

Table A-1. Best Management Practices

Best Management Practice	Description	Normal Operating Periods	Wet or Potentially Wet Conditions	Over-Snow Operations
Tahoe Regional Planning Agency Best Management Practices (TRPA 1988c)				
TRPA BMP-9: Straw Wattle Sediment Barrier	Install straw wattle sediment barriers as necessary to intercept and detain small amounts of sediment from small unprotected areas.	X		
TRPA BMP-10: Filter Fence	Install filter fence as necessary to reduce runoff velocity and intercept and detain sediment.	X		
TRPA BMP-11: Straw Wattle Drop Inlet Sediment Barrier*	Install straw wattles as necessary to prevent sediment from entering the storm drain system in unpaved areas.	X		
TRPA BMP-12: Sandbag Curb Inlet Sediment Barrier*	Install sandbag sediment barriers as necessary to prevent sediment from entering the storm drain system in paved areas.	X		
TRPA BMP-15: Straw Mulch	Use straw mulch as necessary to stabilize bare and disturbed soils, to protect the soil surface from raindrop impact, to increase infiltration, to conserve moisture, to prevent soil compaction, to decrease runoff, and to provide a mulch for short-term vegetation if seeded.	X		
TRPA BMP-17: Pine Needle Mulch	Use pine needle mulch as necessary to stabilize bare and disturbed soils, to protect the soil surface from raindrop impact, to increase infiltration, to conserve moisture, to prevent soil compaction, to decrease runoff, and to provide a mulch for short-term vegetation if seeded.	X		
TRPA BMP-55: Recommended Grass Species	Plant approved native and adapted perennial grasses in all cleared, graded, or disturbed sites that are mechanically stabilized to provide short- and/or long-term stabilization.	X		
TRPA BMP-56: Recommended Shrub Species	Plant approved native and adapted shrub species in cleared, graded, or disturbed sites that are mechanically stabilized and seeded with grasses to provide long-term stabilization.	X		
TRPA BMP-59: Wood Chip and Bark Mulches	Apply to any landscape area where trees and shrubs have been planted to protect the soil surface from raindrop impact, to increase infiltration, to conserve moisture around tree and shrub plantings, to prevent soil compaction, and to decrease runoff.	X		

Best Management Practice	Description	Normal Operating Periods	Wet or Potentially Wet Conditions	Over-Snow Operations
Pacific Southwest Region Best Management Practices (USFS 2000)				
PSW Region BMP 1-1: Timber Sale Planning Process (TSPP)	Earth scientists or other trained individuals will evaluate onsite watershed characteristics and the potential environmental consequences of activities related to the proposed timber harvest activities. They will design the timber sale to include site-specific prescriptions for each area of water quality concern.	X		
PSW Region BMP 1-2: Timber Harvest Unit Design	Earth scientists or qualified specialists will conduct a hydrologic and geologic survey of the area affected by proposed harvest activities. Mitigations or changes needed to stabilize slopes or improve streamcourses will be incorporated into the harvest unit design.	X		
PSW Region BMP 1-3: Determination of Erosion Hazard Rating (EHR) for Timber Harvest Unit Design	Use the EHR System developed by the California Soil Survey Committee to estimate the potential erosion hazard of proposed timber harvest units during the pre-sale planning process, and use this information to help design the timber sale and to select appropriate erosion control measures.	X		
PSW Region BMP 1-4: Use of Sale Area Maps (SAMs) for Designating Water Quality Protection Needs	The Interdisciplinary Team (IDT) will identify and delineate water quality protection features, such as the location of streamcourses and riparian zones to be protected, wetlands to be protected, boundaries of harvest units, and roads where log hauling is prohibited or restricted, as part of the environmental documentation process. The Sale Preparation Forester will include them on the SAM at the time of contract preparation.	X		
PSW Region BMP 1-5: Limiting the Operating Period of Timber Sale Activities	Limited operating periods will be identified and recommended during the TSPP by the IDT.	X		
PSW Region BMP 1-8: Streamside Management Zone Designation	Roads, skid trail landings, and other timber harvesting facilities will be kept at a prescribed distance from designated stream courses. Factors such as stream class, channel aspect, channel stability, sideslope steepness, and slope stability will be considered in determining the activities limited within Streamside Management Zones (SMZs). Aquatic and riparian habitat, beneficial riparian zone function, and their condition and estimated response to the proposed timber sale will also be evaluated in designating the SMZ.	X		

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PSW Region BMP 1-12: Log Landing Location	Landing locations proposed by the purchaser or their representatives must be agreed to by the Sales Administrator (SA). An acceptable landing will be evaluated according to a set of criteria that includes the following: the excavated size of landings should not exceed that needed for safe and efficient skidding and loading operations; to the extent feasible, landing locations that involve the least amount of excavation and erosion potential will be selected; and where feasible, landings will be located near ridges away from headwater swales, in areas that will allow skidding without crossing stream channels or causing direct deposit of soil and debris to the stream.	X		
PSW Region BMP 1-13: Erosion Prevention & Control Measures During Timber Sale Operations	Equipment will not be operated when ground conditions are such that excessive damage will result. Erosion control measures will be kept current, which means daily, if precipitation is likely, or at least weekly, when precipitation is predicted.	X	X	
PSW Region BMP 1-14: Special Erosion Prevention Measures on Disturbed Lands	When required by the contract, the purchaser will give adequate treatment by spreading slash, mulch, wood chips, or some other treatment (if agreed upon) on portions of tractor roads, skid trails, landings, cable corridors, or temporary road fills. This provision is to be used only for timber sales that contain special soil stabilization problems that are not adequately treated by normal methods.	X		
PSW Region BMP 1-15: Revegetation of Areas Disturbed by Harvest Activities	Where purchaser's operations have severely disturbed the soil and the establishment of vegetation is needed to control accelerated erosion, the purchaser will be required to take appropriate measures to establish an adequate ground cover of grass or undertake some other vegetative stabilization measure that is acceptable to the Forest Service.	X		
PSW Region BMP 1-16: Log Landing Erosion Prevention and Control	Timber Sale Contract (TSC) requirements provide for erosion prevention and control measures on all landings, which will include provisions for proper drainage. After landings have served purchaser's purpose, the purchaser will ditch or slope the landings and may be required to rip or subsoil and make provisions for revegetation to permit the drainage and dispersal of water.	X		

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PSW Region BMP 1-17: Erosion Control on Skid Trails	Erosion control measures are required on a skid trails, tractor roads, and temporary roads. Normally, such measures involve constructing cross ditches and water spreading ditches; other measure such as backblading will be acceptable in lieu of cross drains.	X		
PSW Region BMP 1-18: Meadow Protection	As a minimum, meadow protection requirements contained in Forest Land and Resource Management Plans must be identified and implemented. Unauthorized operation of vehicular or skidding equipment in meadows or in protection zones is prohibited by the TSC. Damage to designated meadows and/or their associated protection zones will be repaired by the purchaser in a timely manner, as agreed to by the SA. Damage to a streamcourse or streamside management zone (SMZ) caused by unauthorized purchaser operations will be repaired by the purchaser in a timely manner and agreed upon manner.	X		
PSW Region BMP 1-19: Streamcourse Protection (Implementation and Enforcement)	Streamcourse protection principles including but not limited to the following will be carried out: location and method of streamcourse crossings must be agreed to by the SA prior to construction; all damage to streamcourses, including banks and channels, must be repaired to the extent practicable; and equipment use in designated SMZs will be limited or excluded.	X		
PSW Region BMP 1-20: Erosion Control Structure Maintenance	During the period of the TSC, the purchaser will provide maintenance of soil erosion structures constructed by purchaser until they become stabilized, but not for more than 1 year after their construction. After 1 year, needed erosion control maintenance will be accomplished using other funding sources under TSC provisions B6.6 and B6.66.	X		
PSW Region BMP 1-21: Acceptance of Timber Sale Erosion Control Measures Before Sale Closure	“Acceptable” erosion control means only minor deviation from established objectives, so long as no major or lasting damage is caused to soil or water. SAs will not accept erosion control measures that fail to meet these criteria.	X		
PSW Region BMP 1-22: Slash Treatment in Sensitive Areas	Special slash treatment site preparation will be prescribed in sensitive areas to facilitate slash disposal without the use of mechanized equipment. Meadows, wetlands, SMZs, and landslide areas are typical sensitive areas where equipment use is normally prohibited.	X		

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PSW Region BMP 1-25: Modification of Timber Sale Contract	Once timber sales are sold, they are harvested as planned in the TSC. Occasionally, however, it will be necessary to modify a TSC due to new concerns about the potential affects of land disturbance on a water resource. Where the project is determined to unacceptably affect watershed values, the appropriate Line Officer will take corrective actions, which may include contract modification.	X		
PSW Region BMP 2-2: Erosion Control Plan	Within a specified period after the award of a contract (currently 60 days prior to the first operating season), the purchaser will submit a general plan that, among other things, establishes erosion control measures. Operations cannot begin until the Forest Service has approved the plan in writing	X		
PSW Region BMP 2-7: Control of Road Drainage	Used alone or in combination, methods such as the construction of properly spaced cross drains, water bars, or rolling dips; installation of energy dissipaters, aprons, downspouts, gabions, or flumes; and armoring of ditches and drain inlets and outlets can be used to control unacceptable effects of drainage.	X		
PSW Region BMP 2-11: Control of Sidecast Material during Construction and Maintenance	<p>Unconsolidated materials including rocks and boulders that are cast over the side of the road shoulder (sidecasting) can roll directly into streams, damage downslope vegetation, and create bare areas that are difficult to stabilize with vegetation.</p> <p>Sidecasting is an unacceptable construction alternative in areas where it can adversely affect water quality. Prior to start of construction or maintenance activities, waste areas must be located where excess material can be deposited and stabilized. During road maintenance operations, potential sidecast and other waste material will be utilized on the road surface or removed to designated disposal sites.</p>	X		
PSW Region BMP 2-12: Servicing and Refueling Equipment	If the volume of fuel exceeds 660 gallons in a single container, or if total storage at a site exceeds 1,320 gallons, project Spill Prevention, Containment, and Counter Measures (SPCC) plans are required. The Engineering Representative (ER), Contracting Officer Representative (COR), Construction Inspector, or Timber Sales Administrator is authorized to designate the location, size, and allowable uses of service and refueling areas. Operators are required to remove service residues, waste oil, and other materials from National Forest land and be prepared to take responsive actions in case of a hazardous substance spill, according to the SPCC plan.	X		

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PSW Region BMP 2-19: Disposal of Right-of-Way and Roadside Debris	Construction debris and other newly generated roadside slash developed along roads in the SMZ are disposed of by the following, as applicable: if onsite, piling and burning, burying, chipping, scattering, etc.; removal to agreed upon locations; or a combination of the above.	X		
PSW Region BMP 2-22: Maintenance of Roads	Provide the basic maintenance required to protect the road and to ensure that damage to adjacent land and resources is prevented. This is the normal prescription for roads closed to traffic and often requires an annual inspection to determine what work is needed. At a minimum, maintenance must protect drainage facilities and runoff patterns. Additional maintenance includes surfacing and resurfacing, outslipping, clearing debris, etc.	X		
PSW Region BMP 2-23: Road Surface Treatment to Prevent Loss of Materials	When necessary, contractors, purchasers, special users, and Forest Service project leaders will undertake road surface treatment measures such as watering, dust oiling, sealing, or paving to minimized loss of road materials.	X		
PSW Region BMP 2-24: Traffic Control during Wet Periods	Roads that must be used during wet periods should have a stable surface and sufficient drainage to allow use while also maintaining water quality. Rocking, oiling, paving, and armoring are measures that protect the road surface and reduce soil loss. Where wet season field operations are planned, roads may need to be upgraded or maintenance intensified to handle the traffic without creating excessive erosion and damaging the road surface.	X	X	
PSW Region BMP 2-25: Snow Removal Controls to Avoid Resource Damage	The contractor will be responsible for snow removal that will protect roads and adjacent resources. Rocking or other special surfacing will be necessary before the operator is allowed to use the roads. Snow berms will be installed in places that will preclude concentration of snowmelt runoff and that will serve to rapidly dissipate melt water.			X
PSW Region BMP 5-4: Revegetation of Surface Disturbed Areas	Unstable soil surfaces will be stabilized with a mix of plant species best suited for site conditions. Native plant species will be used to the fullest extent possible. Grass or browse species will be seeded between previously planted trees where deemed appropriate for control of runoff and to meet wildlife needs. Soil amendments and irrigation, along with supplement treatments such as application of mulch with tackifier, may be necessary to ensure revegetation.	X		

Best Management Practice	Description	Normal Operating Periods	Wet or Potentially Wet Conditions	Over-Snow Operations
PSW Region BMP 6-1: Fire and Fuel Management Activities	To reduce public and private losses and environmental impacts that result from wildfires and/or subsequent flooding and erosion, measures including the use of prescribed fire or mechanical methods will be used to achieve defensive fuel profile zones; fuel reduction units; and fire suppression activities.	X		
PSW Region BMP 6-2: Consideration of Water Quality in Formulating Fire Prescriptions	To ensure water quality protection while achieving management objectives through the use prescribed fires, prescription elements will include, but not be limited to, factors such as fire weather, slope, aspect, soil moisture, and fuel moisture. The prescription will include at the watershed and subwatershed level the optimum and maximum burn block size, aggregated burned area, and acceptable disturbance for the riparian/SMZ.	X		
PSW Region BMP 7-3: Protection of Wetlands	Activities and new construction in wetlands will not be permitted whenever there is a practical alternative. Factors relevant to the survival and quality of the wetlands, such as water supply, water quality, recharge areas, and habitat diversity and stability, will be considered when evaluating proposed actions in wetlands. Replacement in kind of lost wetlands should be evaluated to apply a “no net loss” perspective to wetland preservation.	X		
Lake Tahoe Basin Management Unit Best Management Practices				
LTBMU BMP 1: Establishing Designated Forwarder/Processor Trails	In forwarder/processor units, use designated forwarder trails. Flag forwarder trails at least 40 feet apart.	X		
LTBMU BMP 2: Locating Landings	Where possible, locate landings and transfer points in areas previously used as landings or on pavement. Locate new landings in areas that involve the least amount of vegetation and soil disturbance and the have the least erosion potential. Locate landings to utilize existing terrain that does not exceed 10 percent slope. Where possible, locate landings so that logs can be forwarded to the landing without crossing channels or impacting riparian areas.	X		
LTBMU BMP 3: Winterizing Landings	Winterize landings within 30 days of construction or use, or after September 15, whichever occurs first, except at sites where operations are in progress. Winterizing includes mulching and crimping or tacking exposed surfaces and implementing perimeter BMPs around the lowest point of landings, as needed.	X		

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LTBMU BMP 4: Decommissioning Landings	Till and mulch all compacted landings and transfer points upon completion of harvest and post-harvest operations. The exceptions are transfer points on pavement and on native surface roads that are part of the permanent transportation system. Tilling shall be accomplished by a winged subsoiler or other equipment that will lift and fracture the subsoil by vertical and lateral shattering, leaving the soil loosened through the full width and depth of the compacted layer with the topsoil remaining substantially in place rather than being inverted. Subsoiling shall extend to a depth of 18 inches. The Forest Service may agree to lesser depths when excessive rock or other limiting site conditions are encountered. Use of rock rippers shall not be permitted to accomplish subsoiling requirements. This work shall be done when the soil is dry. A Forest Service watershed specialist shall advise the Sale Administrator on which areas require tilling due to compaction. Ensure that ground cover requirements are met after tilling; it may be necessary to stockpile chips or slash to accomplish this.	X		
LTBMU BMP 5: Tilling and Mulching Compacted Forwarder/Processor Trails	Till all detrimentally compacted forwarder trails, as determined by a Forest Service watershed specialist, within 15 calendar days after forwarding operations are substantially completed. Ensure that ground cover requirements are met after tilling; it may be necessary to stockpile chips or slash to accomplish this.	X		
LTBMU BMP 6: Hazardous Material Spills	Equipment operators shall have tools and materials necessary to clean up small and large spills on site at all times. Necessary tools and materials will vary depending on the volume of hazardous or toxic materials on site. Mitigation for large spills is described in the LTBMU spill plan. Mitigation for small spills will be by agreement with the Forest Service in accordance with TRPA and Lahontan RWQCB regulations.	X		
LTBMU BMP 7: Harvesting during Wet Soil Conditions	Thinning and harvesting activities will be temporarily suspended when soils are too wet or thawed to continue operations without causing adverse impacts to the soil resource. Cease operations on roads and in treatment units when ruts greater than 2 inches deep and 20 feet long begin to form due to wet conditions.	X	X	X
LTBMU BMP 8: Approval of Erosion Control Measures	The Timber Sale Administrator will get concurrence from a Forest Service watershed specialist before accepting final erosion control work or authorizing winter road use.		X	

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LTBMU BMP 9: Use of High-Impact Equipment	No high impact equipment (greater than eight psi) will be allowed off of the main flagged forwarder trails when soil is not dry to 12 inches or the soil is not frozen.		X	
LTBMU BMP 10: Monitoring Forwarder/Processor Trail Drainage	Forwarder trails will be monitored to ensure proper drainage is achievable (i.e., forwarder trails are not creating trenches which cannot be properly drained by water barring).		X	
LTBMU BMP 11: Installation of Drainage Structures	Drainage structures (including temporary BMPs) must be in place and functioning prior to precipitation events.		X	
LTBMU BMP 12: Timing of Erosion Control Structure Installation	Erosion control structures shall be installed in critical areas on all forwarder trails, roads and landings prior to the end of the day if the Reno National Weather Service forecast for Lake Tahoe is for a "chance" (30% or more) of precipitation before the next day. Erosion control structures shall also be installed prior to weekends or other shutdown periods. All equipment and materials necessary to implement winterization BMPs shall be on site whenever operations occur outside the normal operating period.		X	
LTBMU BMP 13: Erosion Control on Forwarder/Processor Trails	On forwarder trails and landings, erosion control work must be kept current immediately preceding expected seasonal periods of precipitation or runoff. After September 15, work shall be completed as quickly as possible.		X	
LTBMU BMP 14: Road Drainage and Sediment Control	Roads will be properly graded and ditched at all times. In no case should sediment extend more than 20 feet from the outlet of a dip. Sediment barriers (such as straw wattles, or filter fence) shall be placed at the outlets of rolling dips where a high risk to water quality is present. This will include any rolling dip within or adjacent to (within 100 feet) any stream environment zone (SEZ). Sediment barriers should be placed in series (preferably three) and keyed in to prevent flow under the barrier.		X	
LTBMU BMP 15: Sediment Control Structures at Stream Crossings	Sediment control structures (straw wattles sediment fences) may be required where native surface roads cross streams (will not apply if hauling is over snow). These structures shall be installed below and parallel to the road and are designed to prevent road-generated sediments from directly entering a stream course.		X	

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LTBMU BMP 16: Winterizing Stream Crossings	Unless adequate snow/ice cover exists, portions of native surface roads that lie within SEZs shall be rocked or hard-surfaced prior to October 15, unless a grading ordinance exception is granted. If base rock is used, the minimum required depth is 4 inches.		X	
LTBMU BMP 17: Winterizing Native Surface Roads	Portions of native surface roads that are prone to thawing during the winter shall be base rocked to a depth of at least 4 inches prior to October 15, unless a grading ordinance exception is granted.		X	X
LTBMU BMP 18: Rocking Native Surface/Paved Road Intersections	Unless adequate snow cover or frozen conditions exist, where a native surface road meets a paved state or county road, the road intersection must be rocked to Forest Service or applicable county specifications as needed to prevent tracking of mud onto the paved road.		X	X
LTBMU BMP 19: Road Use Limitations during Wet Periods and Over-Snow Operations	Native surface roads must remain completely frozen over the entire active length and must be able to support the weight of any vehicle that will be driven on them, or be rocked to a depth of at least 4 inches. In certain instances, the use of variable tire pressure may be used in place of rocking the road surface.		X	X
LTBMU BMP 20: Native Surface Road Closures	Native surface roads will be closed when any part being used thaws and mitigation such as rocking cannot be implemented to ensure water quality protection. This will preclude the use of the road by all vehicles (including administrative use), unless use is necessary for public health and safety, such as search and rescue.		X	X
LTBMU BMP 21: Closing and Spot-Rocking Rutted Road Segments	If a native surface road becomes rutted, the road will be closed unless spot-rocking of rutted areas will be effective in preventing road damage. Rutting is defined as two-inch deep depressions, 20 feet in length. Rutting of a road or forwarder trail or any other disturbance depositing sediment directly into a stream channel is considered an adverse impact to water quality and must be therefore be avoided.		X	X
LTBMU BMP 22: Reopening Native Surface Roads	A native surface road closed due to wet conditions can be reopened if it dries and can support vehicles without causing rutting, soil displacement, damage to drainage structures, or offsite sedimentation. If not, the road will remain closed.		X	X

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LTBMU BMP 23: General Limitations for Over-Snow Operations	Conditions must be adequate to prevent soil detachment and/or compaction during over snow operations. In most cases, this will mean a minimum of 12 inches of compacted snow or ground surface frozen to a depth of 4 inches. Avoid springs, seeps, and areas that do not freeze well.			X
LTBMU BMP 24: Temperature Limitations for Over-Snow Operations	When daytime temperatures are above freezing, but nighttime temperatures remain below freezing, plan to operate only in the morning and cease operations when ground temperature is above freezing. However, if an adequate depth of snow is present, operations may continue.			X
LTBMU BMP 25: Monitoring Over-Snow Operations	Monitor over-snow operating conditions closely after consecutive nights of above freezing temperatures.			X
LTBMU BMP 26: Moving Equipment during Thawing Conditions	Plan to move equipment and materials to areas near pavement prior to the occurrence of thawing conditions.			X
LTBMU BMP 27: Flagging Road Drainage Structures	Prior to over-snow road use, all drainage structures will be identified by stakes on each side of the road and at areas where outflow controls are in place.			X
LTBMU BMP 28: Minimum SEZ Setbacks	Except at designated crossings, mechanized equipment will be excluded from SEZs according to the minimum setback distances listed below. The actual widths of SEZs and associated setbacks (i.e., equipment exclusions zones) will depend on site-specific topography and the location of primary and secondary vegetation and soil indicators, as set forth in Chapter 37 of the TRPA Code (TRPA 2004) and the Basin 208 Plan (TRPA 1988a). However, in no event will equipment exclusion zones be less than the minimum setback widths listed below.	X		
	<u>Activity and Type of SEZ</u>			
				<u>Minimum SEZ Setback (feet)</u>
	<u>Perennial Streams</u>			
	Mechanical removal in summer			100
	Mechanical removal in winter (over snow)			25
	Hand work for thinning or fuelwood harvest			50

Best Management Practice	Description		Normal Operating Periods	Wet or Potentially Wet Conditions	Over-Snow Operations
	Hand removal of live trees infested with pests/pathogens	10			
	Slash pile construction	50			
	<u>Seasonal Streams</u>				
	Mechanical removal in summer	50			
	Mechanical removal in winter (over snow)	25			
	Hand work for thinning or fuel wood	25			
	Hand removal of live trees with infested with pests/pathogens	10			
	Slash pile construction	50			
	<u>Meadows, Lakes, & Other Wetlands</u>				
	Mechanical removal in summer	50			
	Mechanical removal in winter (over snow)	25			
	Hand work for thinning or fuelwood harvest	25			
	Hand removal of live trees infested with pests/pathogens	10			
	Slash pile construction	50			
LTBMU BMP 29: Preparation of Roads for Over-Snow Operations	During over-snow operations, roads may be plowed, including turnouts, if the action will not cause damage to the road surface and associated drainage structures. On native surface roads, a minimum of six inches of compacted snow will remain on the road surface after plowing to facilitate freezing of the road surface.				X
LTBMU BMP 30: Snow Plowing	Road alignments within the contract area that require snow removal will be staked on both sides along the entire alignment to facilitate plowing. Excess snow removed from plowing shall not be placed into drainages or riparian areas. No soil will be intermixed with the side-cast snow during plowing or grading.				X
LTBMU BMP 31: Preparation of Landings and Forwarder/Processor Trails for Over-Snow Operations	Before over-snow operations begin, pack snow on landings and main trails to facilitate freezing, and spread with wood chips, if available.				X
LTBMU BMP 32: Flagging Drainage Structures and Stream Courses	Before over-snow operations begin, mark existing culvert locations. During and after operations, make sure that all culverts and ditches are open and functional. Designate or mark all stream courses, including small streams, prior to snowfall.				X

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LTBMU BMP 33: Breaching Snow Berms	When roads are plowed, snow berms must be breached to allow proper road drainage. These outlets must be spaced so as not to concentrate road surface flows (usually spaced a minimum of every 300 feet. Erosion control structures (straw wattles/filter fence/straw wattles) may be required at the outlets to collect road-generated sediment.			X
LTBMU BMP 34: Temporary SEZ Crossings	Temporary SEZ crossings will be implemented if it is necessary to cross a SEZ; these crossings will not result in significant soil disturbance or significant damage to vegetation not being removed.	X		
LTBMU BMP 35: Removal of Live and Standing Dead Trees Near Stream Channels	In order to protect stream banks, the minimum buffer for the removal of trees actively infested with pests or pathogens or standing dead trees will be 10 feet on both sides of perennial and seasonal stream channels. Such trees will be removed without driving mechanized equipment into SEZs (except at designated SEZ crossings) and will comply with all applicable SEZ provisions of the Basin 208 Plan and Chapter 37 of the TRPA Code (TRPA 2004). Other live tree removal (mechanized thinning and hand work for thinning or fuelwood) will not be permitted within 25 feet of perennial and seasonal stream channels. There will be no removal of live trees that contribute to stream bank stability or that occur within the flood prone area of a given streamcourse.		X	
LTBMU BMP 36: Coarse Woody Debris in Defense and Threat Zones	Where they occur, two to three logs per acre will be left in the Defense Zone and at least five well-distributed logs per acre will be left in the Threat Zone. Desired logs are at least 20 inches in diameter and 10 feet long.		X	
LTBMU BMP 37: Temporary Erosion Control Measures	Ensure that temporary erosion control measures are in place prior to commencing any soil disturbing activities.		X	

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LTBMU BMP 38: Soil Cover Requirements	<p>Maintain existing levels of soil cover by minimizing ground disturbance and mulching disturbed bare areas (preferably with native materials) after project completion.</p> <p>Soil cover requirements are as follows for timber harvest and thinning activities:</p> <table data-bbox="562 594 1423 781"> <thead> <tr> <th data-bbox="562 594 667 651"><u>Site Type Required</u></th> <th data-bbox="1224 594 1423 618"><u>Percent Soil Cover</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="562 662 1100 686">Forwarder trails within 75 feet of a stream channel</td> <td data-bbox="1224 662 1283 686">100%</td> </tr> <tr> <td data-bbox="562 691 835 716">High erosion hazard soils</td> <td data-bbox="1224 691 1276 716">80%</td> </tr> <tr> <td data-bbox="562 721 869 745">Landings and transfer points</td> <td data-bbox="1224 721 1276 745">80%</td> </tr> <tr> <td data-bbox="562 750 684 774">Other areas</td> <td data-bbox="1224 750 1276 774">50%</td> </tr> </tbody> </table> <p>Soil cover requirements are as follows for prescribed underburning:</p> <table data-bbox="562 880 1423 1003"> <thead> <tr> <th data-bbox="562 880 667 937"><u>Site Type Required</u></th> <th data-bbox="1224 880 1423 904"><u>Percent Soil Cover</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="562 948 915 972">Stream Environment Zone (SEZ)</td> <td data-bbox="1224 948 1276 972">80%</td> </tr> <tr> <td data-bbox="562 977 684 1002">Other areas</td> <td data-bbox="1224 977 1276 1002">50%</td> </tr> </tbody> </table> <p>Effective ground cover consists of fine material (generally less than three inches in diameter) in contact with the soil surface to protect the soil from erosion by wind and water. It generally includes certified weed-free straw, wood chips, conifer needles, or slash spread to a depth of 1.5 to 4 inches.</p>	<u>Site Type Required</u>	<u>Percent Soil Cover</u>	Forwarder trails within 75 feet of a stream channel	100%	High erosion hazard soils	80%	Landings and transfer points	80%	Other areas	50%	<u>Site Type Required</u>	<u>Percent Soil Cover</u>	Stream Environment Zone (SEZ)	80%	Other areas	50%	X		
<u>Site Type Required</u>	<u>Percent Soil Cover</u>																			
Forwarder trails within 75 feet of a stream channel	100%																			
High erosion hazard soils	80%																			
Landings and transfer points	80%																			
Other areas	50%																			
<u>Site Type Required</u>	<u>Percent Soil Cover</u>																			
Stream Environment Zone (SEZ)	80%																			
Other areas	50%																			
LTBMU BMP 39: Slash Pile Burning Near SEZs	<p>Slash pile burning can occur no closer than 50 feet to any primary SEZ vegetation, soil, or hydrologic indicators.</p>	X																		
LTBMU BMP 40: Felling Trees Near SEZs	<p>Trees will be felled away from stream channels, meadows, and other designated SEZs.</p>	X																		

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LTBMU BMP 41: Soil Cover for High Erosion Hazard Soils	Ensure that soil cover requirements are met on soils with high erosion hazard ratings within 15 calendar days after operations are substantially completed.			
LTBMU BMP 42: Seeding Landings with Inadequate Soil Cover	Where adequate material for soil cover is not available for landings, the landings may be seeded using a mix of native grasses and shrubs approved by the Forest Botanist.	X		
LTBMU BMP 43: Use of Wood Chips for Soil Cover	Where wood chips are used for soil cover, spread chips as evenly as possible so their depth does not exceed 5 inches. Ensure that chips do not impair the function of drainage structures, and do not spread chips in SEZs.	X		

* These BMPs may be needed when transfer points are on paved streets

** Tractor skidding may not be used on this project, but the same principles apply to cut-to-length harvesting and forwarding.