

replacement of any heating oil tank. In emergency situations involving the replacement of a leaking or failed tank, the CEO shall be notified prior to the installation of the replacement tank.

**7.5.18.4.2.2** Any heating oil tank or interconnected system of oil tanks is limited to a maximum capacity of one thousand three hundred twenty (1,320) gallons unless the owner of the tank(s) has a Spill Retention, Control, and Countermeasures (SRCC) Plan that has been approved by the Maine DEP or the U.S. EPA and the approved plan is on file with the CEO and the Boothbay Fire Department.

**7.5.18.4.2.3** All new or replacement heating oil tanks shall be double-walled or secondary containment tanks approved by the Maine DEP for use in a wellhead protection district unless the CEO determines that the physical characteristics of an existing structure do not allow the installation of a tank meeting these requirements.

**7.5.18.4.2.4** Any new or existing heating oil tank that is located outside of a building or structure must comply with the regulations of Maine Fuel Board for protection against snow and ice damage and must be located on a support system meeting the state requirements.

**7.5.18.4.3 Water Supply Buffers:** Any land use activity or development that creates more than one thousand (1000) square feet of impervious surface area in any five (5) year period shall conform to the water supply buffer requirements of XXX.

**7.5.18.4.4 Chlorides Management Plan:** Any nonresidential development or subdivision that creates more than five thousand (5,000) square feet of impervious surface in any five (5) year period shall submit a chlorides management plan meeting the requirements of XXX as part of the application for the approval of the activity.

**7.5.18.4.5 Open Space Subdivisions:** Any residential subdivision or modification to an existing residential subdivision that creates five (5) or more lots in any five (5) year period shall be designed and developed as an “Open Space Subdivision” in accordance with the standards of XXX.

**7.5.18.4.6 Timber Harvesting:** Timber harvesting within the WPO District is subject to regulation by the Town in accordance with the following standards.

**7.5.18.4.6.1 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.

**7.5.18.4.6.2 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. This section does not apply to minor, incidental amounts of slash that result from timber harvesting and related activities otherwise conducted in compliance with this section.

**7.5.18.4.6.2.1** 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.

**7.5.18.4.6.3** 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:

**7.5.18.4.6.3.1** Harvesting of no more than fifty (50) percent of the total volume on each acre of trees 4.5 inches DBH or greater in any ten (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;

**7.5.18.4.6.3.2** Timber harvesting and related activities must not create single cleared openings in the forest canopy greater than one (1) acre. Where such openings exceed thirty thousand (30,000) square feet, they must be at least one hundred (100) feet, horizontal distance, apart; and,

**7.5.18.4.6.3.3** Harvesting openings in the forest canopy shall not cumulatively exceed twenty-five (25) percent of the forest canopy cover on the lot in any 10-year period.

**7.5.18.4.6.4 Skid trails, yards, and equipment operation.** This requirement applies to the construction, maintenance, and use of skid trails and yards.

**7.5.18.4.6.4.1** Equipment used in timber harvesting and related activities shall not use stream or watershed tributary stream channels as travel routes.

**7.5.18.4.6.4.2** 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.

**7.5.18.4.6.4.3** 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 twenty (20) percent 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.

#### **7.5.18.4.6.4.4 Setbacks**

**7.5.18.4.6.4.4.1** Equipment must be operated to avoid the exposure of mineral soil within seventy-five (75) feet, horizontal distance, of any water body, watershed tributary stream, or wetland. On slopes of ten (10) percent or greater, the setback for equipment operation must be increased by twenty (20) feet, horizontal distance, plus an additional ten (10) feet, horizontal distance, for each five (5) percent increase in slope above ten (10) percent. Where slopes fall away from the resource, no increase in the 25-foot setback is required.

**7.5.18.4.6.4.4.2** Landing yards must be located a minimum of one hundred (100) feet, horizontal distance, from any water body, watershed tributary stream, or freshwater wetland, unless no other reasonable alternative exists, as determined by the Planning Board 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.

**7.5.18.4.6.5 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.

**7.5.18.4.6.5.1** Land management roads and associated ditches, excavation, and fill must be set back at least:

**7.5.18.4.6.5.1.1** Two hundred (200) feet, horizontal distance, from the normal high-water line of a great pond;

**7.5.18.4.6.5.1.2** One hundred (100 feet), horizontal distance, from the normal high-water line of streams, watershed tributary streams, and freshwater wetlands;

**7.5.18.4.6.5.2** The minimum two hundred (200) foot setback specified in Section **7.5.18.4.6.5.2.1** above may be reduced to no less than one hundred (100) feet, horizontal distance, and the one hundred (100) foot setback specified in Section **7.5.18.4.6.5.2.2** above may be reduced to no less than twenty-five (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.

**7.5.18.4.6.5.3** On slopes of ten (10) percent or greater, the land management road setback must be increased by at least twenty (20) feet, horizontal distance, plus an additional ten (10) feet, horizontal distance, for each five (5) percent increase in slope above ten (10) percent.

**7.5.18.4.6.5.4** 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 **7.5.18.4.6.5**. 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.

**7.5.18.4.6.5.5 Road closeout and discontinuance.** Maintenance of the water control installations required in **7.5.18.4.6.5.4** 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.

**7.5.18.4.6.5.6 Upgrading existing roads.** Extension or enlargement of presently existing roads must conform to the provisions of this section. Any nonconforming existing road may continue to exist and to be maintained, as long as the nonconforming conditions are not made more nonconforming.

**7.5.18.4.6.5.7 Exception.** Extension or enlargement of presently existing roads need not conform to the setback requirements of **7.5.18.4.6.5.1** 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.

**7.5.18.4.6.5.8 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.

**7.5.18.4.6.6 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.

**7.5.18.4.6.6.1 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 ten (10) year and twenty-five (25) year frequency water flows and thereby determining water crossing sizes as required in this section: 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.

**7.5.18.4.6.6.2 Upgrading existing water crossings.** Extension, replacement or enlargement of presently existing water crossings must conform to the provisions of this section. 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 this section.

**7.5.18.4.6.6.3 Bureau of Forestry Permits and Permit by Rule**

**7.5.18.4.6.6.3.1 Permits.** An application for a permit must be submitted to the Bureau of Forestry at least 60 days prior to the construction of any new permanent crossing or the replacement of a permanent crossing of any waterbody, non-forested freshwater wetland larger than 4,300 square feet and any crossing that will not conform to the Bureau's permit by rule standards. An individual permit application is required for each crossing. The permit application must contain all information required by the Bureau, including a description of how negative impacts to the resource will be avoided and minimized to the extent practicable. When granting a permit the Bureau may impose such reasonable terms and conditions as the Bureau considers appropriate in order to satisfy the purpose set forth in its governing statutes and rules.

**7.5.18.4.6.6.3.2 Permit by Rule.** Crossings must conform to standards of this section to qualify for permit by rule. If a crossing does not conform to these standards an application for a full permit must be submitted per Section 7.5.18.4.6.6.3.1, above. A permit by rule must be submitted to the Bureau of

Forestry prior to construction, maintenance, alteration, and replacement of permanent crossings of waterbodies subject to a 75' shoreland area or adjacent shoreland area defined by the Bureau's rules, except all non-forested wetlands greater than 4,300 square feet which require a permit as described in Section 7.5.18.4.6.6.3.1. Multiple crossings may be submitted on one permit by rule form. The permit by rule must contain all information required by the Bureau, including:

7.5.18.4.6.6.3.2.1 a map showing the location of all proposed permanent crossings. Maps must be of sufficient quality and scale for a person unfamiliar with the area to locate the crossing;

7.5.18.4.6.6.3.2.2 for any temporary or permanent crossing that requires a permit from state or federal agencies, a copy of the approved permit or permits; and,

7.5.18.4.6.6.3.2.3 a statement signed by the permit applicant that all temporary and permanent crossing will be constructed, maintained, and closed out in accordance with the requirements of this chapter.

**7.5.18.4.6.6.3.3 Exception.** A permit or permit by rule is not required for the repair and maintenance of an existing crossing or for the replacement of an existing crossing, including ancillary crossing installation activities such as excavation and filling, in any protected natural resource area. Repair and maintenance includes but is not limited to the riprapping of side slopes or culvert ends; removing debris and blockages within the crossing structure and at its inlet and outlet; and installing or replacing culvert ends if less than 50% of the crossing structure is being replaced. This provision applies as long as:

7.5.18.4.6.6.3.3.1 Erosion control measures are taken to prevent sedimentation of the water;

7.5.18.4.6.6.3.3.2 The crossing does not block fish passage for fish in the protected natural resource area;

7.5.18.4.6.6.3.3.3 For replacement crossings of a stream or brook;

7.5.18.4.6.6.3.3.3.1 The replacement crossing is designed, installed and maintained to match the natural stream grade to avoid drops or perching; and

7.5.18.4.6.6.3.3.3.2 As site conditions allow, crossing structures that are not open bottomed are embedded in the stream bottom at least 25% of the culvert or other structure's diameter, except that a crossing structure does not have to be embedded more than 2 feet.

7.5.18.4.6.6.3.3.4 The Bureau of Forestry is notified prior to the activity in accordance with Section 7.5.18.4.6.6.5 of this Ordinance.

**7.5.18.4.6.6.4 Other Agency Permits.**

7.5.18.4.6.6.4.1 Any timber harvesting and related activities involving the design, construction, and maintenance of crossings on waterbodies other than a stream or watershed tributary stream, including crossings of freshwater wetlands identified by the Department of Inland Fisheries and Wildlife as significant wildlife habitat or essential wildlife habitat, may require a permit from the Department of Environmental Protection, or the US Army Corps of Engineers. When a permit is required, the crossing is not required to meet the standards of this section provided it conforms with all applicable state and federal requirements and any permit conditions. 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 **7.5.18.4.6.6.5** below.

7.5.18.4.6.6.4.2 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.

~~7.5.18.4.6.6.4~~ 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.

**7.5.18.4.6.6.5 Notice to Bureau of Forestry and Code Enforcement Officer**  
Notification to the Bureau of Forestry and Code Enforcement Officer is required prior to construction, maintenance, alteration, and replacement of crossings. Written notice of all temporary and permanent water body crossing construction, maintenance, alteration, and replacement activities must be given to the Bureau and Code Enforcement Officer prior to the commencement of such activities. Multiple crossings may be submitted on one notification form. For each water crossing construction, maintenance, alteration and replacement activity, the applicant will provide the following information to the Bureau and Code Enforcement Officer prior to the commencement of such activities:

**7.5.18.4.6.6.5.1** a map showing the location of all proposed permanent crossings.  
Maps must be of sufficient quality and scale for a person unfamiliar with the area to locate the crossing;

**7.5.18.4.6.6.5.2** the GPS location of all proposed permanent crossings;

**7.5.18.4.6.6.5.3** for any temporary or permanent crossing that requires a permit from state or federal agencies, a copy of the approved permit or permits; and

**7.5.18.4.6.6.5.4** 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.

**7.5.18.4.6.6.6 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 the construction or placement of a temporary pole ford within watershed tributary streams, provided:

**7.5.18.4.6.6.6.1** concentrated water runoff does not enter the stream or watershed tributary stream;

**7.5.18.4.6.6.6.2** sedimentation of surface waters is avoided;

**7.5.18.4.6.6.6.3** there is no substantial disturbance of the bank, or stream or watershed tributary stream channel;

**7.5.18.4.6.6.6.4** fish passage is not impeded; and,

**7.5.18.4.6.6.6.5** portable bridges are sized according to the requirements of **7.5.18.4.6.6.7**, below, so that water flow is not unreasonably impeded.

Subject to **7.5.18.4.6.6.6.1-5** 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 pole fords must occur immediately upon cessation of use of the crossing.

**7.5.18.4.6.6.7 Bridge and Culvert Sizing.** For crossings of stream and watershed tributary stream channels with a bridge or culvert, the following requirements apply:

**7.5.18.4.6.6.7.1** Bridges and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate twenty-five (25) year frequency water flows or with a cross-sectional area at least equal to three (3) times the cross-sectional area of the stream, or watershed tributary stream channel.

**7.5.18.4.6.6.7.2** Temporary bridge and culvert sizes may be smaller than provided in **7.5.18.4.6.6.7.1** 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.

**7.5.18.4.6.6.7.3** Culverts utilized in stream and watershed tributary stream crossings of land management roads must:

**7.5.18.4.6.6.7.3.1** Be installed at or below stream or tributary stream bed elevation;

**7.5.18.4.6.6.7.3.2** Be seated on firm ground;

**7.5.18.4.6.6.7.3.3** Have soil compacted at least halfway up the side of the culvert;

**7.5.18.4.6.6.7.3.4** Be covered by soil to a minimum depth of 1 foot or according to the manufacturer's specifications, whichever is greater, and

**7.5.18.4.6.6.7.3.5** 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.

**7.5.18.4.6.6.7.4** Stream and watershed tributary stream crossings allowed under this section, 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.

**7.5.18.4.6.6.7.5** Skid trail crossings, other than those areas below the normal high water line of water bodies, must avoid freshwater wetlands and must maintain the existing hydrology of such wetlands, unless there are no reasonable alternatives, as determined by the Bureau of Forestry in a written decision prior to construction.

**7.5.18.4.6.6.8** **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:

**7.5.18.4.6.6.8.1** 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 **7.5.18.4.6.7.9** below.

**7.5.18.4.6.6.8.2** 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.

**7.5.18.4.6.6.9 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:

**7.5.18.4.6.6.9.1** 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.

**7.5.18.4.6.6.9.2** Water crossing structures must be appropriately sized or dismantled and removed in a manner that avoids sedimentation of the stream or watershed tributary stream.

**7.5.18.4.6.6.9.3** Any bridge or water crossing culvert in roads to be discontinued shall satisfy one of the following requirements:

**7.5.18.4.6.6.9.3.1** it shall be designed to provide an opening sufficient in size and structure to accommodate twenty-five (25) year frequency water flows;

**7.5.18.4.6.6.9.3.2** 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

**7.5.18.4.6.6.9.3.3** 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.

**7.5.18.4.6.7 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 Protection Overlay Zone:

**7.5.18.4.6.7.1 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.

**7.5.18.4.6.8 Definitions.** Unless otherwise provided herein, this section 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”.

#### **7.5.19 Bigelow Laboratory District (BL)**

The Bigelow Laboratory District is a contract zone established by the Town on May 24, 2006. The details of the district including the allowed uses and development standards are set forth in the Bigelow Laboratory for Ocean Sciences – Contract Zoning Agreement and subsequent addendums to the agreement all of which are part of this ordinance. The agreement is contained in the Appendix to this ordinance.