

Chapter 21A-24  
Rules and Regulations of the  
Department of Development and Environmental Services

Sensitive Areas: Maintenance of Agricultural  
Ditches and Streams Used by Salmonids

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**21A-24-370 Definitions**

A. Agricultural Ditch or Ditch. "Agricultural ditch" or "ditch" means a natural or artificial watercourse used for conveying water away from agricultural fields. Under

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- K.C.C. 21A.06.1240, any natural or artificial watercourse used by salmonids is defined as a stream.
- B. Department. "Department" means the Department of Development and Environmental Services of King County.
  - C. Excavation. "Excavation" means the removal of any silt, sediment, rock, natural soil, organic material, fill or any combination thereof.
  - D. Historic Grade. "Historic Grade" means the depth or grade of the ditch prior to its filling with sediment.
  - E. Maintenance. "Maintenance" means those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition, without any expansion of, or significant change from, that originally established condition. Maintenance may also include habitat enhancement.
  - F. Temporary Stockpiles of Excavation Spoils. "Temporary stockpiles of excavation spoils" means excavation spoils that are stored on site until they are spread on the agricultural fields.

**21A-24-371 Purpose.** It is the purpose of these rules to implement the provisions of K.C.C. 21A.24.370.M, or its successor subsection, by prescribing standards and establishing best management practices for maintaining agricultural ditches that are used by salmonids.

**21A-24-372 Applicability.** A. Except as otherwise provided in subsection B. of this section, these Public Rules apply to agricultural ditch maintenance activities in ditches that are used by salmonids. These rules do not apply to agricultural ditch maintenance activities in ditches that are not used by salmonids.

B. The department may waive any or all of the requirements of these rules, except for the requirement to obtain a clearing and grading permit, if a proposed maintenance activity for a ditch will be conducted pursuant to a statistically valid scientific research project. The research project must be designed to evaluate the effects of different maintenance activities on salmonids and salmonid habitat. The goal of the research project shall also be to establish long term maintenance standards and best

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management practices for ditches used by salmonids that will provide the maximum degree of protection for salmonids possible. The department shall consult with the Washington department of fish and wildlife, appropriate federal agencies, and affected tribes before authorizing an exemption or partial exemption from these rules.

**21A-24-373 Permits.** A. A clearing and grading permit is required for maintenance activities governed by these rules.

B. The clearing and grading permit shall meet the application requirements of K.C.C. 20.20.040. The application shall include a site plan that, at a minimum, provides the following information:

1. General vicinity of the project;
2. Legal description of the property;
3. Horizontal and vertical scale;
4. Limits of clearing and grading;
5. Existing and proposed contours;

6. At least two cross sections per stream segment of the study area, one in each direction, showing existing and proposed contours and horizontal and vertical scales.

Identify the vertical distance between the historic grade and current grade. When the historic grade is unknown, the vertical distance shall be determined on a site specific basis;

7. Location of temporary spoils stockpiles;
8. Location of surface and subsurface drainage devices, including field drains, in the project area; and
9. Detailed Erosion control plans prepared in accordance with Appendix D to the Surface Water Design Manual and Public Rule 21A-24-381, including construction sequence and timing, perimeter control measures, interim drainage and temporary cover measures. Provide a detailed, site specific dewatering and fish protection plan prepared in accordance with provisions of 21A-24-375 through 378 and a detailed spill prevention and control plan in accordance with 21A-24-384.

C. In addition to the application requirements of K.C.C. 20.20.040, the department may require the following information:

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1. A detailed habitat mitigation plan consistent with 21A-24-383. This plan shall consider the environmental characteristics identified in 21A-24-382 and shall include the type, size, spacing, location and quantity of plants and the size, number and location of large woody debris (LWD) and small woody debris (SWD), if plants and woody debris are proposed.

2. USDA Natural Resources Conservation Services (NRCS) or King Conservation District (KCD) specifications for the ditch excavation, including, but not limited to, width, depth and side wall construction and meander, pool and alcove design and historic documentation, if available.

3. Stream survey including documentation of fish use and habitat features. Section 21A-24-013 of the King County Department of Development and Environmental Services Public Rule, "Sensitive Areas: Presumption of Salmonids, Sensitive Area and Buffer Modifications, and Mitigation Requirements" establishes standards for when the department will presume salmonid use if actual salmonid use is unknown. The Public Rule provides a process for a rebuttal of the presumption of salmonid use. This Public Rule became effective May 4, 2000.

D. An application for a clearing and grading permit for maintenance of an agricultural ditch shall be submitted no later than March 1 for maintenance to be done during that calendar year. This deadline may be waived for applications to be considered for the 2001 calendar year.

E. Activities conducted according to these Public Rules may require other local, state or federal permits, including, but not limited to, a Washington State Hydraulics Project Approval (HPA) or a U.S. Army Corps of Engineers 404 or Section 10 permit.

F. These rules do not authorize any violation of any provisions of the Endangered Species Act as set forth at 16 U.S.C. §§ 1531 - 1543, including the prohibition on the "take" of threatened or endangered species. "Take" is defined at 16 U.S.C. § 1532 (19). Compliance with these Public Rules does not ensure compliance with the Endangered Species Act.

G. If the department determines, after reviewing the materials submitted by the applicant, that the proposed project may lead to the "take" of threatened or endangered

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species, the applicant must provide the department with documentation that the take has been permitted. "Take" may be permitted through the issuance of an Endangered Species Act (ESA) Section 10(a)(1)(B) permit or a Section 7 Incidental Take Statement. The department will not issue a clearing and grading permit for maintenance of an agricultural ditch until after the applicant provides the department with this documentation.

**21A-24-374 Best Management Practices - Timing.** A. Except as otherwise provided in subsections B. through D. of this section, all agricultural ditch maintenance activities shall be conducted between July 15 and September 15.

B. The department may extend the period to October 15 if it determines, in writing, that:

1. The flow in the ditch remains at low levels;
2. The presence of salmonids is at or below the low numbers present during the originally prescribed time period; and
3. There is no increased risk to salmonids or their habitat as a result of extending the period; and

C. The department may authorize maintenance activities at another time if it determines that there is no increased risk to salmonids or their habitat. If the determination is based on a written study prepared by an entity other than the Washington Department of Fish and Wildlife, the department shall confer with that agency prior to authorizing maintenance activities at other times. The determination shall:

1. Be based on and supported by a written study:
  - a. Particular to the basin or subbasin, or portion thereof, in which the activities are to occur, and the study was conducted and prepared by the Washington Department of Fish and Wildlife, federally recognized tribe or county agency that has natural resource management as its primary function; or
  - b. Prepared by the National Marine Fisheries Service or U.S. Fish and Wildlife Service; or

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2. Be consistent with the time frame outlined in the Washington State Hydraulics Project Approval (HPA) for the proposed ditch maintenance.

D. During an emergency that threatens the public health, safety and welfare, the timing restriction shall not apply. The director shall confirm that an emergency exists. The department shall notify the Washington Department of Fish and Wildlife, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service of the emergency so they may ensure that appropriate emergency permits are also requested from those agencies.

**21A-24-375 Best Management Practices - Fish Protection Measures - Fish Removal.**

A. Immediately prior to any excavation or de-watering in a ditch, the salmonids shall be removed from the maintenance area. A valid scientific collector's permit is required for fish removal. Scientific collector's permits are issued by the Washington Department of Fish and Wildlife and appropriate federal agencies.

B. Fish removal shall be in accordance with the scientific collector's permit. If the permit does not specify the method, fish removal shall be according to the following procedure:

1. If diversion dams are not required to be installed, the portion of the stream to be maintained shall be block-netted to prevent fish entry;

2. Fish trapping is the preferred method for fish removal. Fish relocation by electrofishing may be performed if no other fish removal techniques are feasible due to local site constraints. Electrofishing activities shall be performed as described in "Backpack Electrofisher Guidelines, NMFS, December 1998" or future amendments and in accordance with the conditions of the HPA and the Scientific Collector's permit;

3. Salmonids shall be removed to a location upstream of the diversion dams or block nets unless the Washington Department of Fish and Wildlife authorizes the salmonids to be placed downstream of the diversion dams or block nets or in a temporary holding tank. The department may authorize

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the salmonids to be placed downstream of the diversion dams or block nets or in a tank if it finds, in writing, that:

a. This placement will provide equivalent or better protection for the salmonids; and

b. There is no other practical alternative place for the salmonids; and

4. The department may prescribe modifications to this procedure or authorize an alternative procedure if it determines, in writing, that the modifications or alternative procedure will provide a greater level of salmonid protection.

**21A-24-376 Best Management Practices - Fish Protection**

**Measures - Down-stream Protection.** A. Temporary silt fences shall be installed perpendicular to the water flow down-stream of any maintenance activity to protect down-stream watercourses from deposition from suspended sediments as a result of the permitted activity. Installation shall be consistent with King County Erosion and Sediment Control Standards.

B. Prior to the removal of any silt fence, the silt shall be removed from behind the silt fence to the greatest extent possible.

C. All silt fences shall be removed within two days of completing the maintenance activity.

D. If annual contour ditches for runoff from row crops are used in the field, silt fences shall be installed between the seasonal ditches and the next adjacent ditch project to protect downstream fish against erosion from high runoff. In those areas where field rows drain directly to a ditch without passing through a vegetated buffer adjacent to the ditch, a silt fence shall be installed along the edge of the ditch. Installation shall be consistent with the King County Erosion and Sedimentation Control Standards.

E. In extremely limited cases, instream sediment traps may be allowed as a temporary erosion and sediment control measure if the USDA Natural Resources Conservation Service or the King Conservation District determines the sediment load exceeds the carrying capacity of the ditch in its most efficient configuration. The upstream end of the excavation

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shall not exceed a final grade of a six inch drop for every ten feet to avoid headcutting the channel further upstream. The downstream end shall be configured to ensure a low flow channel that insures passage of fish. Sediment traps shall be maintained as needed during the seasonal timing identified for that ditch. The sediment trap shall only be permitted until the upstream sediment source can be adequately addressed.

**21A-24-377 Best Management Practices - Fish Protection**

**Measures - Diversion Dams.** A. Diversion dams shall be installed on both ends of and encompassing the maintenance activity in any ditch with water flowing at the time of the activity for the purpose of stopping flow through the activity area.

B. Diversion dams shall be constructed in a manner to prevent any water from entering the activity area. To achieve this standard, dams may be constructed of sandbags for higher velocity flows, straw bales or fences covered with impermeable fabric for lower velocity flows or other similar materials. If impermeable fences are used, they shall be installed with sufficient subsurface footing to seal the ditch.

C. The following procedure shall be used to determine the presence of flowing water:

1. A mark shall be made to identify the original water level of the ditch;

2. A silt fence or straw bale covered with impermeable fabric shall be installed in the ditch as a blockage to determine whether water backs up behind and eventually over the fence or bale; and

3. Two hours after installing the fence or bale, a measurement shall be taken to determine any rise in water level. If the measurement shows an increase in water level from the original water level, the increase shall constitute evidence of flowing water, requiring the installation of diversion dams pursuant to this section.

**21A-24-378 Best Management Practices - Fish Protection**

**Measures - Flow Bypass.** A pipe shall be installed above the



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upstream diversion dam to collect water from and divert it around the maintenance activity area. The pipe shall be large enough to carry the existing flow. If water backs up behind the upstream diversion dam due to an inadequate slope, a pump shall be used to convey water around the activity area. The pump intake shall be screened in accordance with criteria established by Washington Department of Fish and Wildlife to keep salmonids from being drawn into the pump.

**21A-24-379 Best Management Practices - Excavation**

**Standards.** A. Excavation shall start at the highest elevation of the ditch and proceed downstream. The department may authorize excavation to start at another elevation if it determines the alternative will provide the same level of protection to the ditch. The upstream end of the excavated portion of the ditch shall not exceed a final grade of a six inch drop for every ten feet. Where the existing gradient exceeds three percent and there is a bed of nine inches or greater of sorted gravel, the department shall determine if and how excavation can occur in a manner protective of any existing spawning habitat;

B. The width, depth and side walls of the excavation shall be configured consistent with requirements determined for the site conditions by the USDA Natural Resources Conservation Service or the King Conservation District, provided that:

1. The bottom width shall be the size necessary to convey the sediment load through the ditch with minimum deposition;

2. The depth shall not exceed the historic grade of the ditch or stream except where necessary to achieve the standard in subsection B.1. or as provided in subsections E. and F.; and

3. The side walls shall not be of a steepness that allows sloughing of soil from the sides;

C. When the existing bottom width exceeds the width determined to comply with subsection B.1., a channel that meanders between the existing side walls of the ditch shall be excavated to achieve the channel width and meander

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amplitude necessary to convey the sediment load. The USDA Natural Resources Conservation Service or the King Conservation District shall determine the necessary bottom width and meander amplitude;

D. When the channel configuration determined under subsection C. exceeds the width of the existing side walls of the ditch, a channel that meanders across and beyond the existing side walls of the ditch shall be excavated to achieve the width and meander amplitude necessary to convey the sediment load. The meanders may extend past the existing side walls of the ditch only in those areas adjacent to the ditch not in existing agricultural use. The USDA Natural Resources Conservation Service or the King Conservation District shall determine the necessary bottom width and meander amplitude;

E. Pools within the channel of the ditch shall be excavated consistent with requirements determined for the site conditions by the USDA Natural Resources Conservation Service or the King Conservation District, provided that:

1. Pools may be excavated below the historic grade of the ditch for the purpose of adding habitat complexity or for the provision of additional sediment capacity where sediment loadings are higher than can be conveyed by the ditch's and stream's flow;

2. The upstream end of the excavated portion of the pool shall not exceed a final grade of a six inch drop for every ten feet unless:

a. The pool is located in a low gradient, low velocity location; or

b. The upstream edge is resistant to erosion due to the placement of large woody debris or other hard materials acceptable to the department; and

3. The down-stream end of the excavated portion of the pool shall be configured to ensure a low-flow channel that allows passage of fish; and

F. Alcoves off of the channel shall be excavated consistent with requirements determined for the site conditions by the USDA Natural Resources Conservation Service or the King Conservation District, provided that alcoves may be excavated below the historic grade of the

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ditch or at the outlets of existing drain tiles only for adding:

1. Habitat complexity, or
2. Additional sediment capacity where sediment loadings are higher than can be conveyed by the ditch's flow.

**21A-24-380 Best Management Practices - Excavation Spoils Placement.**

A. Excavation spoils taken from a ditch and stream shall not be placed within a sensitive area or its buffer except that they may be spread evenly in a thin layer across a field in current agricultural use at least twenty-five feet from the edge of any ditch or waterbody.

Excavation spoils shall otherwise be immediately removed to an off-site legal disposal area.

B. Temporary stockpiles of excavation spoils to be spread on fields may remain at the site for up to nine months if covered, seeded or silt-fenced within one week to control erosion and located:

1. As far as practical from the ditch as the operating machinery will allow but in no case closer than the edge of any existing vegetated strip immediately adjacent to fields in existing agricultural use; and

2. To not divert or impede flood flows within a flood hazard area.

**21A-24-381 Best Management Practices - Erosion Control Standards.**

A. Existing vegetation shall be retained on the side walls of the ditch to the maximum extent possible;

B. Existing vegetation alongside the ditch in areas not in existing agricultural use shall be retained, and existing vegetation alongside the ditch in areas in existing agricultural use shall be retained to the maximum extent practical; and

C. All areas above the ordinary high water mark (OHWM) on the side walls of the ditch and in areas alongside the ditch that are disturbed or have exposed soil shall be stabilized by reseeding or replanting. Seed mixes shall be consistent with the Surface Water Design Manual standards or those approved by the USDA Natural Resources Conservation

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Service or the King Conservation District, provided that seed mixes shall not contain invasive species. Hydroseeding shall be the preferred method of reseeding; however, hand-seeding and mulching may be used. The reseeding requirement of this subsection shall not apply to areas alongside ditches that are in existing agricultural uses.

**21A-24-382 Best Management Practices - Mitigation.** The department shall assess available data and information to determine the level of mitigation for each individual proposed project. The following environmental characteristics should be considered by staff biologists or ecologists:

- A. Salmonid use of project area (e.g., spawning, rearing habitat, small residential populations, none, etc.);
- B. Downstream blockages to fish passage (e.g., natural barriers, artificial barriers not on a 5-year plan for replacement, etc.);
- C. Origin of water (upslope of site, or from within floodplain);
- D. Temperature profiles (e.g., spatial and seasonal);
- E. Dissolved oxygen profiles;
- F. Presence of characteristics identified as limiting factors by Water Resource Inventory Area (WRIA) technical groups;
- G. Upslope development activities with documented changes in hydrology or sediment load;
- H. Documented strandings of adult or juvenile salmonids (especially if rectifiable by the project);
- I. Percent of available sub-basin rearing habitat represented by the proposed project;
- J. Water quality, including problems resulting from non-agricultural activities;
- K. Existing cover that may be destroyed as a result of maintenance, particularly if native vegetation;
- L. Amount of instream woody debris; and
- M. Contribution of project watercourse to total sub-basin flow.

**21A-24-383 Best Management Practices - Habitat Mitigation Standards.**

- A. The department may require in-channel

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structures to provide cover and channel complexity. If the department requires small woody debris as in-channel structure, it shall be anchored to the banks of the ditch and placed in the channel in those ditches that originate in the agricultural field and flow seasonally. Small woody debris may be anchored to be removable from the ditch to facilitate maintenance and high storm flows. If the department requires large woody debris as in-channel structure, it shall be placed in the channel in ditches that originate up-stream of the agricultural field or that flow most of the year. Large woody debris shall be large enough to stay in the system where it is placed but in no case shall it be smaller than six inches in diameter. If large woody debris is anchored, it may be installed to be removable from the ditch to facilitate maintenance and high storm flows.

B. Vegetation shall be planted alongside the ditch within areas not in existing agricultural use to provide cover and shading of the water flowing in the ditch and stream during the first planting season after maintenance or at another time no later than one year after completion of maintenance. Only native vegetation shall be planted, except that non-native species may be allowed in county-approved research projects. All vegetation maintenance shall be subject to the restrictions on the use of pesticides and herbicides and other hazardous substances contained in K.C.C. chapter 21A.24. All plantings shall be maintained by watering, weeding, pest controls, monitoring and other methods for three years or to ensure that the vegetation becomes permanently established.

C. If noxious weeds are proposed to be removed from the areas adjacent to the ditch used by salmonids or on the ditch's side walls, the following methods shall be followed:

1. Any disturbed areas of the side walls shall be replanted with native vegetation consistent with subsection B.;
2. Other areas of exposed soil shall be covered with weed barriers and three inches of soil and either reseeded consistent with 21A-24-381 C. or replanted with native vegetation consistent with subsection B. ; and

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3. Filter fabric shall be installed parallel to the ditch during the clearing activities if there is flow in the ditch at the time of vegetation removal.

**21A-24-384 Best Management Practices - Spill**

**Prevention/Control.** There shall be spill cleanup materials at the site, and all operators shall be familiar with proper spill cleanup procedures. If any equipment or engines leak petroleum or hydraulic products, the leaked products shall be cleaned up, and the equipment or engines removed from the maintenance area until the leak is repaired.

**21A-24-385 Severability.** If a provision of these rules or its applicability to any person or circumstance is held invalid, the remainder of the provisions of these rules or the application of the provision to other persons or circumstances shall not be affected.