

Working in the Water



Are you doing a job like this in or next to a water body?

- ◆ Construction.
- ◆ Painting or sandblasting.
- ◆ Building a boat ramp or bulkhead.
- ◆ Building a residential bridge or a pier.
- ◆ Installing a culvert.
- ◆ Cleaning out a ditch.
- ◆ Realigning a stream channel.
- ◆ Building a small dam or pond.
- ◆ Installing a utility pipe.
- ◆ Restoring a stream.



This booklet could save you money, time and trouble.

Publication #99-06, May 1999 (rev 7/08)
♻️ *printed on recycled paper*

Planning ahead can save you money and hassles.

Getting the proper permits and following this guidance will also help you prevent pollution and minimize its impacts. It does not release you from liability or from following the regulations of other agencies, including Department of Fish & Wildlife Hydraulic Project Approval (HPA) (see "Permits or Guidance You May Need" on page 16). These recommendations will help you comply with the state Surface Water Quality Standards (Ch. 173-201A WAC) and protect the natural resources we all enjoy (See Standards on the inside of the back cover).

If you fail to follow this guidance and your project results in pollution of a water body, you may be subject to formal enforcement actions, including penalties up to \$10,000/day per violation under RCW 90.48. Your project could also be delayed or even stopped.

Where schedule and budget are concerned, it pays to protect the water body you're working in.

If you have any water-related questions or problems regarding this pamphlet or your project, please call the regional water quality office of the Department of Ecology closest to your project:

- ◆ Central, Yakima: (509) 575-2490
- ◆ Northwest, Bellevue: (425) 649-7000
- ◆ Eastern, Spokane: (509) 329-3400
- ◆ Southwest, Lacey: (360) 407-6300

Photos courtesy of
*Pierce County Conservation District and
Washington Conservation Corps*

If you need this publication in an alternate format, please call the Water Quality Program at 360-407-6401. Persons with a hearing loss can call 711 for Washington Relay. Persons with a speech disability can call 877-833-6341.

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General Guidance

Preventing pollution while working in, over, or around surface waters (*flowing or intermittent streams, lakes, wetlands, or marine waters*) in the state of Washington

Managing your project

◆ Make every effort to prevent any impacts to the water body, such as leaving it clouded or dirty, or warmer or colder, or with an oil sheen, or any foreign chemicals, or with a different acid/alkaline (pH) balance.

◆ Follow the conditions in your Hydraulic Project Approval (HPA) obtained from the Washington Department of Fish and Wildlife, including restrictions on when in-water work can be completed.

◆ Work in the lowest flow possible, or during the driest part of the year.

◆ If possible, divert the natural flow of the water around the job. In the case of small streams, it may be possible to pump or pipe the stream past the work area. Design and operate the diversion system to prevent erosion or scouring in the stream channel.

◆ Keep muddy water from your project out of the water body. Use temporary sediment traps to let the turbid water settle for at least two hours. The traps should be frequently inspected and cleaned out when necessary.

◆ Place sediment barriers in the stream if that is feasible, and remove the collected sediments before removing the barrier.

◆ Keep construction debris out of the water and ensure it is properly disposed of.

◆ Thoroughly clean any equipment that will be used in or near the water before

beginning the project. This will prevent petroleum products and other contaminants that may be on the equipment from entering the water. Clean the equipment away from the water body.

◆ Limit the work area around your project, and disturb the banks as little as possible.

◆ If you spot any distressed or dead fish near your project, immediately notify your regional Ecology office and Washington Department of Fish and Wildlife's HPA hotline 360-902-2537. Take action to find and fix the problem.

◆ Have an experienced pollution control inspector available to help you identify and implement best management practices (BMPs).

◆ Keep a copy of this booklet and of all applicable permits on the job site, handy for your crew.

Erosion

◆ If you will likely be disturbing sediments in the water or soils along the shoreline, you should develop an Erosion Control Plan identifying what BMPs and measures you will use to prevent sediments and soils from polluting the water.

◆ Think about what will happen to the site when it rains! Stabilize disturbed areas to prevent erosion during the job, and inspect vulnerable areas each day and after significant rainfall.

◆ Try to time your project so you can replant any disturbed areas well ahead of the next rainy season, giving the new plants a chance to get established. Immediately after recontouring the site, replant all areas that have been disturbed by the project with appropriate native vegetation, placing the plants in natural patterns.

◆ For long-term stabilization after the job is finished, use bioengineering wherever possible. Get the Natural Resource Conservation Service manual "*Slope Stabilization and Erosion Control Using Vegetation*" from your local Conservation District. Bioengineering is the preferred method for erosion control on shorelines, instead of using bulkheads, concrete, riprap, and other structural solutions. This means using natural vegetative materials to stabilize the site — bundles of stems, root systems, or other living plant material sometimes combined with soft gabions, filter fabric or other soil stabilization techniques.

◆ Try to keep heavy equipment away from streambanks whenever possible.

◆ When digging in the water, empty material from the bucket away from the waterway.

◆ If possible, place temporary, easily removable materials such as steel grates or mats on the ground at access points to prevent bank damage or erosion. Clean, washed gravel should be used for approach material to prevent erosion or siltation.

Concrete

Fresh concrete is a pollutant. It changes the acid/alkaline (pH) balance in the water. Uncured concrete in direct contact with the water is toxic to aquatic life. Dust given off by grinding concrete creates a pH problem.

◆ Pour concrete in the dry area, protected from the water. For example, you can separate the concrete from the water by using a form or sheetpiling or placing a cofferdam around the concrete. Allow it to cure at least seven days before contact with the water body. Some fast-drying mixes may allow shorter curing time.

◆ Dispose of any water contaminated with concrete away from the stream.

◆ Clean out concrete delivery trucks, pumping equipment, and tools where there is no possibility of drainage to surface water.

Spills

Take extreme care to prevent spills of any petroleum products, fresh cement, lime or concrete, chemicals, soaps, caustics, paints, or other toxic or harmful materials, especially near the water. Keep appropriate spill containment and cleanup material readily available at the job site.

◆ In the event of a spill, notify the Emergency Management Division at 1-800-258-5990, and start containment and cleanup immediately. Dispose of any spilled material and used clean-up materials away from the job site.

◆ Regularly check fuel hoses, oil drums, oil or transfer valves and fittings, etc., for drips or leaks. Maintain and store them properly to prevent spills or runoff into the water.

Large Construction Projects

Make sure you also read the General Guidance section!

Ecology requires you to have permit coverage before you start soil-disturbing construction activity. This applies to any construction site that will disturb one or more acres and have a potential discharge of stormwater to a surface water (whether it is a wetland, ditch, river, lake, estuary, marine waters, creeks — even unnamed creeks, storm drains, etc.). Call (360) 407-6300 regarding permits statewide. If you already have your permit and have technical questions, direct them to the inspectors in the appropriate regional Ecology office (see regional contact numbers on the inside of the front cover).

The best protection for the stream is to separate the flowing water from your project.

◆ If the project spans the entire width of the stream at the same time, pipe the stream around the work if possible. Build a small dam upstream of the project, using sandbags, and either

- use a pipe to carry the stream past the work area, or
- use a pump with a screened intake to pump the water around the work site (the screen will keep any fish from being harmed by the pump.) Fish collection and relocation would need to occur in the bypassed reach prior to dewatering.

◆ If the project is along only one bank of the stream, you can separate the work area from the flowing water by building a wall out of sandbags. If the wall is strong enough, you may be able to lower the

water level within your work area. To avoid pumping muddy water back into the stream, discharge this water away from the stream or set up settling ponds to clarify the water before it enters the stream.

Streambank protection

If you're using riprap for streambank protection, use material that is free from dirt, sand, and clay.

Leaching of toxic preservatives

To prevent leaching of toxic preservatives into the water, place treated lumber in the water only after it's completely dry. Creosote, "Penta," and products containing heavy metals like copper, chromium, and arsenic, can kill aquatic life. If possible, use materials such as recycled plastic or steel pilings instead, or wood that will stay submerged.



Painting and Sandblasting Projects

Make sure you also read the General Guidance section!

- ◆ Keep sandblasting materials out of the water.
- ◆ If you plan to apply or sandblast lead-based paint, contact the nearest Ecology regional office for special instructions.
- ◆ Painting and sandblasting on overwater structures (*e.g., docks, floats, bridges*) may require an HPA. Contact the regional Washington Department of Fish and Wildlife office to determine whether an HPA is needed.
- ◆ Store, transfer and mix all paints, oils, chemicals, solvents, clean-up supplies, and other liquid or solid wastes on impervious (non-porous) surfaces away from the water body. Use drip pans when pouring liquids. Provide a barrier, such as a berm or dike, to keep them out of the water if they leak or spill.
- ◆ Take waste, residues, and chemicals off site for disposal at a proper facility (contact your local health department). Do not allow them to be washed into the water or down a drain.
- ◆ Near a water body, use buckets and sprayers no larger than two gallons.
- ◆ When working over a water body, suspend drip tarps to keep materials from falling into the water.
- ◆ Have a boat and spill containment booms available at the job site. If paint is oil-based, have oil spill absorbent booms and pads ready in case of a spill.

Boats Ramps, Bulkheads, Residential Bridges, Docks and Piers

Make sure you also read the General Guidance section!

- ◆ When building, treating, or painting docks, try to do as much of the work as possible on shore. Use extreme care with paints and chemicals near water. All materials that have been treated must be completely cured prior to installation.
- ◆ Use pre-cast or formed concrete ramps and bridges where possible.
- ◆ When placing piers, do not restrict the flow of water or cause water to back up behind the pier. This could cause sediment scouring.



Installing Culverts

Make sure you also read the General Guidance section!

State law requires that all man-made water crossing structures restore and maintain healthy fish populations by providing effective fish passage into and out of fish habitat in lakes, rivers and streams. Adequate fish passage through a culvert is determined by criteria described in the Washington Administrative Code (WAC 220-110-070).

Designing a culvert for fish passage can be a complex undertaking. Basic design requires an understanding of

- ◆ Fish passage criteria.
- ◆ The hydraulics of water crossing structures.
- ◆ Basin hydrology.
- ◆ Biological factors.
- ◆ Stream morphology.
- ◆ The best way to match these factors with the physical characteristics of the proposed site.

Most fish passage problems can be avoided through the use of design techniques that have a high probability of success in achieving fish passage and habitat objectives. Such techniques include:

- ◆ Those that retain the natural streambed by spanning the stream (bridges or open-bottomed culverts).
- ◆ Those that replace the natural streambed with a simulated bed (embedded metal or concrete culverts) in which flow conditions and substrates inside the structure are similar to those in the natural stream channel above and below the crossing. These culverts do not result in a loss of fish habitat.

WAC 220-110-070 describes two different approaches for permanent culverts - the **no-slope option** and the **hydraulic design option**. **Please consult this WAC before starting your project.**

Culvert replacement work will vary considerably in scope and scale, depending on the culvert size and project location. Because of this, it is difficult to address all concerns without reviewing individual projects.



For additional information and assistance, remember to:

Work with Washington Department of Fish and Wildlife and other regulators (local municipalities, Army Corps of Engineers, Dept. of Ecology, Conservation Districts, etc.) to obtain information, advice, and permits necessary for the project. Call (360) 902-2534 for engineering advice.

Ditch Cleanout

Make sure you also read the General Guidance section!

- ◆ Consult with Washington Department of Fish and Wildlife to determine whether or not the ditch is actually a stream, and whether an HPA is required.
- ◆ Keep the sediment and materials removed from the ditch or stream from getting back into the water. Minimize the disturbance to the ditch or stream banks.
- ◆ If the ditch discharges to a surface water and you have to clean the ditch when water is in it, use a hay bale or filter fabric dam, or leave a plug of material at the discharge point until the remainder of the ditch has been cleaned.



Channel Realignment Projects

Make sure you also read the General Guidance section!

In general, there is no good reason to straighten a meandering stream.

- ◆ You must have an HPA if your project involves re-routing a stream. Call Washington Department of Fish and Wildlife at (360) 902-2534.
- ◆ When creating a new channel for the stream, place a sediment barrier at the downstream end to minimize sedimentation of the stream channel. Clean out the sediment that collects before removing the barrier.

- ◆ Excavate the new channel, working from downstream to upstream, and leave a “plug” of sediment between the new channel and the old. When the new channel has been completed and stabilized, open up the “plug” to allow the water to flow into the new channel.

Building Small Dams and Ponds

Make sure you also read the General Guidance section!

- ◆ If you plan to build a dam that can store 10 or more acre-feet (3.25 million gallons) of water at top-of-dam level, you must obtain a permit from Ecology's Dam Safety office (360) 407-6623. They will help you with technical standards and permit information.
- ◆ If the dam connects to, or affects waters of the state, then an HPA is required from the Washington Department of Fish and Wildlife.
- ◆ Ponds constructed away from streams and rivers are better for water quality purposes.
- ◆ Make sure the design and construction of the dam or pond are strong enough to prevent collapse. Private engineering firms or your local conservation district office can provide technical advice.
- ◆ When you have finished putting in the pond, seed and re-vegetate the area, using native plants where possible. Your Conservation District or Washington Department of Fish and Wildlife office has information about suitable vegetation.
- ◆ During construction, minimize turbidity in the water. Use clean, washed rock for diversion wing dams or gravel berms. Minimize bank disturbance and protect against erosion.
- ◆ Dams should be provided with an overflow spillway channel large enough to pass flood flows from the upstream drainage basin.



Installing Residential Utility Pipes - sewer, septic, water, other - in water bodies, including wetlands

Make sure you also read the General Guidance section!

- ◆ Bore under the streambed if possible.
- ◆ Bed the pipeline deep enough to prevent scouring.
- ◆ Carefully dechlorinate hyperchlorinated water used to disinfect water pipelines, and avoid direct discharge to a surface water if possible.
- ◆ Minimize the amount of material removed from wetlands. Place the spoils either along the trench or away from the wetland area. When filling the trench, use the same materials if possible.
- ◆ If forested and scrub/shrub wetlands need to be restored by planting native species of woody vegetation, select the species carefully so that as it matures, the vegetation does not interfere with the pipeline.



Watershed Restoration Projects Under ESB 5616 and 2879

Make sure you also read the General Guidance section!

Timing

◆ Adjust your schedule for weather conditions. Rain, rain on snow, freezing, or flooding may delay your project, or necessitate more stringent erosion control measures. Cover exposed soils with plastic or mulch during the project.

This guidance applies to projects:

- ◆ That affect less than 10 miles of stream reach.
- ◆ That involve importing, removing or disturbing less than 25 cubic yards of sand, gravel, or soil.
- ◆ Where no vegetation is removed.
- ◆ That use bioengineering to restore eroded or unstable stream banks, especially using native plants.
- ◆ That are part of a watershed restoration plan that has undergone public review pursuant to SEPA requirements.
- ◆ That improve or restore native fish or wildlife habitat or water quality for the public benefit.

Qualifying projects are exempt from needing a Substantial Development Permit, but they may still need a Conditional Use Permit or variance under the Shorelines Management Act.

By following this guidance, you should be able to minimize any impacts on the water quality where you are working.

◆ Consult the Washington Dept. of Fish & Wildlife - (360) 902-2534 - regarding any restrictions on timing for fish and wildlife protection. You may need a Hydraulic Project Approval (HPA) from them.

Fencing

- ◆ Leave a setback of at least 10 feet from the high water line, to allow vegetation to filter runoff before it enters the water.
- ◆ If you're using chemically treated fence posts, allow them to dry before using them, and never place them below the water table or water line. Consider substituting recycled plastic or steel pilings.
- ◆ Contact your local Conservation District about working with livestock facilities near streams.

Gravel

Be sure any gravel you place in the stream is washed clean so it won't add to the turbidity.

Large Woody Debris (stumps, big logs, and root wads)

- ◆ When looking for a good placement for large woody debris, consider seasonal high flows, and stabilize it so it won't be swept downstream.
- ◆ Ask your local Conservation District, Stream Team, or Washington Department of Fish and Wildlife office for advice.

◆ You may need a special authorization from Ecology if you want to apply any chemical in or near the water, unless there is no chance for runoff or overspray to enter surface waters.

◆ Only a licensed applicator can legally apply aquatic herbicides. You must meet the label and notification requirements of any herbicide you use.

◆ Keep overspray from entering the water.

Erosion Control and Bank Stabilization

◆ Use proper erosion and sediment control practices on the construction site and adjacent areas to prevent upland sediments from entering the stream channel. See General Guidance, page 2.

◆ Get the National Resources Conservation Service (NRCS) field guide "Slope Stabilization and Erosion Control Using Vegetation (publication #93-30) from your local Conservation District.



Permits or Guidance You May Need

Hydraulic Project Approval

You'll need a **Hydraulic Project Approval (HPA)** for any work that affects the natural flow or bed of a state water body. Call the *Washington Dept. of Fish & Wildlife* - (360) 902-2534.

Contact your *Area Habitat Biologist (AHB)* for site-specific design help. In-stream work windows vary across the state, and the AHB will be aware of work windows as well as other environmental concerns for individual sites. To reach your AHB, contact the closest regional office of WDFW:

- ◆ *Region 1 (Spokane): (509) 892-1001*
- ◆ *Region 2 (Ephrata): (509) 754-4624*
- ◆ *Region 3 (Yakima): (509) 575-2740*
- ◆ *Region 4 (Mill Creek): (425) 775-1311*
- ◆ *Region 5 (Vancouver): (360) 906-6700*
- ◆ *Region 6 (Montesano): (360) 249-4628*

Other permits you may need to include:

◆ **Expedited Permit for Watershed Restoration Projects** under ESB 5616 and 2879 – *Washington Conservation Commission* – (360) 407-6200.

◆ **SEPA** (State Environmental Policy Act) – contact your local city/county planning office.

◆ **Hydraulic Project Approval** – required for work that uses, diverts, obstructs, or changes the natural flow or bed of any of the salt or fresh waters of the state.

◆ **Shoreline Substantial Development Permit** – contact your local city/county planning office.

◆ **Section 404 Permit** – required for dredging or filling below the ordinary high water mark or for clearing in a wetland – *US Army Corps of Engineers* - (206) 764-3495. A Section 404 Permit triggers a Section 401 Water Quality Certification.

◆ **Section 401 Water Quality Certification** – *Washington Dept. of Ecology* (360) 407-6918 or 407-6912.

◆ **Stormwater permit** for projects that will disturb 1 acre or more of soil. See page 4.

For more information about permits

Call Ecology's Permit Assistance Center at (360) 407-7037 or <http://www.ora.wa.gov/center.asp>

Partial List of Water Quality Standards for Surface Freshwaters of Washington

WAC 173-201A

	CLASS AA "Extraordinary"	CLASS A "Excellent"	CLASS B "Fair"
Temperature	Less than 61°F	Less than 64°F	Less than 70°F
Dissolved Oxygen (mg/L)	More than 9.5	More than 8.0	More than 6.5
pH	6.5-8.5	6.5-8.5	6.5-8.5
Fecal Coliform Bacteria (colonies/100mL)	Less than 50	Less than 100	Less than 200
Turbidity	Less than 5 NTU	Less than 5 NTU	Less than 10 NTU

CLASS AA:

"Extraordinary": Highest quality streams - protected uses include domestic water supply, swimming, and coldwater fish spawning and rearing.

CLASS A:

"Excellent": Good quality streams - same as AA, but not quite as cold or oxygenated as AA - less than optimum conditions for certain stages of sensitive aquatic life.

CLASS B:

"Fair": Pretty good streams, but not clean enough for domestic water supply - only for industrial and agricultural uses. OK for secondary contact (fishing and boating) but not considered safe for swimming.

Back Cover Photo:

Before 1998, salmon swimming up Little Salmon Creek in Lewis County encountered an impassable culvert with a seven-foot drop. The Washington Conservation Corps (WCC) raised the streambed below it with a "staircase" of seven one-foot-high log weirs, each securely anchored and backfilled with gravel and rock. This opened up several miles of prime salmon habitat above the culvert, where the fish can now spawn in the headwaters. During the job, the WCC crew took special care not to pollute the water, including temporarily diverting the stream around the 110-ft. length of the project.

