

Metric question summaries

Metric code: BURNPFFC Prescribed Fire - Fireline Construction

Metric Question	Overall	AU
Construct firelines along the contour and avoid straight uphill/downhill placement where possible.		1
Construct firelines only as deep as necessary.	1	
Construct firelines only as wide as necessary.	1	
Construct firelines that minimize erosion and runoff.		1
Fireline slope 25 percent or less.		1
Keep firelines out of SMZs, streams, wetlands, etc. where possible. If unavoidable, avoid heavy equipment use.		1
Minimize using soil disturbing tractor-plow firelines.	1	

Metric code: BURNPFM Prescribed Fire - Fireline Maintenance

Metric Question	Overall	AU
Clear streams and ditches of debris.		1
Maintain erosion control structures to control runoff on firelines.		1
Minimize accelerated erosion into waterbodies.		1
Revegetate and/or stabilize firelines that pose a risk of accelerated erosion to waterbodies.		1

Metric code: BURNPFP Prescribed Fire - Planning

Metric Question	Overall	AU
Consider site and weather conditions in order to protect water quality.	1	
Keep high intensity burns out of the SMZ unless suitable WQ measures taken.		1
Note type, width, and location of firebreaks/lines on burn plan and/or map.	1	
Retain duff layer on the soil while meeting prescribed burn goals.	1	
Use natural or in-place barriers to minimize fireline construction.		1

Metric code: BURNWF Wildfire - Wildfire Suppression and Control Firelines

Metric Question	Overall	AU
Clean and maintain firefighting equipment away from SMZs, riparian buffers or waterbodies.	1	
Establish groundcover, re-vegetate or stabilize areas that have a high risk for accelerated erosion.		1
Expose no more ground surface than is necessary to control the fire.	1	
Keep fire-retardant chemicals out of SMZs, riparian buffers or waterbodies.		1
Minimize soil disturbance along streambanks and within SMZs or riparian buffers. Avoid crossing streams with heavy equipment unless necessary.		1
Protect surface waters from polluted runoff.		1
Return water retention areas to pre-existing hydrologic conditions to the extent possible.		1
Stabilize and/or retire firelines and access trails or roads using suitable water diversion / control structures.		1

Metric code: CHEMAPPL Chemicals - Applying

Metric Question	Overall	AU
Apply at least 50 feet away from intermittent and perennial streams or waterbodies, unless these areas are the intended target.		1
Apply in a controlled manner and only to those areas that need it.	1	
Avoid broadcast application in SMZs and over water, unless applied for aquatic use.		1
Fertilizer - Apply sparingly within ephemeral areas.	1	
Maintain accurate and calibrated application equipment.	1	
Pesticide - Low pressure and large droplet nozzle equipment should be used.	1	
Pesticide - Use aerial and ground application methods designed to assure optimum control of the spray path, minimizing drift.	1	
Use product label and/or MSDS for specific recommendations.	1	
Use the minimal amount of chemical to accomplish desired result(s).	1	

Metric code: CHEMHMS Chemicals - Handling, Mixing, and Storing

Metric Question	Overall	AU
Dispose of chemical containers properly.	1	
Park application equipment outside of the SMZ or away from water.		1
Plan for the containment and cleanup of spills or leaks.	1	
Store, mix, and load chemicals away from SMZs or in a location where spills or leaks will not enter the water.		1
Use product label and/or MSDS for specific recommendations.	1	

Metric code: DS Decks and Landings

Metric Question	Overall	AU
Establish deck at locations where soil disturbance is minimized.		1
Install sufficient erosion control measures to control runoff and capture sediment.		1
Minimize the number of decks.	1	
Minimize the size of decks.		1
Select side-ridge location if steep terrain is unavoidable and use additional BMPs as needed.		1
Situate deck atop flat or gently sloping land.		1
Situate deck atop stable soil.		1
Situate deck outside ephemeral drainages.		1
Situate deck outside SMZ.		1
Use groundcover materials (slash, laps, limbs, tops, etc.) as needed to minimize disturbance to exposed soils.		1

Metric code: EFSWM Equipment Fluids and Solid Waste - Solid Waste Management

Metric Question	Overall	AU
Do not burn or bury garbage and trash on-site.	1	
Empty waste containers once they are full.	1	
Secure the waste bin after hours to prevent accidental tipping or vandalism.	1	
Store garbage and waste in a container (or bag), empty/replace as needed, and store to prevent spill or vandalism.	1	

Metric code: EFSWMF Equipment Fluids and Solid Waste - Managing Fluids

Metric Question	Overall	AU
Clean equipment with water - not degreasers or detergents.	1	
Designate area for equipment servicing and fueling on level ground away from streams and waterbodies.	1	
Equipment, vehicles, and machinery free of leaking fluids. No stains on the ground that would indicate leak.	1	
Keep fluid spill, containment, and clean-up tools and materials on-site (e.g., hose clamps, extra empty containers, absorbent material/pads, plastic sheeting, etc.)	1	
Keep fluids secure in labeled containers that control or minimize leakage or spillage.	1	
Service and fuel equipment at least 100 feet from streams, waterbodies, ditches, and ephemeral drainages.	1	
Service equipment in a way that minimizes potential for fluids to enter waterbodies or the groundwater.	1	
Use appropriate containers to store oils, fuels, and other fluids - minimizing leakage/spillage.	1	

Metric code: LS Logging Systems

Metric Question	Overall	AU
Cease operations when inclement weather and/or wet site conditions persist.	1	
Harvest timber in a manner that minimizes significant changes to soil structure or organic matter.	1	
Single pass of equipment does not produce significant rut.	1	

Metric code: LSB Logging Systems - Biomass

Metric Question	Overall	AU
Avoid harvesting dead coarse wood when present.	1	
Avoid harvesting snags when present.	1	
Avoid harvesting tree roots, stumps, or existing duff litter.	1	

Metric code: MECHPREPBED Mechanical Site Preparation - Bedding

Metric Question	Overall	AU
Align beds along the land contours.		1
Conduct bedding when soil moisture conditions are appropriate to avoid impacts to soil structure and infiltration.	1	
Keep beds from connecting into a stream or water drainage system.		1
Minimize number of passes made with bedding equipment.	1	
Retain undisturbed groundcover between beds.	1	
Stagger bed openings from one bed row to the next when gap openings are used within rows.		1
Stop beds at the outer edge of the SMZ or riparian buffer.		1

Metric code: MECHPREPDC Mechanical Site Preparation - Drum Chopping

Metric Question	Overall	AU
Avoid creating large contiguous areas of exposed bare soil.	1	
Minimize intensive soil disturbance and reduce the risk of erosion and sediment transport.	1	
Minimize number of passes made with chopper and equipment.	1	
Minimize the potential of concentrating surface runoff.	1	
Minimize uprooting of leftover trees and stumps.	1	

Metric code: MECHPREPHERB Mechanical Site Preparation - Herbicides Applied by Tractor

Metric Question	Overall	AU
If applied by tractor, avoid impacts to soil structure, infiltration, or runoff.	1	
Keep number of passes with tractor and equipment to a minimum.	1	

Metric code: MECHPREPLOG Mechanical Site Preparation - Lopping

Metric Question	Overall	AU
Conduct vegetation management and site prep within the SMZ or riparian buffer via lopping.		1
Keep felled or lopped vegetation out of streams and waterbodies.		1
Retain sufficient shade within the SMZ to prevent adverse temperature fluctuations.		1

Metric code: MECHPREPSRP Mechanical Site Preparation - Shearing, Raking or Piling

Metric Question	Overall	AU
Avoid gouging the soil surface in a manner that could funnel runoff and transport sediment into nearby waterbodies.		1
Keep equipment out of the SMZ or riparian buffers.		1
Maintain existing debris and groundcover within ephemeral drains or dry gullies.	1	
Minimize the amount of soil that is disturbed by the equipment blade/rake and avoid uprooting leftover trees and stumps.	1	
Minimize the removal of surface organic matter.	1	
Prevent the movement of significant amounts of soil into debris piles.		1
Set windrows along the land's topographic contour.		1
Stagger windrow opening from one row to the next.		1

Metric code: MECHPREPTILL Mechanical Site Preparation - Tillage

Metric Question	Overall	AU
Conduct tillage activities when soil moisture is appropriate to avoid negative impacts to soil structure and infiltration.	1	
Minimize the number of passes with the tillage equipment.	1	
Minimize tillage work within ephemeral drainages or dry gullies, maintaining existing debris and groundcover.		1
Retain undisturbed vegetation and groundcover between tillage strips.	1	
Stop tillage work at the outer edge of the SMZ or riparian buffer. Tillage should not funnel runoff into streams or water.		1
Till along the land contours, not up or down the slope.		1

Metric code: MECHPREPTPLT Mechanical Site Preparation - Tree Planting

Metric Question	Overall	AU
Conduct machine planting when the site conditions are appropriate to avoid intensive soil disturbance or accelerated runoff.	1	
Dispose of seedling bags, boxes, and culled seedlings appropriately. Do not place in or near streams and waterbodies.	1	
Minimize the number of passes made with the tractor.	1	
Operate equipment along the land contours.		1

Metric code: RDCONST Roads - Construction (New or Existing)

Metric Question	Overall	AU
In low lying areas, keep the roadbed as close to the original ground level as possible.		1
In low lying areas, provide adequate cross drainage when fill material is used.		1
Install cut bank no steeper than 0.5:1 with tight soils when conditions allow.		1
Install cut bank no steeper than 2:1 with loose soils when conditions allow.		1
Install diversion or other structures to control and capture runoff (e.g., broad-based dips, settlement basin, etc.).	1	
Keep grade slopes to 10 percent or less when conditions allow.		1
Limit height of side / cut banks to 5 feet or less when conditions allow.		1
Limit road segment lengths to 200 feet or less for steeper grades.		1
Minimize road width. Heavy-duty roads: 14 - 20 ft wide.		1
Minimize road width. Light-duty roads: 10 - 14 ft wide.		1
Minimize soil disturbance and the amount of road at any stream crossing.		1
Stabilize and/or harden the road surface - using geotextile fabric beneath - as needed.	1	
Stabilize bare soil areas using suitable technique (e.g., seed, mulch, riprap, etc.).		1
Use full-bench construction in sloping terrain where soil is loose and prone to sliding or accelerated erosion.	1	
Use insloping, outsloping and/or crowning techniques as needed.	1	
Use rock, stone, wooden mats, or other suitable materials for at least 50 feet from public road.		1

Metric code: RDMAINT Roads - Maintaining Existing

Metric Question	Overall	AU
Clean out built-up silt and sediment from retention areas as needed.	1	
Close access to roads when suitable to minimize unnecessary use.	1	
Maintain a road surface that provides good runoff control, water quality protection, and vehicle access.	1	
Maintain an open daylight corridor.	1	
Perform road and ditch maintenance during times when heavy precipitation is not expected.	1	
Rehabilitate and stabilize the road and side / cut banks according to the standards of FPG .0209.	1	
Take prompt action to protect water quality if BMPs are not properly functioning.	1	

Metric code: RDOLP Roads - Overall Layout and Planning

Metric Question	Overall	AU
Construct road to drain naturally - not into streams or waterbodies.	1	
Construct roads at least one year before use.	1	
Establish roads along the land contours.	1	
In steep terrain, construct outsloped road with broad-based dips when conditions allow.	1	
In steep terrain, establish road along gentle hill slopes - just below the ridgeline.	1	
Keep road atop firm, well-drained soils.	1	
Minimize soil disturbance and road placement within ephemeral drainages.	1	
Minimize the number of stream crossings. Avoid crossings.	1	
Plan adequate right-of-way width to daylight the road for drying.	1	
Plan the road to minimize the amount of cut and/or fill needed.	1	
Use information resources to exam site and determine best location for the road.	1	

Metric code: REHABCA Rehab - Controlling Access

Metric Question	Overall	AU
Close-off access to roads and trails until stabilized.		1
Install water diversion structures to deter access as needed.	1	

Metric code: REHABRCC Rehab - Runoff Control and Capture

Metric Question	Overall	AU
Install appropriate methods of runoff control and/or sediment capture.	1	
Mat logging debris atop critical bare soil areas, particularly during operation.		1

Metric code: REHABSTB Rehab - Stabilization

Metric Question	Overall	AU
Apply mulch cover over approximately 50 to 75 percent of the seeded area.		1
Prepare soil using disking or tilling where needed. Minimize to the extent practicable.		1
Spread seed evenly across the area when soil moisture and site conditions are suitable.		1
Spread woodbark or chips over approximately 50 to 75 percent of the seeded area.		1
Spread woodbark or chips several inches thick when used as primary temporary groundcover (no seed).		1
Use erosion control matting when/where needed.	1	
Use fertilizer, lime, or organic matter were needed to promote seed germination.	1	
Use seed or mixtures adapted for the site, soil, and time of year.	1	

Metric code: REHABSTRX Rehab - Stream Crossings

Metric Question	Overall	AU
If temporary culvert crossing, remove all fill material or prevent material from entering stream.		1
If temporary, remove the stream crossing itself.		1
Install BMPs to control, divert, and/or capture runoff/sediment along approachways - preventing entry to stream.	1	
Re-contour the streambank edges and approachways to resemble natural conditions pre-installation.		1
Remove debris from the stream channel to meet FPGs and GSs.		1

Metric code: SKTR Skid Trails

Metric Question	Overall	AU
Avoid widespread or random skidding patterns with repeated passes.	1	
Concentrate skidding on as few skid trails as needed.	1	
Establish skid trails along land contours and keep slopes to a 25% grade.		1
Install waterbars, brush barriers, turnouts or use other methods as needed.	1	
Lap and pack down leftover logging debris atop primary skid trails - ideally during operation.		1
Limit primary skid trails to 10 percent of the total working area.		1
Minimize placement and use of skid trails in ephemeral drainages.	1	
Minimize skid trail width and avoid two-lane trails.		1
Minimize the extent of gouges or trenches on the ground surface.		1

Metric code: SMZBO Streamside Management Zone - Biomass Operations

Metric Question	Overall	AU
Avoid harvesting dead coarse wood when present in SMZ.		1
Avoid harvesting snags when present in SMZ.	1	
Avoid harvesting tree roots, stumps, or existing duff litter in SMZ.	1	

Metric code: SMZBRD Streamside Management Zone - Braided

Metric Question	Overall	AU
Avoid heavy equipment use when braided channels are close together.		1
Conduct operation during dry soil conditions when possible, limiting heavy equipment use.		1
Establish SMZ from the outermost channel limits, not from innermost channel bank.		1
Use matting systems for skid trails and/or roads.	1	

Metric code: SMZDTCH Streamside Management Zone - Ditches

Metric Question	Overall	AU
During temporary ditch crossing installation and use, avoid altering water flow.		1
During temporary ditch crossing installation and use, minimize erosion and sediment runoff.	1	
Limit heavy equipment use along ditch edge, maintaining structural integrity.	1	

Metric code: SMZEPH Streamside Management Zone - Ephemeral

Metric Question	Overall	AU
Minimize disturbance to the soil and groundcover within the ephemeral stream area.		1

Metric code: SMZO Streamside Management Zone - Operations

Metric Question	Overall	AU
Allow no more than 20 percent evenly distributed bare soil surface within the SMZ.	1	
Avoid gouging the soil in a manner that could funnel runoff and transport sediment to the waterbodies.		1
Avoid roads, skid trails, decks, and portable sawmills inside the SMZ.		1
Fell and remove trees away from the stream or waterbody.		1
Keep logging debris out of stream or remove promptly if introduced when operating in the SMZ (not at crossing).		1
Keep roads, skid trails, decks, and portable sawmills at least 10 feet away from the stream when placement in SMZ is unavoidable.		1
Limit heavy equipment use within 10 feet of the edges of streams and waterbodies.		1
Maintain approximately half of the pre-harvest vegetative canopy cover within the SMZ.		1
Mark SMZs perimeter clearly using paint, flagging, or other means.		1
Minimize disturbance to the mid-level and understory if removing significant overstory.		1
Service and refuel equipment outside of the SMZ, unless mechanical failure requires repair. Control fluids as needed.		1

Metric code: SMZW Streamside Management Zone - Width

Metric Question	Overall	AU
SMZ width sufficient to filter upslope pollutants and prevent stream or waterbody sedimentation/contamination.		1
SMZ width sufficient to provide stream shade and prevent adverse temperature fluctuations.		1
Wrap SMZ around the head of the intermittent or perennial stream, at the ephemeral transition.		1

Metric code: TCRBBD

Tools to Control Runoff - Broad-Based Dips

Metric Question	Overall	AU
Avoid siting the outlet onto soft soil or fill material, unless other BMPs are utilized to prevent erosion.		1
Capture the sediment from the outlet as needed.		1
Construct and compact a slight hump across the downhill edge of the dip.		1
Excavate a shallow dip approximately 15 to 20 feet long into the uphill travel surface.		1
Harden the travel surface with stone or other material on slopes greater than 8%, otherwise as needed.		1
Lay out and construct the broad-based dip at right angle to the travel surface and across the full width of the road.		1
Number and distance between dips follows spacing guidance (at a minimum).	1	
Outslope the bottom of the dip at enough of an angle to turn away water and runoff - approximately 2-3% angle.		1
Reverse grade of the hump does not exceed 2 to 3 percent slope down toward the base of the dip.		1
Situate the broad-based dip outlet in a manner that prevents runoff from flowing directly into streams or waterbodies.		1

Metric code: TCRDRR

Tools to Control Runoff - Cross Drains

Metric Question	Overall	AU
Avoid siting the outlet onto soft soil or fill material, unless other BMPs are utilized to prevent erosion.		1
Capture the sediment below the outlet as needed.		1
For culvert pipes, cover the pipe with at least one foot of fill and harden the crossing location.		1
For culvert pipes, use at least a 12-inch diameter pipe if only needed for groundwater seeps or minimal runoff volume.		1
For culvert pipes, use at least a 15-inch diameter pipe on heavy flow areas.		1
Install cross-drains at an approach angle suitable to allow free flow of runoff into and through the cross-drain.		1
Install drop-inlet where the elevation of the cross-drain inlet is lower than the ditchline, as needed.		1
Match the base level of the cross-drain inflow to the base elevation of the ditchline.		1
Match the cross-sectional area of the pipe to the area of the contributing ditchline.		1
Minimize erosion on both ends of the cross-drain so the ditchline.		1
Number and distance between cross-drain culverts follows spacing guidance (at a minimum).	1	
Set cross-drains on a 2 to 4 percent downslope angle.		1
Situate the cross-drain outlet in a manner that prevents runoff from flowing directly into streams or waterbodies.		1
Where needed, harden the inflow headwall of the cross-drain with stone, sandbags, geotextiles, vegetation, drop-inlet, or other suitable materials.		1

Metric code: TCRINS

Tools to Control Runoff - Inside Ditchlines

Metric Question	Overall	AU
Avoid siting the outlet onto soft soil or fill material, unless other BMPs are utilized to prevent erosion.		1
Capture the sediment below the outlet as needed.		1
Control runoff speed and volume.	1	
Excavate the ditchline to the minimum depth and width needed.	1	
Install geotextiles, matting, stone or other suitable material as needed to prevent downcutting.		1
Install turnouts or cross-drains at intervals adequate to carry the expected runoff.	1	
Match the cross-sectional area of the pipe to the area of the contributing ditchline.		1
Match the ditchline cross-sectional area to a minimum equivalent of a 15 inch culvert.		1
Situate outlet in a manner that prevents runoff from flowing directly into streams or waterbodies.		1

Metric code: TCRIOC

Tools to Control Runoff - Insloping, Outsloping, and Crowing

Metric Question	Overall	AU
For freshly graded outsloped or crowned roads, install a temporary low berm along the outside (downslope side) edge of the road as needed.	1	
If a temporary berm is installed, provide outlets or gaps so runoff can move away from the road surface		1
Maintain the road surface as needed to minimize or repair ruts, holes, or depressions that hold water.	1	
On insloped roads, excavate and maintain inside ditchlines and cross-drains.	1	

Metric code: TCRTURN

Tools to Control Runoff - Turnouts

Metric Question	Overall	AU
Avoid siting the outlet onto soft soil or fill material, unless other BMPs are utilized to prevent erosion.		1
Begin the inflow of the turnout at the same grade level as the road, skid trail, fireline or ditch.		1
Capture the sediment below the outlet as needed.		1
Construct using a turnout angle between 15 to 30 degrees downslope.		1
Excavate the turnout with enough outlet gradient angle so runoff can drain in a controlled manner, generally from 1 to 3 percent is adequate.		1
For use in roadside ditches, minimize erosion within that ditch so the inflow of the turnout does not create a gully.		1
Number and distance between turnouts follows spacing guidance (at a minimum).	1	
Situate outlet in a manner that prevents runoff from flowing directly into streams or waterbodies.		1

Metric code: TCRWTRB

Tools to Control Runoff - Waterbars

Metric Question	Overall	AU
Avoid siting the outlet onto soft soil or fill material, unless other BMPs are utilized to prevent erosion.		1
Capture the sediment below the outlet as needed.		1
Establish groundcover or harden the waterbar with stone or other material, as needed.		1
Excavate and construct using equipment/techniques that assure proper angles and a firm waterbar hump.	1	
Excavate the trench with enough gradient to allow adequate flow of water runoff.		1
Number and spacing between waterbars follows spacing guidance (at a minimum).	1	
Situate outlet in a manner that prevents runoff from flowing directly into streams or waterbodies.		1
Tie the uphill end of the waterbar into the side / cut slope, and angle the waterbar downhill towards the outfall edge.		1
Use an angle ranging from 15 to 30 degrees (downslope) for the waterbar.		1

Metric code: TCSBB

Tools to Capture Sediment - Brush Barriers

Metric Question	Overall	AU
Avoid removing the brush barrier once it is established.		1
Cut large pieces of material into smaller chunks, as needed.	1	
Pile and pack down brush to achieve close contact with the ground surface.		1
Use additional BMP measures if brush barriers fail to capture sediment.	1	

Metric code: TCSCD Tools to Capture Sediment - Check Dams

Metric Question	Overall	AU
Construct check dam such that the center is lower than the outer edges.		1
Lay down geotextile fabric before placing check dam material, as needed.		1
Provide ample support at the base of the check dam.		1
Remove built-up sediment as needed from the check dam.	1	
Space check dams such that the top of the downslope most dam matches the elevation of the bottom of the next dam up the slope.		1
Tie-in the base of the check dams with the soil.		1
Total height of check dam does not exceed 3 feet.		1

Metric code: TCSFA Tools to Capture Sediment - Filter Areas

Metric Question	Overall	AU
Establish permanent groundcover.		1
If unstable soils must be used for a filter area, install treatments such as erosion matting or other methods to stabilize the soil.		1
Minimize intensive soil disturbance.		1
Use stable, well-drained soils for filter areas when available.		1

Metric code: TCSSB Tools to Capture Sediment - Straw Bales

Metric Question	Overall	AU
Adjust BMPs accordingly if sediment is built-up behind bales.	1	
If stacking square bales, stagger to provide overlap - similar to brick laying.		1
Install measures upslope and downslope of bales as needed.	1	
Monitor bales and take prompt action if not sufficient.		1
Set bales tightly against the ground surface and anchor.		1

Metric code: TCSSF Tools to Capture Sediment - Silt Fence

Metric Question	Overall	AU
Adjust BMPs accordingly if sediment is built-up behind fence.	1	
Bury the bottom 4 to 6 inches of silt fence securely into the ground.		1
Ends of fencing gently turned like a sideways "J", with the hook facing uphill.		1
Install measures upslope and downslope of silt fence as needed.	1	
Install the fence so that the buried portion is along the upslope face of the fence.		1
Limit drainage area to 100 feet of fence for every one-quarter acre of land.		1
Monitor fence and take prompt action if not sufficient.	1	
Reinforce the silt fencing from being knocked over or blown out as needed.		1
Set fencing along the land contours and extend the fencing far beyond the expected pathway(s) of runoff flow.		1

Metric code: TCSSTP

Tools to Capture Sediment - Sediment Traps or Pits

Metric Question	Overall	AU
Avoid using the spoil to build up the sides of the pit.		1
Clean out accumulated sediment as needed and dispose of appropriately (with stabilization as needed).		1
Create a reinforced outlet for overflow capacity.		1
Dispose or stabilize the excavated spoil material.	1	
Excavate the pit with a suitable opening and depth to capture the expected sediment runoff, minimizing disturbance.		1
Harden the walls of the pit to minimize the risk of structural failure.		1
If the pit must be situated within unstable soils, install additional measures to provide soil stabilization around the pit.		1
Locate the pit within stable, well-drained soils when available.		1
Revegetate exposed soil around the perimeter of the pit.		1

Metric code: WETHARV

Wetlands - Harvesting

Metric Question	Overall	AU
Concentrate heavy equipment use to primary skid trails and decks. Minimize rutting, i.e., single pass produces more than 6 inch rut.	1	
Minimize harvesting activity in sensitive areas, i.e., wetter than normal areas or near waterbodies.	1	
Minimize heavy equipment use along the edge of ditches.	1	
Operate equipment during dry periods if possible. Minimize operations on saturated soils and near waterbodies.	1	
Rehabilitate areas of significant soil disturbance.	1	
Use appropriate harvesting equipment, methods, and/or techniques, i.e., shovel-mat systems.	1	

Metric code: WETPREP6

Wetlands - 6 Mandatory BMPs for Pine Site Prep in Wetlands

Metric Question	Overall	AU
Arrange windrows to limit erosion, overland flow, and runoff.	1	
Maintain natural topography, preventing immediate or gradual conversion of wetland to non-wetland.	1	
Minimize dragging and pushing of soil while moving logs and debris.	1	
Minimize excessive soil compaction and rutting - maintain soil physical health.	1	
Prevent disposal or storage of logs or debris in SMZs.	1	
Utilize water management techniques to minimize off-site water quality impacts as needed.	1	

Metric code: WETRD15

Wetlands - 15 Mandatory BMPs for Roads in Wetlands

Metric Question	Overall	AU
Avoid discharge into breeding and nesting areas of migratory waterfowl, spawning areas, and wetlands.	1	
Locate roads and skid trails sufficiently far from waters of the US.	1	
Minimize encroachment of equipment into the waters of the US during road construction.	1	
Minimize number, width, and total length of permanent and temporary roads and skid trails.	1	
Minimize vegetation disturbance in the waters of the US.	1	
Provide sufficient drainage to prevent restriction of water flow.	1	
Remove temporary fills completely and restore to original elevation.	1	
Shall not discharge in a component of the National Wild and Scenic River System.	1	
Shall not discharge in areas of concentrated shellfish production.	1	
Shall not disrupt the migration or other movement of aquatic life.	1	
Shall not locate discharges in the proximity of a public water supply intake.	1	
Shall not take or jeopardize the continued existence of T&E species.	1	
Stabilize and maintain fill during and following construction.	1	
Take borrow material from upland sources whenever feasible.	1	
Use suitable material for discharge/fill that is free from toxic pollutants in toxic amounts.	1	

Metric code: WETRDFL

Wetlands - Fill Roads

Metric Question	Overall	AU
Construct road during dry period and in advance to allow for settling.	1	
Do not connect the borrow ditch to an outlet.		1
Install or maintain roadside berms with openings to release flow.	1	
Minimize amount of organic matter within the fill material.	1	
Minimize depth, width, and length of borrow ditch.	1	
Minimize excavation and disturbance in nearby wetland areas.	1	
Place unsuitable fill in small piles adjacent to the borrow ditch with small opening to release flow.		1
Provide adequate cross drainage.	1	
Use fill material from non-wetland areas where practical.	1	

Metric code: WETRDFLD

Wetlands - Fill Roads with Adjacent Collector Ditch

Metric Question	Overall	AU
Install flow control devices within roadside collector ditch as needed.		1
Install or maintain grader ditch, roadside berm, and/or vegetative groundcover alongside road edges.	1	
Maintain a crowned road surface or use other appropriate BMPs to control runoff and promote drying of road surface.	1	
Protect or maintain groundcover 4 to 5 feet adjacent to ditch on the opposite side of the road.		1

Metric code: WETRDFT

Wetlands - Flat Roads

Metric Question	Overall	AU
Establish and maintain a grader ditch if needed.	1	
Install water control structures within the roadside grader ditch where needed.	1	
Keep road grade as close to original land surface grade as possible.		1
Stabilize and/or harden the road surface with suitable material where high surface flows are expected.		1

Metric code: WETRDGEN**Wetlands - Roads General**

Metric Question	Overall	AU
After construction is completed, stabilize disturbed areas of the roadbed with vegetation as needed.	1	
As needed, apply stabilizing materials atop the culvert crossing, on each culvert headwall, and within each crossing approach floodway.		1
Construct roads during periods of relatively dry soils when possible.	1	
Construct the crossing in a way that prevents floodwaters from flowing over the road at the culvert.		1
Create shallow depressions in the road on each approach to the culvert.		1
Establish and maintain groundcover vegetation along road shoulders.	1	
If fill material is generated by the road construction process, place suitable mineral soil fill on the road surface or remove it from the wetland to a non-wetland area, if feasible.	1	
Install culverts of adequate number and/or capacity to handle floodwaters.		1
Maintain a daylight corridor to allow more rapid drying of the road.	1	
Minimize the lateral extent of wetland disturbance during construction.	1	
On frequently used roads, apply gravel or other suitable stabilizing material on areas where erosion and sedimentation may occur.	1	
On lightly used roads, establish and maintain vegetative groundcover or other suitable stabilizing materials upon the road surface.	1	
Plan and implement road designs, locations, alignments and water management devices as needed to minimize hydrologic alterations.	1	

Metric code: WETWM**Wetlands - Water Management**

Metric Question	Overall	AU
Conduct excavation and other operations during periods of relatively dry soils, if conditions allow.	1	
Design, construct, and maintain drainage system to minimize surface runoff from entering into the ditch(es).	1	
Do not convert a wetland to a non-wetland during, water management activities, including minor drainage,	1	
For initial construction or maintenance, deposit excavated material (spoil) atop existing roads or on top of old spoil locations, if possible.		1
If piling is necessary, use small piles with frequent gaps between them.		1
Install and maintain flow control devices as needed to manage water velocity and volume.		1
Limit the depth, width and length of new minor drainage ditches to only that which is needed to provide effective minor drainage.	1	
Reconsider re-filling or plugging the minor drainage ditch(es) once sivilcultural objectives have been met.		1
Stabilize the spoil material as needed.		1
Start excavation near the discharge end while leaving a plug of soil in place to serve as a temporary dam within the newly excavated ditch.		1

Metric code: XBRDGMAT**Stream Crossing - Bridgemat**

Metric Question	Overall	AU
Create a solid-surface with panels butted tightly together.		1
Keep equipment out of the channel during installation and removal unless unavoidable.		1
Minimize over-hang from logs, trees, or trucks/trailers.		1
Select a stream crossing location that has high, level ground on each side.		1
Select a stream crossing location that has solid footing to support mats and equipment.		1
Select a stream crossing location with a narrow channel width.		1
Select a stream crossing location with firm, stable streambanks.		1

Metric code: XCULV

Stream Crossing - Culvert

Metric Question	Overall	AU
Backfill material atop culvert at least 12 inches.		1
Install crossing to allow floodwaters to flow around crossing as needed.		1
Minimize the height that water drops from the outlet of the culvert.		1
Pack backfill material down tightly, avoiding material with excessive debris.		1
Place culvert in the center of existing or expected water flow.		1
Protect the inlet/outlet of the culvert/fill material with suitable stabilization measures.		1
Set culvert(s) with appropriate downslope grade.		1
Use appropriate number/size of culverts.		1
Use at least a 15 inch culvert.		1
Use culvert that extends at least 12 inches beyond the edge of the fill material. If shorter, inlet/outlet headwalls adequately protected.		1
Use surface hardening materials on the culvert and approachways as needed.		1

Metric code: XFORD

Stream Crossing - Ford

Metric Question	Overall	AU
Do not use ford crossings on skid trail crossings. Use only for truck access.		1
Establish permanent groundcover over at least 80% of the approachway area within the first 50 feet.		1
Install at location with relatively low streambanks.		1
Install at location with solid and level stream bottom.		1
Install at straight section of stream channel.		1
Install ford to allow passage of natural streamflow, particularly for low-flow or dry periods.		1
Spread hardening materials evenly - avoid dips, humps, or ruts.		1
Use clean hardening materials on vehicle traffic surface.		1
Use geotextile fabric as underlayment as needed.		1

Metric code: XOLPP

Stream Crossing - Overall Layout, Planning, and Performance

Metric Question	Overall	AU
Avoid stream crossings when possible.	1	
Consider crossing site when selecting crossing type.		1
Construct, install, and remove crossing during low-flow if possible.		1
Designate stream crossing location(s) using flagging, paint, or other suitable marking.		1
Install crossing at a right-angle to the stream channel.		1
Install crossing at relatively straight stream section.		1
Minimize alteration of stream depth, width, gradient, and capacity.		1
Minimize approachway slope/grade.		1
Minimize the number of crossings.	1	
Rehabilitate crossing area as soon as possible.		1
Stabilize approachways using appropriate means (e.g., slash, laps, rock, etc.).		1

Metric Question	Overall	AU
Do not place soil within or on top of the pole crossing.		1
Install pole crossing to an elevation higher than the adjacent channel or bank.		1
Maintain water flow through the pole crossing.		1
Pack down limbs, tops, slash, or other woody material atop the approachways.		1
Protect the integrity of the channel banks (intact and stable).		1
Remove the pole crossing immediately following use or when high-flows are expected.		1
Use logs large enough to stack loosely.		1
Use logs that are de-limbed and topped.		1
Use logs that are free of soil or other debris.		1