Subject : Asbestos Hazard Comments on Region 5 North Zone Post-Disturbance Hazardous Tree Management - Draft Environmental Assessment And Finding of No Significant Impact

The proposed action includes ground disturbance in geologic areas with ultramafic rocks which contain naturally occurring asbestos. The proposed ground disturbance may release asbestos to airborne and waterborne pathways and result in potential risks to public health and safety.

Ultramafic geologic areas are widespread across the North Zone and are found on every National Forest in the North Zone (Klamath National Forest, Six Rivers National Forest, Mendocino National Forest, Shasta Trinity National Forest). Yet the draft EA does not assess the proposed action's potential to release naturally occurring asbestos and the risks to public health and safety.

The only mention of the geologic hazard of naturally occurring asbestos is in Appendix B which includes Design Features under Geology (pages 75-76). However the body of the draft EA does not contain a single word about asbestos, let alone the comprehensive environmental analysis warranted to assess the asbestos hazard and potential risks to public health and safety.

This major deficiency in the draft EA needs to be remedied. The following recommendations are identified by draft EA sections that need updated analysis and revision.

Recommendation 1 - Issues

Add this issue to the list of "Issues Analyzed in Detail" (p 25):

> Naturally Occurring Asbestos Hazard - Logging, skidding, yarding, log landing construction, skid trail/skid road construction, log truck hauling, road use, trail use, and road maintenance in ultramafic geologic areas may release asbestos to airborne and waterborne pathways and result in potential risks to public health and safety.

Recommendation 2a - Potentially Affected Environment

Based on the Naturally Occurring Asbestos Hazard issue, add a Geology section to the Potentially Affected Environment. The Soils section has a brief mention of "ultramafic soils" in regard to low fertility of such soils, but no mention of the geologic hazard of naturally occurring asbestos. The Potentially Affected Environment needs a Geology section prepared by a geologist to describe the geographic distribution of ultramafic geologic areas, to describe the site geology where proposed actions overlap ultramafic terrane, and to describe the naturally occurring asbestos hazards and risks.

Forest Service policy (Forest Service Manual 2885.03) is:

> Reports on geologic studies or investigations, and transmittal of geologic data must be prepared and reviewed by a geologist with qualifications in the subject area (FSM 2885.3).

Recommendation 2b - Potentially Affected Environment

Include in the Geology section of the Potentially Affected Environment maps or links to maps showing geologic map units more likely to contain naturally occurring asbestos. Such maps for National Forests in California are already available at this Forest Service website. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=STELPRDB5363833

Discuss the map scale and limitations on use of these maps for site specific geology. Identify if more detailed geologic maps are available, especially since more detailed mapping may identify ultramafic areas not shown on regional scale maps.

Recommendation 2c - Potentially Affected Environment

Use the best available geologic maps to generate ultramafic map units to overlay on areas selected for hazardous tree management (roads, trails, campgrounds, trailheads). The Geology Affected Environment section should describe the ground disturbance from past and present management activities (roads, trails, timber harvest, log landings, mining, etc.) in the potentially affected ultramafic environment.

Identify potentially affected stream drainages in or downstream from the ultramafic areas as well as potentially affected municipal watersheds and/or watersheds that are sources of domestic drinking water.

Describe the proximity of ultramafic areas to private lands and residences or communities.

Recommendation 2d - Potentially Affected Environment

Since the proposed action is prompted by hazardous trees resulting from the recent fires, it is especially relevant to identify any hazardous asbestos conditions created by ground disturbance to fight the recent fires. If dozer lines and hand lines were constructed in ultramafic areas, then the resulting ground disturbance may have created hazardous asbestos conditions. Any such firefighting-related asbestos hazards can be considered for abatement, but in any case, needs to be identified as part of the Geology existing condition and in cumulative effects.

The draft EA's Geology existing condition needs to recognize that the recent fires resulted not only in hazardous trees, but also in increases in hazardous asbestos conditions due to natural causes (fire, loss of ground cover) and to any fire-fighting ground disturbance in ultramafic areas. In other words, the Forest Service ought to consider not only the "Post-Disturbance Hazardous Tree Management" but also the "Post-Disturbance Hazardous Asbestos Management".

Recommendation 3 - Environmental Impacts related to Asbestos Issue

Assess the environmental impacts of the Proposed Action and No Action related to the asbestos issue:

> Naturally Occurring Asbestos Hazard - Logging, skidding, yarding, log landing construction, skid trail/skid road construction, log truck hauling, road use, trail use, and road maintenance in ultramafic geologic areas may release asbestos to airborne and waterborne pathways and result in potential risks to public health and safety.

The Forest Service website on Naturally Occurring Asbestos states the cause-and-effect relationship between asbestos released by natural processes or human activities and the resulting potential risks to public health and safety.

"Naturally occurring asbestos may be a health risk if disturbed and asbestos fibers are released into the air. When asbestos-containing rocks are crushed or broken through natural weathering processes or through human activities, asbestos-containing dust can be generated. Once asbestos fibers are released into the air, they may remain airborne or in the soil for a long time. Airborne asbestos fibers may pose a health hazard because of the potential risks associated with inhalation of the fibers."
https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5363851

Assess the potential for the proposed action to release asbestos to airborne and waterborne pathways and the resulting potential risks to public health and safety.

Assess the potential for the proposed action to cause asbestos releases (such as asbestos-containing dust) during project implementation (log landing construction, construction of skid trails or skid roads, log skidding, yarding, timber felling/bucking/delimbing, piling and burning timber slash, chipping operations, road maintenance, road grading, road ditch and culvert cleaning, etc.). Assess asbestos release and transmission in airborne and waterborne pathways.

Assess the asbestos hazards related to dragging, winching, or yarding logs or trees across road cut slopes and fill slopes or along roads.

Assess the potential for the proposed logging operations to contaminate the logs, limbs, branches, and slash with asbestos. The forest fires reduced the vegetation and ground cover on steep slopes. As a result, it is easier for logs and slash/woody material that are moved around or across slopes to pick up asbestos particles and fibers from the disturbed ground. Assess the potential for asbestos contaminated slash that is piled and burned to release asbestos in the smoke and embers. Assess the potential for asbestos contaminated logs to release asbestos during mill processing of the logs.

Assess the potential for natural processes to cause asbestos releases during project implementation (normal winds, occasional windstorms, erosion on natural slopes and in natural drainages, windthrow, etc.)

Identify the populations that would be at increased risks of health effects due to exposure to asbestos during project implementation (such as timber fallers, sawyers, logging equipment operators, log truck drivers, operators of road grader and other road maintenance equipment, road aggregate delivery and placement personnel, Forest Service personnel, recreationists downwind of operations, and residents if private land is nearby operations).

Assess the potential for the ground disturbance resulting from the completed project to cause asbestos releases in the years after project implementation. Assess asbestos release and transmission in airborne and waterborne pathways. Assess potential impacts on municipal watersheds and/or watersheds that are sources of domestic drinking water.

Identify the populations that would be at increased risks of health effects due to project-related asbestos releases in the years after project implementation (such as visitors using affected roads and trails, road maintenance crews, Forest Service personnel, tree planting crews, and residents if private land is nearby operations).

Assess the No Action effects on asbestos hazards and risks to public health and safety.

Assess the cumulative effects of the Proposed Action and No Action on asbestos hazards and risks to public health and safety.

Recommendation 4a - Proposed Action Description

Most of the draft EA description of the proposed action (page 7- 9) deals with the treatment of hazardous trees. But the logging operations that would require construction and/or other ground

disturbance have brief, general descriptions (2nd and 3rd last paragraph page 9). In order to assess the nature and extent of ground disturbance, provide a better description of the proposed action within the 300 feet of road centerline in steep areas.

The project description states that "Skyline, helicopter, and cable-yarding methods would not be used". Given that restriction, assess whether ground-based logging operations are even feasible along roads in some steep areas without causing substantial ground disturbance to the road prism and adjacent slopes above and below the road.

The description of the proposed action (page 7- 9) may be adequate for flat or gentle slopes with little or no road cut or fill slopes such as shown in the cover photo for this draft EA. However the description of the proposed action (page 7- 9) is inadequate for steep slopes with substantial road cut or fill slopes which are common in the North Zone National Forests.

Will felled trees or bucked logs be dragged or winched down across road cut slopes? The project description seems to suggest that possibility: "Skidding distances would be limited to the minimum length necessary to safely reach the road, landing, or access point to load onto trucks". Revise the project description to clearly state whether the project includes dragging or winching logs or trees down across road cut slopes. If such yarding disturbance of road cut slopes is part of the project, then revise the project description to take a "hard look" at the likely extent of road cut slope disturbance.

These revisions in project description are needed to assess the proposed action's potential to result in asbestos hazards. In the short term, asbestos-containing dust from dragging or winching logs or trees down across road cut slopes would create risks to the health and safety of logging crews and Forest Service timber sale administrators. The disturbance of the road cut slopes and the resulting erosion and slope instability also would have long term effects as sources for asbestos releases into airborne or waterborne pathways.

Recommendation 4b - Proposed Action Description: "Skid Trails"

For the part of the proposed action where logs or trees would not be dragged down across road cut slopes, the project description needs to be revised to take a "hard look" at how logging operations would be conducted on, and confined to, the steep ground above the road cut slopes. The project description states that "Skyline, helicopter, and cable-yarding methods would not be used". As a result, ground-based systems such as skid trails would be used.

The project description refers to "skid trails". However a "skid trail" may be bladed or unbladed depending on slope gradient. A bladed skid trail is excavated into the ground resulting in a

cut-and-fill slope that is a skid road. This distinction is important to recognize because of the greater environmental impact of a skid road (bladed) vs a skid trail (unbladed). Similarly the draft EA refers repeatedly to "skid trails" without making the distinction that some "skid trails" are "skid roads".

Revise the project description to make the distinction between "skid trails" and "skid roads". Provide a map of locations where skid roads would be constructed. Provide an estimate of the miles of skid road construction and categorized by % slope class.

Recommendation 4c - Proposed Action Description: Log Landings

The project description (p,9) states:

> Removing trees may require skidding logs or trees to landing areas for processing and loading on trucks. Landings would be selected from existing impacted areas or constructed as needed within 300 feet of roads, trails, and facilities.

For any given slope gradient, a log landing typically has a wider and deeper cross-section (prism) than a road cross-section (prism). Compared to roads, log landings typically require deeper excavation into the mountainside and result in higher cut slopes and larger fills.

Log landings on steep slopes or along roads are substantial construction that may create slope stability hazards as well as asbestos hazards in ultramafic geologic areas. Revise the project description to disclose the number and locations of log landings needed to accomplish the proposed action. Provide a map location of where log landings would be constructed. Provide a table showing the number of proposed log landings categorized by % slope class.

These revisions in project description are needed to assess the proposed action's potential to result in asbestos hazards. Constructing cut and fill slopes for a log landing in an ultramafic area would create risks to the health and safety of construction crews and Forest Service timber sale administrators. Then, after construction, the log landing operations that may last for weeks or months would create risks to the health and safety of log landing crews, log truck drivers, log equipment service providers, and Forest Service timber sale administrators. The excavation of log landing cut slopes and the resulting erosion and slope instability would have long term effects as sources for asbestos releases into airborne or waterborne pathways.

Recommendation 5 - Consistency

Evaluate whether the effects of the proposed action on asbestos hazards and risks to public health and safety is consistent with the National Forest Management Act (NFMA) – Land Management

Plan Consistency and with Other Law, Regulation, and Policy Consistency such as E.O. 12898, Environmental Justice.

Recommendation 6 - FONSI or EIS

Evaluate whether the proposed action's asbestos hazards and risks to public health and safety would have a significant effect on the human environment, and thus, an environmental impact statement would be prepared.

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