Proposed Forest Health Code Amendments and Language: Ground-based Mechanical Equipment on Slopes 30% to 50%

Advisory Planning Commission February 2022

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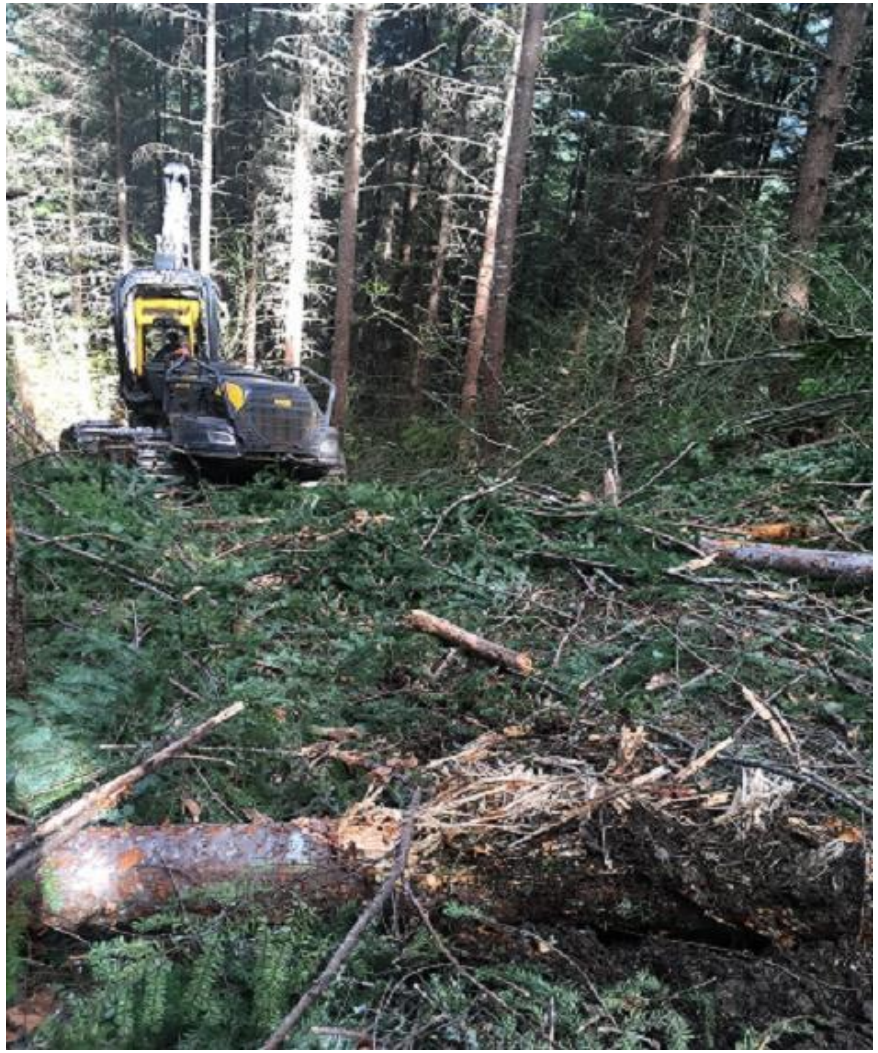
Agenda

- Background, History, and Need
- Code Amendments
- Discussion and Questions
- Motion for Recommendation



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Background

- Part of a larger suite of Forest Health code amendments, which were brought to APC in 2020.
- Forest Health and Wildfire Committee approval November 2021
- Regional Plan Implementation Committee approval January 2022

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History and Background

- Angora Fire 2007
- Emergency California-Nevada Tahoe Basin Fire Commission Report
  - Recommendations on policy, implementation, and education regarding vulnerability to fire and forest resilience.

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The Emergency California-Nevada Tahoe Basin Fire Commission Report

Recommendation 17 *Simplifying Regulations*

The Governors should direct regulatory and implementing agencies in the Lake Tahoe Basin to simplify the existing system for permitting fuel reduction projects. Steps that should be taken to reduce or eliminate complexity, confusion, and redundancy shall include:

J. The Commission recommends the TRPA, the LRWQCB, USDA Forest Service, and other affected agencies amend their plan and ordinances to allow equipment use on slopes greater than 30% based on *current* and *future* technology, and current forest practices to ensure resource protection.

2007: Angora Fire Treatment Effectiveness

(A) Treated

(B) Untreated

"*Our results show that fuel treatments generally performed as designed and substantially changed fire behavior and subsequent fire effects to forest vegetation. Exceptions include two treatment units where slope steepness led to lower levels of fuels removal due to local standards for erosion prevention. Hand-piled fuels in one of these two units had also not yet been burned*." Safford et al., 2009

2016: Emerald Fire Treatment Effectiveness

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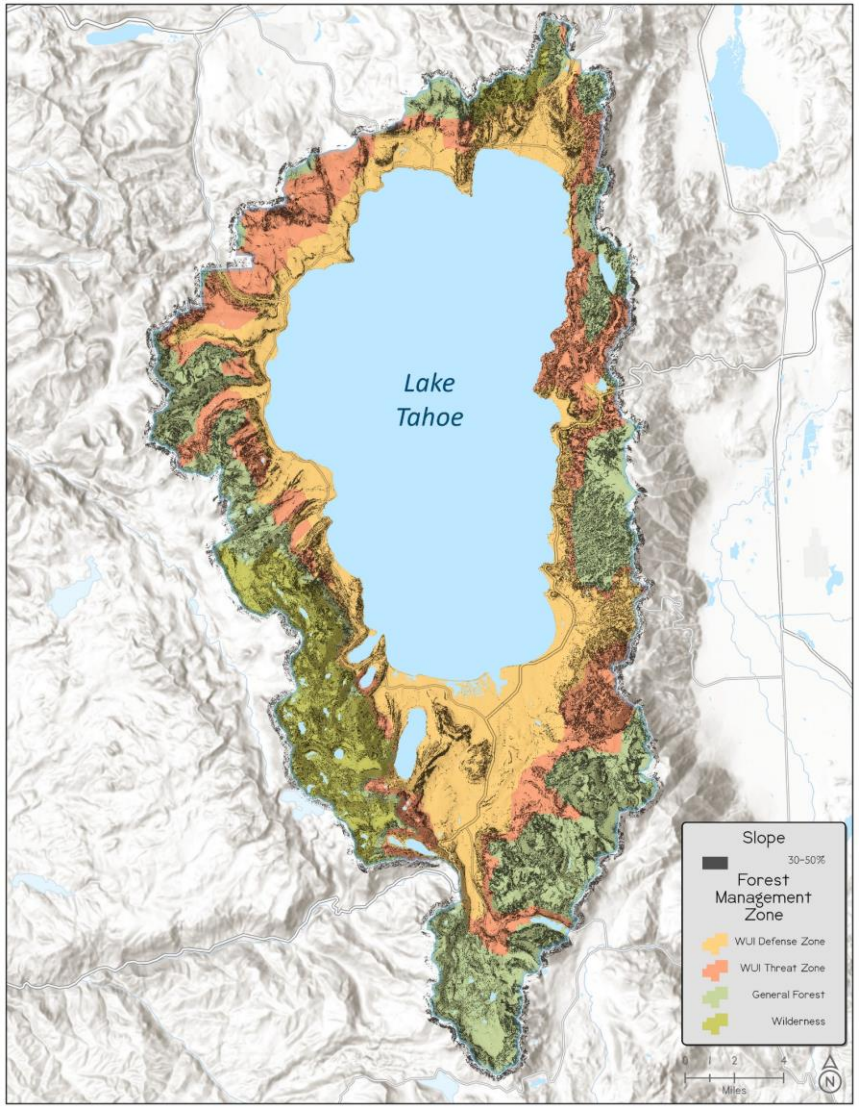
Slopes 30% to 50% with the Basin

- Within the Lake Tahoe Basin, approximately 61,000 acres (27% of total land) fall on slopes 30-50%.
  - Of these acres, 25,300 acres (41%) fall within WUI defense and WUI threat zones.
- The majority of acres are on federal lands (47,100 acres-77%).



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Ecological and Economic Need

- Current code allows for hand treatment on slopes greater than 30%.
  - Resource intensive and more costly
  - Pile burning less ecologically beneficial
  - Implications for pace and scale of restoration

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Engaging Scientists on Analysis

- Engaged science partners to assess erosion effects of a variety of restoration treatments on hillslopes and soil types within the LTW landscape and across the Lake Tahoe basin.
- July 2021 Presentation to Forest Health and Wildfire Committee

University of Idaho

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WEPP Report Key Findings

- Sediment and phosphorus yields from moderate or high severity fire significantly more than all thinning scenarios.
- Managers would need to apply thinning treatments more than 50 times within 60 years to generate erosion that would eliminate the benefits of reducing wildfire severity from moderate to low.

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WEPP Report Key Findings

- Most sediment yield on slopes between 30% and 50% comes from areas covered by shrubs and grasses and not from forested areas.
- On hillslopes between 30% and 50% thinning will increase the risk of erosion, but when thinned hillslopes erode, the sediment yield is no different when compared to an untreated hillslope.

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Engaging Tahoe Fire and Fuels Team

- Worked with key Tahoe Fire and Fuels Team members to collaboratively review and craft code language that maintains environmental protection while allowing for increased use of ground-based mechanical equipment on steeper slopes.

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Proposed Code Amendments

- Two main purposes:
  - Clarification and Standardization
  - Expanded treatment opportunities

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Code Amendments for Clarification and Standardization

Inclusion of over frozen ground tree removal

- Standardizing with previous code updates that include the removal of trees over snow AND frozen ground.

UPDATED SECTIONS
61.1.6.B.
Table 61.1.6-4
61.1.6.D.
61.1.6.D.1.

D. Skidding and Ground Based Vehicle Systems

Skidding is the act of dragging or partially suspending a tree or log along the ground, ~~or~~ snow, or frozen ground by cable systems or by mobile equipment. Ground skidding is the act of skidding a log or tree in full contact with the ground behind mobile equipment. End lining is dragging a log or tree in full contact with the ground by a winch. Cable yarding is the act of removing a log or tree by cable with one end of the log or tree in contact with the ground or fully suspended. Ground based vehicle systems include ~~are all in one "process at the stump"~~ harvesters and machines that cut, process, and remove trees and may require ~~without any~~ ground skidding.

1. Skidding over snow or frozen ground is preferred to unfrozen ground skidding. The depth of the snow shall be sufficient to prevent disturbance of the soil beneath the snow as determined by site-specific field observations. ~~Skidding operations shall cease when soil becomes visible on the surface of the snow.~~

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Refinement of Equipment Definitions

- Refinement of equipment definitions to reflect the suite of machinery and technology available for tree removal.

Updated Section

61.1.6.D.

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Proposed Code Amendments for Expanded Treatment

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Refinement of Table 61.1.6-1

TABLE 61.1.6-1

Road Type	Design	Maximum Grade
Permanent administrative roads	Plans and specifications	10%
Limited use roads remaining open	Plans and specifications	10% with occasional 15%
Limited use roads closed after logging	Plans and specifications	10% with occasional 15
Temporary roads	Flag line	20%
Tractor ~~roads~~ and main skid trails	Flag line	~~30%~~ 50%
Secondary skid trails	None	~~30%~~ 50%

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Refinement of Table 61.1.6-3

- Replaced TRPA water break spacing requirements with CA Forest Practice Act water break spacing requirements.

TABLE 61.1.5-3: MAXIMUM SLOPE DISTANCE IN FEET BY LAND CAPABILITY DISTRICT		
Gradient	**5-7**	**3-4**
Less Than 10%	200	200
10 - 20%	150	90
21 - 30%	90	50

TABLE 61.1.6-3

Estimated Hazard Rating	U.S. Equivalent Measure Road or Trail Gradient (10 or less percent)	U.S. Equivalent Measure Road or Trail Gradient (11-25 percent)	U.S. Equivalent Measure Road or Trail Gradient (26-50 percent)
Extreme	100 ft.	75 ft.	50 ft.
High	150 ft.	100 ft.	75 ft.
Moderate	200 ft.	150 ft.	100 ft.
Low	300 ft.	200 ft.	150 ft.

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Refinement of Table 61.1.6-4

- Use of ground-based mechanical equipment) on Land Capability Districts 1a, 1c, 2 (areas over 30% slopes).

Land Capability District	Removal Method
1a, 1c, or 2	Aerial removal, hand carry, and use of existing roads, in conformance with subsection 61.1.6. Over snow and over frozen ground removal may be approved pursuant to subparagraph 61.1.6.D.1. Use of ground-based equipment and skidding may be used pursuant to 61.1.6.F.1. through 61.1.6.F.5. with approval by the TRPA.

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Language for skidding on 30% to 50% slopes

2. Ground skidding may be permitted on slopes under 30%. Ground skidding on slopes between 30% and 50% requires TRPA review and approval to ensure that environmental protective measures (e.g., water breaks, vegetative buffers, slope length limitations, and remaining group cover post-treatment, erodible soil avoidance) will be in place to minimize slope erosion. ~~limited to Land Capability Districts 3, 4, 5, 6, and 7.~~

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Language for ground-based mechanical equipment on 30% to 50% slopes

5. Ground-based vehicle systems for removing trees without skidding, such as harvester and forwarder combinations, may be used on slopes below 30% ~~approved by TRPA for use in Land Capability Districts 4, 5, 6, and 7.~~ On slopes between 30% and 50%, ground-based vehicle systems for tree removal requires TRPA review and approval to ensure that environmental protective measures (e.g., water breaks, vegetative buffers, slope length limitations, and remaining group cover post-treatment, erodible soil avoidance) will be in place to minimize slope erosion. The use of "innovative technology" vehicles and/or "innovative techniques" for removing trees without skidding may be considered in Land Capability District 1b and 3 pursuant to subparagraph ~~61.1.6.C.1~~ 61.3.3.C.and subparagraph 61.1.6.E.

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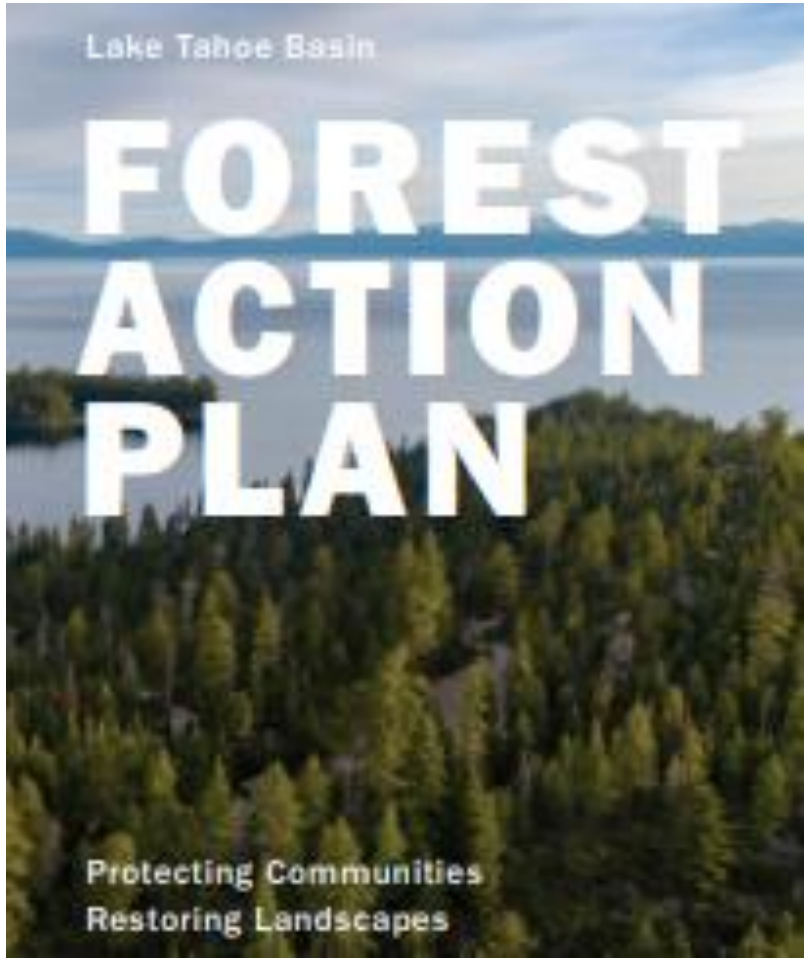
Next Steps and Key Points

- Caldor Fire highlights the critical importance of forest treatments and defensible space work.
- Forest Health and Wildfire Committee - November 2021
- TFFT partners and Forest Action Plan.
- Influx of funding for forest treatments and resilience.



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Expanded Checklist and Findings

- Findings of No Significant Impacts
- Multiple levels of environmental protection currently in place for water quality, erosion, and vegetation management including:
  - Current TRPA Code of Ordinances
  - CA and NV Forestry Regulations
  - LTBMU Forest Plan Standards and Guidelines

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Committee Comments/Questions

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Public Comment

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A motion to recommend approval of the Required Findings, as described in Attachment B, including a Finding of No Significant Effect, for adoption of the Code of Ordinance amendments as described in the staff summary; and,

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A motion to recommend adoption of the Ordinance 2022 -___, amending Ordinance 87-9, to amend the Code of Ordinances as shown in Attachment A.