

WAC 222-24-020 Road location and design. (1) **Fit the** road to the topography so that a minimum of alterations to the natural features will occur.

*(2) Except for crossings, new stream-adjacent parallel roads shall not be located within natural drainage channels, channel migration zones, sensitive sites, equipment limitation zones, and riparian management zones when there would be substantial loss or damage to fish or wildlife habitat unless the department has determined that other alternatives will cause greater damage to public resources. Proposals with new stream-adjacent parallel roads will require an on-site review by an interdisciplinary team. The appropriate federal representative(s) will be invited to attend the interdisciplinary team to determine if the proposal is in compliance with the Endangered Species Act.

*(3) Roads shall not be constructed in bogs or low nutrient fens.

*(4) Roads shall not be located in wetlands if there would be substantial loss or damage to wetland functions or acreage, unless the department has determined that alternatives will cause greater damage to public resources.

*(5) Minimize the number of stream crossings.

*(6) Where stream crossings are necessary:

(a) Design stream crossings to minimize alterations to natural features;

(b) Locate and design culverts to minimize sediment delivery;

(c) Whenever practical, cross streams at right angles to the main channel; and

(d) Design stream crossings in Type S and F Waters so as not to impede fish passage at any life stage.

*(7) Avoid duplicative roads by keeping the total amount of construction to a minimum. Use existing roads whenever practical and avoid isolating patches of timber which, when removed, may require unnecessary road construction.

*(8) All new road construction on side slopes that exceed sixty percent, which have the potential to deliver sediment to any typed water or wetland must utilize full bench construction techniques, including end hauling, over hauling or other special techniques. The department may waive the full bench construction requirement if a site review is conducted and the absence of delivery potential to any typed water or wetlands is determined.

(9) Use the minimum design standard that produces a road sufficient to carry the anticipated traffic load with reasonable safety.

*(10) Subgrade width should average not more than thirty-two feet for double lane roads and twenty feet for single lane roads, exclusive of ditches, plus any additional width necessary for safe operations on curves and turnouts. Where road location in wetlands is unavoidable (see WAC 222-24-015 (1)(b)), minimize subgrade width.

(11) Balance excavation and embankments so that as much of the excavated material as is practical will be deposited in the roadway fill sections. Where full bench construction is necessary, design suitable embankments so that the excavated material may be end hauled to appropriate deposit areas.

(12) Cut and fill slopes must be designed and constructed in a manner that will assure a high likelihood of remaining stable throughout the life of the road.

*(13) All roads shall be outsloped or ditched on the uphill side and appropriate surface drainage shall be provided by the use of adequate drainage structures such as: Cross drains, ditches, drivable

dips, relief culverts, water bars, diversion ditches, or other such structures demonstrated to be equally effective.

*(14) Drainage structures shall not discharge onto erodible soils, or over fill slopes unless adequate outfall protection is provided.

*(15) Relief culverts installed on forest roads shall meet the following minimum specifications: (See board manual section 3 for culvert spacing.)

(a) Be at least eighteen inches in diameter or equivalent in western Washington and fifteen inches in diameter or equivalent in eastern Washington.

(b) Be installed in a manner that efficiently captures ditchline flow and passes it to the outside of the road.

*(16) Ditch diversion. Where roadside ditches slope toward any typed water, or Type A or B Wetland, a ditch relief structure must be located as close to the stream crossing or wetland as possible so it drains off before reaching the stream. On stream-adjacent parallel roads, relief culverts shall be located at maximum distances from stream channels to minimize sediment delivery. The relief structure must allow the sediment to be deposited onto the forest floor and not carry surface water or sediment into the stream channel or wetland.

*(17) Outslope the road surface where practical. Where outsloping is not practical, provide a ditch with drainage structure on the inside of the road, except where roads are constructed in rock or other materials not readily susceptible to erosion.

*(18) Crown or slope the road to prevent the accumulation of water on the road surface.

*(19) Install rock armor headwall inlets on all stream-crossing culverts where the stream gradient above the crossing is greater than six percent.

*(20) Install rock armored headwalls and rock armored ditchblocks for drainage structure culverts located on erodible soils or where the affected road has a gradient greater than six percent.

*(21) Install drainage structures at locations where seeps and springs are known or discovered during construction to route accumulated surface water across the road prism. The water from the seeps and springs must be returned to the forest floor as close to the point of origin as reasonably practicable.

*(22) In addition to information required for a complete application, the department may require more detailed information for proposed road construction, including:

(a) A map with detailed topographic information showing the location and alignment of the road in relation to all typed water and wetlands as required in WAC 222-16-035;

(b) Location, size, alignment and number of water crossing and drainage structures;

(c) Detailed site plans and designs for fish passage projects, bridges, and large culverts or other complex elements of the proposal; and

(d) Other information identified by the department.

[Statutory Authority: RCW 76.09.040(3). WSR 13-21-032, § 222-24-020, filed 10/8/13, effective 12/30/13. Statutory Authority: Chapter 34.05 RCW, RCW 76.09.040, [76.09.]050, [76.09.]370, 76.13.120(9). WSR 01-12-042, § 222-24-020, filed 5/30/01, effective 7/1/01. Statutory Authority: RCW 76.09.040, 76.09.050 and chapter 34.05 RCW. WSR 92-15-011, § 222-24-020, filed 7/2/92, effective 8/2/92. Statutory Au-

thority: RCW 76.09.040. WSR 87-23-036 (Order 535), § 222-24-020, filed 11/16/87, effective 1/1/88. Statutory Authority: RCW 76.09.040 and 76.09.050. WSR 82-16-077 (Resolution No. 82-1), § 222-24-020, filed 8/3/82, effective 10/1/82; Order 263, § 222-24-020, filed 6/16/76.]