

O-1. Timber Harvesting Within the Watershed Overlay Zone and Water Reservoirs Protection District

- (1) **Shoreline integrity and sedimentation.** Persons conducting timber harvesting and related activities must avoid the disruption of shoreline integrity, the occurrence of sedimentation of water, and the disturbance of water body and watershed tributary stream banks, water body and watershed tributary stream channels, shorelines, and soil lying within water bodies, watershed tributary streams and wetlands. If, despite such precautions, the disruption of shoreline integrity, sedimentation of water, or the disturbance of water body and watershed tributary stream banks, water body and watershed tributary stream channels, shorelines, and soil lying within water bodies, watershed tributary streams and wetlands occurs, such conditions must be immediately corrected.
- (2) **Slash treatment.** Timber harvesting and related activities shall be conducted such that slash or debris is not left below the normal high-water line of any water body or watershed tributary stream, or the upland edge of a wetland. Section 15(O-1)(2) does not apply to minor, incidental amounts of slash that result from timber harvesting and related activities otherwise conducted in compliance with this section.
 - (a) Slash actively used to protect soil from disturbance by equipment or to stabilize exposed soil, may be left in place, provided that no part thereof extends more than 4 feet above the ground.
 - (b) Within the Water Reservoirs Protection District:
 - (i) No accumulation of slash shall be left within 50 feet, horizontal distance, of the normal high-water line of a waterbody or watershed tributary stream, or the upland edge of a wetland; and
 - (ii) Between 50 feet and 250 feet, horizontal distance, of the normal high-water line of a waterbody or watershed tributary stream, or the upland edge of a wetland, all slash larger than 3 inches in diameter must be disposed of in such a manner that no part thereof extends more than 4 feet above the ground.
- (3) Timber harvesting and related activities must leave adequate tree cover and shall be conducted so that a well-distributed stand of trees is retained, in accordance with the following:
 - (a) **Within the Water Reservoirs Protection District the following standards apply:**
 - (i) Harvesting of no more than 40 percent of the total volume on each acre of trees 4.5 inches DBH or greater in any 10 year period is allowed. Volume may be considered to be equivalent to basal area;
 - (ii) A well-distributed stand of trees which is windfirm, and other vegetation including existing ground cover, must be maintained; and,
 - (iii) Within 75 feet, horizontal distance, of the normal high-water line of streams, watershed tributary streams and great ponds, and within 75 feet, horizontal distance, of the upland edge of a freshwater wetland, there must be no cleared openings in the forest canopy. At distances greater than 75 feet, horizontal distance, of the normal high-water line of a

great pond, stream, watershed tributary stream, or upland edge of a wetland, timber harvesting and related activities must not create single cleared openings in the forest canopy greater than 14,000 square feet in the forest canopy. Where such openings exceed 10,000 square feet, they must be at least 200 feet, horizontal distance, apart. Such cleared openings will be included in the calculation of total volume removal. Volume may be considered equivalent to basal area.

(b) **Within the Watershed Overlay Zone, the following standards apply:**

- (i) Harvesting of no more than 50 percent of the total volume on each acre of trees 4.5 inches DBH or greater in any 10 year period is allowed. Volume may be considered to be equivalent to basal area. The Planning Board may allow harvesting to exceed this limitation upon a clear showing, including a forest management plan signed by a Maine licensed professional forester, that such an exception is necessary for good forest management and it adequately protects water quality;
- (ii) Timber harvesting and related activities must not create single cleared openings in the forest canopy greater than one (1) acre. Where such openings exceed 30,000 square feet, they must be at least 100 feet, horizontal distance, apart; and,
- (iii) Harvesting openings in the forest canopy shall not cumulatively exceed 25% of the forest canopy cover on the lot in any 10-year period.

(4) **Skid trails, yards, and equipment operation.** This requirement applies to the construction, maintenance, and use of skid trails and yards in shoreland areas.

- (a) Equipment used in timber harvesting and related activities shall not use stream or watershed tributary stream channels as travel routes.
- (b) Skid trails and landing yards must be designed and constructed to prevent sediment and concentrated water runoff from entering a water body, watershed tributary stream, or wetland. Upon termination of their use, skid trails and landing yards must be stabilized with the construction of water bars, and by seeding and applying hay, straw, or erosion control mulch, as necessary to prevent sediment and concentrated water flow.
- (c) Skid trails must be located on soils that can support skidding equipment and skidding of trees must cease when rains or thaws make soils unable to support equipment. Skid trails must not be located on slopes/grades steeper than 20% except when the ground is frozen or when the application of tree branches or other erosion control measures is sufficient for preventing runoff and erosion.
- (d) **Setbacks**
 - (i) Equipment must be operated to avoid the exposure of mineral soil within 75 feet, horizontal distance, of any water body, watershed tributary stream, or wetland. On slopes of 10 percent or greater, the setback for equipment operation must be increased by 20 feet, horizontal distance, plus an additional 10 feet, horizontal distance, for each 5 percent increase in slope above 10 percent. Where slopes fall away from the resource, no increase in the 25-foot setback is required.
 - (ii) Landing yards must be located a minimum of 100 feet, horizontal distance, from any water body, watershed tributary stream, or freshwater wetland, unless no other reasonable alternative exists, as determined by the **CEO/PB**, and upon clear showing

by the licensed professional forester that appropriate techniques will be used to prevent sedimentation of the water body, watershed tributary stream, or freshwater wetland.

- (5) **Land Management Roads.** Land management roads, including approaches to crossings of water bodies, watershed tributary stream channels, and freshwater wetlands, ditches and other related structures, must be designed, constructed, and maintained to prevent sediment and concentrated water runoff from directly entering the water body, watershed tributary stream or wetland. Surface water on or adjacent to water crossing approaches must be diverted through vegetative filter strips to avoid sedimentation of the watercourse or wetland. Because roadside ditches may not extend to the resource being crossed, vegetative filter strips must be retained or established for the full width of the minimum setback requirement as specified below.
- (a) Land management roads and associated ditches, excavation, and fill must be set back at least:
- (i) 200 feet, horizontal distance, from the normal high-water line of a great pond;
 - (ii) 100 feet, horizontal distance, from the normal high-water line of streams, watershed tributary streams, and freshwater wetlands;
- (b) The minimum 200 foot setback specified in Section 15(O-1)(5)(a)(i) above may be reduced to no less than 100 feet, horizontal distance, and the 100 foot setback specified in Section 15(O-1)(5)(a)(ii) above may be reduced to no less than 25 feet, horizontal distance, if, prior to construction, the landowner or the landowner's designated agent demonstrates to the Planning Board's satisfaction that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body, watershed tributary stream, or wetland. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body, watershed tributary stream or wetland. Such techniques must prevent any concentrated runoff into the vegetated buffer and the water body, watershed tributary stream, or wetland.
- (c) On slopes of 10 percent or greater, the land management road setback must be increased by at least 20 feet, horizontal distance, plus an additional 10 feet, horizontal distance, for each 5 percent increase in slope above 10 percent.
- (d) Ditches, culverts, bridges, dips, water turnouts and other water control installations associated with roads must be maintained on a regular basis to assure effective functioning. Drainage structures shall deliver a dispersed flow of water into an unscarified filter strip no less than the width indicated in the setback requirements in Section 15(O-1)(7). Where such a filter strip is impracticable, appropriate techniques shall be used to avoid sedimentation of the water body, watershed tributary stream, or wetland. Such techniques may include the installation of sump holes or settling basins, and/or the effective use of additional ditch relief culverts and ditch water turnouts placed to avoid sedimentation of the water body, watershed tributary stream, or wetland. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be immediately corrected.

- (e) **Road closeout and discontinuance.** Maintenance of the water control installations required in Section 15(O-1)(5)(d) must continue until use of the road is discontinued and the road is put to bed by effective installation of water bars or other adequate road drainage structures at appropriate intervals, constructed to avoid surface water flowing over or under the water bar, and extending a sufficient distance beyond the traveled way so that water does not reenter the road surface.
 - (f) **Upgrading existing roads.** Extension or enlargement of presently existing roads must conform to the provisions of Section 15(O-1). Any nonconforming existing road may continue to exist and to be maintained, as long as the nonconforming conditions are not made more nonconforming.
 - (g) **Exception.** Extension or enlargement of presently existing roads need not conform to the setback requirements of Section 15(O-1)(5)(a) if, prior to extension or enlargement, the landowner or the landowner's designated agent demonstrates to the Planning Board's satisfaction that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body, watershed tributary stream, or wetland. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body, watershed tributary stream, or wetland. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be immediately corrected.
 - (h) **Additional measures.** In addition to the foregoing minimum requirements, persons undertaking construction and maintenance of roads and stream and watershed tributary stream crossings must avoid sedimentation of surface waters.
- (6) **Crossings of waterbodies.** Crossings of streams and watershed tributary streams must allow for fish passage at all times of the year, must not impound water, and must allow for the maintenance of normal flows.
- (a) **Determination of flow.** Provided they are properly applied and used for the circumstances for which they are designed, methods including but not limited to the following are acceptable as a means of calculating the 10 year and 25 year frequency water flows and thereby determining water crossing sizes as required in Section 15(O-1): The United States Geological Survey (USGS) Methods; specifically: Hodgkins, G. 1999. Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals. U.S. Geological Survey. Water Resources Investigations Report 99-4008. 45 pp.
 - (b) **Upgrading existing water crossings.** Extension, replacement or enlargement of presently existing water crossings must conform to the provisions of Section 15(O-1). Any nonconforming existing water crossing may continue to exist and be maintained, as long as the nonconforming conditions are not made more nonconforming; however, any maintenance or repair work done below the normal high-water line must conform to the provisions of Section 15(O-1).
 - (c) **Other Agency Permits.** Any timber harvesting and related activities involving the design, construction, and maintenance of crossings on waterbodies other than a stream or watershed tributary stream may require a permit from the Department of Environmental Protection, or the US Army Corps of Engineers. Written notice of all water crossing construction, maintenance, alteration and replacement activities must be given to the

Bureau of Forestry prior to the commencement of such activities. Such notice must contain all information as specified in sub-section (e), below.

- (d) Any timber harvesting and related activities involving the design, construction, and maintenance of crossings of freshwater wetlands identified by the Department of Inland Fisheries and Wildlife as essential wildlife habitat require prior consultation with the Department of Inland Fisheries and Wildlife.
- (e) For each water crossing construction, maintenance, alteration and replacement activity, the applicant will provide the following information to the Code Enforcement Officer prior to the commencement of such activities:
 - (i) a map showing the location of all proposed permanent crossings;
 - (ii) the GPS location of all proposed permanent crossings;
 - (iii) for any temporary or permanent crossing that requires a permit from state or federal agencies, a copy of the approved permit or permits; and
 - (iv) a statement signed by the responsible party that all temporary and permanent crossings will be constructed, maintained, and closed out in accordance with the requirements of this Section.
- (f) **Water crossing standards.** All crossings of streams and watershed tributary streams may be constructed using temporary portable bridge structures, or a bridge or culvert for a land management road, or by a sufficient temporary placement of slash within watershed tributary streams, provided:
 - (i) concentrated water runoff does not enter the stream or watershed tributary stream;
 - (ii) sedimentation of surface waters is avoided;
 - (iii) there is no substantial disturbance of the bank, or stream or watershed tributary stream channel;
 - (iv) fish passage is not impeded; and,
 - (v) portable bridges are sized according to the requirements of Section 15(O-1)(6)(g), below, so that water flow is not unreasonably impeded.

Subject to Section 15(O-1)(6)(f)(i-v) above, skid trail crossings of streams and watershed tributary streams when channels of such streams and watershed tributary streams are frozen and snow-covered or are composed of a hard surface which will not be eroded or otherwise damaged are not required to use permanent or temporary structures. Removal of temporary slash crossings must occur immediately upon cessation of use of the crossing.

- (g) **Bridge and Culvert Sizing.** For crossings of stream and watershed tributary stream channels with a bridge or culvert, the following requirements apply:
 - (i) Bridges and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate 25 year frequency water flows or

with a cross-sectional area at least equal to 3 times the cross-sectional area of the stream, or watershed tributary stream channel.

- (ii) Temporary bridge and culvert sizes may be smaller than provided in Section 15(O-1)(6)(g)(i) if techniques are effectively employed such that in the event of culvert or bridge failure, the natural course of water flow is maintained and sedimentation of the stream or watershed tributary stream is avoided. Such crossing structures must be at least as wide as the channel and placed above the normal high-water line. Techniques may include, but are not limited to, the effective use of temporary skidder bridges or other temporary bridging structures.
- (iii) Culverts utilized in stream and watershed tributary stream crossings of land management roads must:
 - 1. Be installed at or below stream or tributary stream bed elevation;
 - 2. Be seated on firm ground;
 - 3. Have soil compacted at least halfway up the side of the culvert;
 - 4. Be covered by soil to a minimum depth of 1 foot or according to the manufacturer's specifications, whichever is greater, and
 - 5. Have a headwall at the inlet end which is adequately stabilized by riprap or other suitable means to reasonably avoid erosion of material around the culvert.
- (iv) Stream and watershed tributary stream crossings allowed under Section 15(O-1), but located in flood hazard areas (i.e. A zones) as identified on a community's Flood Insurance Rate Maps (FIRM) or Flood Hazard Boundary Maps (FHBM), must be designed and constructed under the stricter standards contained in that community's National Flood Insurance Program (NFIP). For example, a water crossing may be required to pass a 100-year flood event.
- (h) **Skid trail closeout.** Upon completion of timber harvesting and related activities, or upon the expiration of a Forest Operations Notification, whichever is earlier, the following requirements apply:
 - (i) Bridges installed for stream and watershed tributary stream crossings by skid trails must either be removed and areas of exposed soil stabilized, or upgraded to comply with the closeout standards for land management roads in Section 15(O-1)(6)(i) below.
 - (ii) Stream and watershed tributary stream channels, banks and approaches to crossings of water bodies and watershed tributary streams that were unexpectedly disturbed while crossing must be immediately stabilized on completion of harvest, or if the ground is frozen and/or snow-covered, as soon as practical after snowmelt.
- (i) **Land management road closeout.** Maintenance of the water control features must continue until use of the road is discontinued and the road is put to bed by taking the following actions:

- (i) Effective installation of water bars or other adequate road drainage structures at appropriate intervals, constructed to reasonably avoid surface water flowing over or under the water bar, and extending sufficient distance beyond the traveled way so that water does not reenter the road surface.
- (ii) Water crossing structures must be appropriately sized or dismantled and removed in a manner that avoids sedimentation of the stream or watershed tributary stream.
- (iii) Any bridge or water crossing culvert in roads to be discontinued shall satisfy one of the following requirements:
 - 1. it shall be designed to provide an opening sufficient in size and structure to accommodate 25 year frequency water flows;
 - 2. it shall be designed to provide an opening with a cross-sectional area at least 3½ times the cross-sectional area of the stream or watershed tributary stream channel; or
 - 3. it shall be dismantled and removed in a fashion to avoid sedimentation of the stream or watershed tributary stream.

If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be immediately corrected.

(7) Point Source Pollution Control. Harvesting operations must not unnecessarily release pollutants associated with petroleum use and human waste disposal. The following provisions apply to all timber harvesting operations within the Water Reservoirs Protection District and the Watershed Overlay Zone:

- (a) **Petroleum Products:** All equipment must be inspected for leaks prior to arrival and for the duration of their use. Inspections must be performed on all hydraulic components, fuel tanks and lines, engine, transmission and axles. Trucks, forwarders, skidders and other equipment that carry petroleum products must have a sufficient number of petroleum sorbent pads to contain a 10-gallon spill per machine on-site.

All petroleum products that are not in machine storage are stored in safe durable containers and removed from the operation site at the completion of each day. Petroleum storage is only allowed in tanks designed, manufactured, inspected, and certified for commercial use. No refueling or equipment servicing is allowed within 200 feet of a great pond, or within 100 feet of a stream, watershed tributary stream, or freshwater wetland.

(8) Definitions. Unless otherwise provided herein, this Section O-1 incorporates by reference the definitions contained in the Maine Forest Service Rules Chapter 20, “Forest Regeneration and Clearcutting Standards”, and Chapter 21, “Statewide Standards for Timber Harvesting and Related Activities in Shoreland Areas”.