

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been under the prior WMP. That is simply not the case.²⁴ See WMP, Sections 9 to 16. We note that the Hearings Officer did not take issue with the substantive analyses or the recommended wildlife habitat mitigations measures in the prior Plan; rather she found that the prior WMP suffered from the same lack of clarity and detail in the WPMP as to how and by whom the WMP would be implemented, how success will be measured, and by whom the WMP would be enforced. The revised WMP addresses these identified deficiencies.²⁵

Mr. Dewey next argues the WMP does not describe or take into account the cumulative impacts of the proposed development. We refer him to WMP, pages 17 and 18, which discuss exactly this.

Mr. Dewey argues that the 14-foot tree spacing is not sufficient based upon Mr. Johnson's comments. The WMP reference to 14-foot spacing only applies to the Zone 3 management. The NFPA does not require specific spacing requirements in this zone. The Applicant relies on the NFPA standard.

Mr. Dewey finally argues that the WMP contains no action plan or describe responsibilities and timing of implementation or provide for the enforcement of funding of the Plan. In point of fact, the Wildlife Plan contains an action plan that clearly lists the wildlife habitat conservation measures associated with this project (p. 15), identifies responsible parties, and describes how and when these measures will be implemented (p. 16). There is a component of adaptive management purposefully built into this Plan that is meant to give it flexibility and longevity. The CC&Rs include a mandatory provision for regular audits by a biologist to determine compliance by the development with the Wildlife Plan and provide an opportunity for changes to conservation measures if measures are failing or if the current science indicates a more effective action for maintaining or enhancing wildlife habitat.²⁶ The same flexibility is maintained by this Plan's tie to the most current noxious weed control measures (per recommendation of the Board of the Deschutes County Weed Control District) or the requirement to reassess any proposed vegetation treatments that would be more aggressive than those proposed in the Plan. Finally, the CC&Rs require compliance with

²⁴ Mr. Dewey raises two issues with regard to expansion of Zone 2 on slopes and the method for hand-pruning in these areas, but he does not explain how these alleged issues impact wildlife management under the Plan or explain how these alleged deficiencies affect any applicable criterion.

²⁵ See the Applicant's Appeal Narrative, pp. 9-16 for a more detailed explanation of how the revised WMP corrects these deficiencies.

²⁶ See draft CC&Rs, Appendix 2 to the Applicant's Appeal Narrative, Article 4.5

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WMP (and the WPMP) and provide for funding of maintenance and compliance with the Plans through assessment of the homeowners.²⁷

Response to Landwatch's Additional Comments. Our introduction and specific responses above address most of Mr. Dewey's final comments.

He quotes new comprehensive Plan provisions and argues that the County should apply them. His quote conveniently omits a very important part of this provision:

"Policy 3.5.11 Review and revise County Code as needed to:

a. Ensure that land use activities do not aggravate, accelerate or increase the level of risk from natural hazards.

b. Address wildfire concerns to and from development, through consideration of site location, building construction and design, landscaping, defensible space, fuel management, access and water availability.

c. Require development proposals to include an impact evaluation that reviews the ability of the affected fire agency to maintain an appropriate level of service to existing development and the proposed development.

...

g. Require new subdivisions and destination resorts to achieve Firewise Standards from the beginning of the projects and maintain those standards in perpetuity." (Emphasis added.)

As the underscored language indicates, this policy does not apply to individual applications but is instead direction to the County for future amendments to the Code.

²⁷ See draft CC&Rs, Appendix 2 to the Applicant's Appeal Narrative, Articles 1.29, 1.30, 4.2.J, 4.5, 5.5, 10.16. We note that if an individual homeowner violates the requirements of the WMP (or WPMP), the HOA has the authority to enter onto the homeowner's property, correct the deficiency, and assess the cost to the homeowner as a lien on the property. See Article XII.

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Even though this policy doesn't apply, however, we believe The Tree Farm is fully compliant.

- The Applicant has adopted the most detailed and rigorous WPMP in Deschutes County history based upon the state-of-the-art fire protection standards in order to reduce the level of risk from wildfire consistent with subsection a.
- The Applicant's WPMP addresses and adopts each and every one of the methods to reduce wildfire risk described in subsection b.
- The Applicant has obtained the necessary "will serve" letter from the City of Bend Fire Department per subsection c.
- The Tree Farm is required to comply with Firewise standards in the development of the projects and maintain that status in perpetuity.

Instead of supporting Landwatch's argument that no development should be allowed in wildfire risk areas, this policy indicates that development in these areas can occur as long as the risk is mitigated through appropriate development requirements.

II. RESPONSE TO THE STAFF REPORT

The Applicant concurs with the Staff Report and agrees with the additional suggested conditions of approval, with one clarification. Under Section 3 (pages 2-3 of the Staff Report), staff states:

"Staff believes it would be appropriate for these pockets of understory habitat to be identified initially prior to final plat, and then monitored and adjusted during the periodic wildlife audits required under Section 4.5 of the proposed Covenants, Conditions & Restrictions (CCR's)."

We note that these pockets of understory habitat have already been identified on Figure 3, page 13 of the WMP. These are the areas that will be maintained pursuant to the WMP and monitored and used as the baseline during future periodic audits.

The Applicant would like to underscore Staff's final comment:

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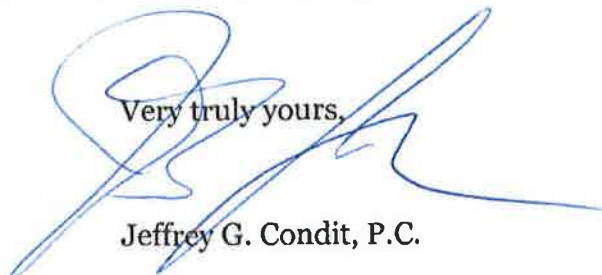
Because of the unprecedented level of detail required by the Hearings Officer in both the WPMP and WMP, staff believes the Board's decision on The Tree Farm may become a model for future projects near forested areas and within WA-zoned lands. In a sense, the Board's decision here can be viewed as a policy decision regarding development in high wildfire risk areas.

The Tree Farm Development does not repeat past errors; it points the way to the future.

III. CONCLUSION

With the additional submittals and findings included with this appeal, the Applicant has satisfied all applicable approval criteria as identified and applied by Hearings Officer Green. The Applicant therefore respectfully requests that the Deschutes County Board of Commissioners approve the five Tree Farm applications, subject to the conditions of approval recommended by Hearings Officer Green and staff.

Very truly yours,



Jeffrey G. Condit, P.C.

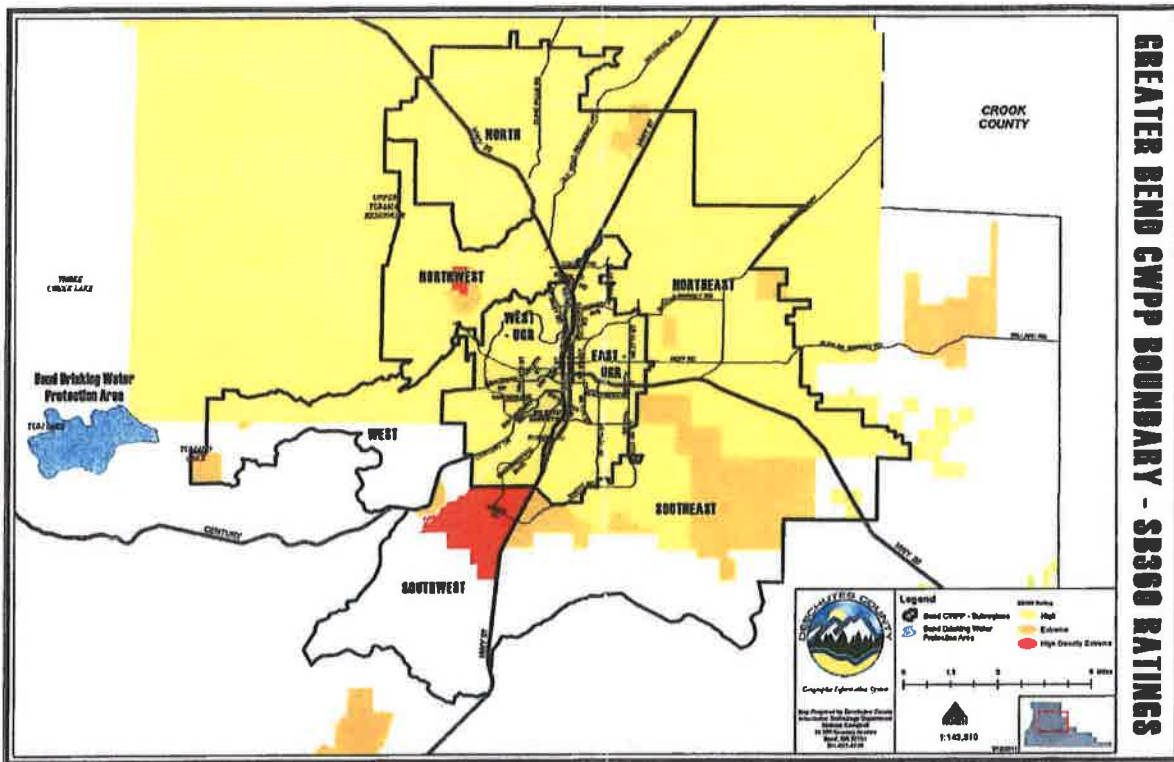


Exhibit A

Exhibit B

Defensible Space

Defensible space is perhaps the most basic and popular WUI tool. The basics of defensible space were introduced above but this section provides more detail. The concept is simple and intuitive: reduce the flammable vegetation that fuels wildfires and you directly reduce the risk of wildfire. Studies show that keeping wildfire 100 - 200 feet away from structures should protect them from ignition in most cases. Defensible space is intended to create this low-fuel buffer and is often divided into the following three zones:

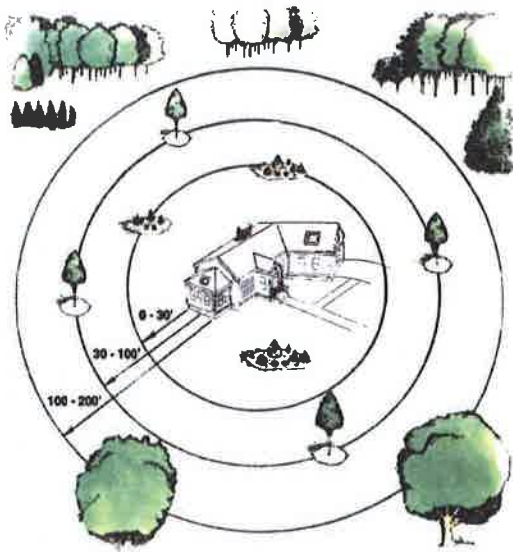


FIGURE 10.10 DEFENSIBLE SPACE ZONES

Zone 1

Generally extends 15 or 30 feet from the primary structure, but that distance can be extended if the hazard level is particularly high and/or on the downward side of steep slopes. Common requirements include:

Establishment of a fuel-free zone within 3 - 5 feet of all structures;

Removal of all dead materials and dry grasses;

Thinning of trees (crown separation of at least 10-18 feet);

Prune lower tree branches to a height of 6 to 15, depending on tree's height and crown size;

Removal of most shrubs, with clumps allowed if separated by at least twice the shrub height;

Cutting grasses to 3 or 4 inches maximum height, but sometimes allowing taller vegetation on steeper slopes to retain soil;

Keeping trees 10 to 15 feet from the roof or chimney, and

Maintaining vegetation further than 10 feet from combustible fences and from utility lines (with distance depending on voltage).

Zone 2

Generally extends 30 to 100 feet from the primary structure (or 50m from the outer edge of Zone 1). Typical requirements include removal of most dead material, tree crown separation of 5-10 feet, limited grass heights, pruning of shrubs, and removing tree limbs. Many of the standards parallel those for Zone 1, but with more lenient requirements.

Zone 3

Extends from the end of Zone 2 to property line and generally only requires minimal vegetation management.

Slope

Slope is a critical element in assessing wildfire risk. The greater the slope the greater the fire risk in most cases. Thus, some communities increase the size of the above defensible space zones when steep slopes (greater than 20% to 30%) are present.

FIGURE 10.11 DEFENSIBLE SPACE ZONES