

**61.1.6.**

**B. Logging Roads, Skid Trails, and Landings**

All logging roads, skid trails, and landings shall be constructed or otherwise created and maintained in accordance with the requirements of this chapter and the *Handbook of Best Management Practices*. Existing roads, skid trails, and landings shall be used whenever possible. New roads shall be approved only if TRPA finds that all alternatives have been explored and determines that the construction of new roads, skid trails, or landings would be the preferred alternative. In accordance with subparagraph 60.1.3.B, existing roads and landings may be accessed in the winter to help prepare for over-snow **and over frozen ground** tree removal. Such preparation **for winter operations** shall be limited to ~~packing snow over the roadways to obtain a firm snow base and allowing~~ movement of logs and equipment without disturbance of the soil. The standards provided below also shall apply.

1. The requirements and standards for design, grade, tree felling in right-of-way, slash cleanup, width, and maintenance, by road type as determined by TRPA, shall be as shown in Tables 61.1.56-1 and 61.1.56-2.

**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	<del>30%</del> 50%
Secondary skid trails	None	<del>30%</del> 50%

**TABLE 61.1.6-2**

Road Type	Right of Way Tree Falling	Minimum Slash Cleanup	Maximum Width	Maintenance
Permanent administrative roads	Prefall	Removal within 50 feet of road	30 feet *	As determined by TRPA
Limited use roads remaining open	Prefall	Removal within 50 feet of road	15 feet 2/turnouts*	Annual maintenance required **
Limited use roads closed after logging	Prefall	Lop and scatter	15 feet 2/turnouts*	Close to vehicle use and revegetate
Temporary roads	Prefall	Lop and scatter	15 feet*	Close to vehicle use and revegetate
Tractor roads and main skid trails	Concurrent	Lop and scatter	15 feet	Close to vehicle use and revegetate

Secondary skid trails	Concurrent	Lop and scatter	15 feet	Close to vehicle use and revegetate
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\* Unless TRPA finds that greater width is necessary for feasible use or safety.

\*\* "Annual Maintenance" includes activities such as restoring drainage features and making other road repairs as necessary.

2. Skid trails shall be located so as to protect residual stands through utilization of natural openings and topographic characteristics. The number of skid trails shall be kept to the minimum necessary and their width shall be 15 feet or less ~~shall be the minimum size needed~~. Directional felling shall be used whenever possible to minimize skid trail density. Main skid trails shall be flagged in advance of felling operations ~~and shall require approval by TRPA.~~

3. Best Management Practices shall be installed on all skid trails, landings, and roads, no later than 15 days following completion of operations within a particular treatment unit, or at the time of seasonal shutdown, whichever is sooner.

4. Water breaks shall be spaced as provided below.

a. The maximum slope distance in feet by land capability district shall be according to Table 61.1.56-3 ~~unless exceptions are requested and approved by TRPA as equally or more protective of water quality.~~

**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.

b. Water breaks shall be placed at lesser intervals as necessary to prevent soil erosion caused by firebreaks, trails, or landings.

c. Construction of water breaks shall be kept current with operations or at the time of seasonal shutdown, whichever is sooner. Erosion control work, including the design and interval of water breaks, shall require TRPA approval ~~unless addressed under a Memorandum of Understanding.~~

d. Landing areas shall be properly drained in a manner to prevent soil erosion and stream pollution.

**C. Removal Methods**

Only the tree removal methods shown in Table 61.1.56-4 shall be used on lands located within the land capability districts shown ~~unless other removal methods are shown to have the same practical effect as the approved methods below:~~

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 <b>and over frozen ground</b> removal may be approved pursuant to subparagraph 61.1.6.D.1. <b>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.</b>
1b (Stream Environment Zone)	As permitted in Land Capability District 1a, end lining may be approved when site conditions are dry and stable, or when winter conditions are adequate for end lining operations so as to avoid adverse impacts to the soil and vegetation. The use of “innovative technology” vehicles and or/or “innovative techniques” for removing trees from SEZs may be considered pursuant to subparagraph <del>61.1.6.C.1.b.</del> <b>61.3.3.C.</b>
3	As permitted in Land Capability District 1b, Ground skidding pursuant to subparagraph 61.1.6.D.2. may be approved.
4-7, inclusive	As permitted in Land Capability District 1b. Ground skidding, as well as pickup and removal by conventional construction equipment, may be approved. Ground-based vehicle systems for removing trees without skidding may be approved pursuant to subparagraph 61.1.6.D.5.

#### 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.~~
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.**
3. Logs shall only be skidded endwise.

4. No logging arches, other than integral arch equipment, shall be permitted.
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.