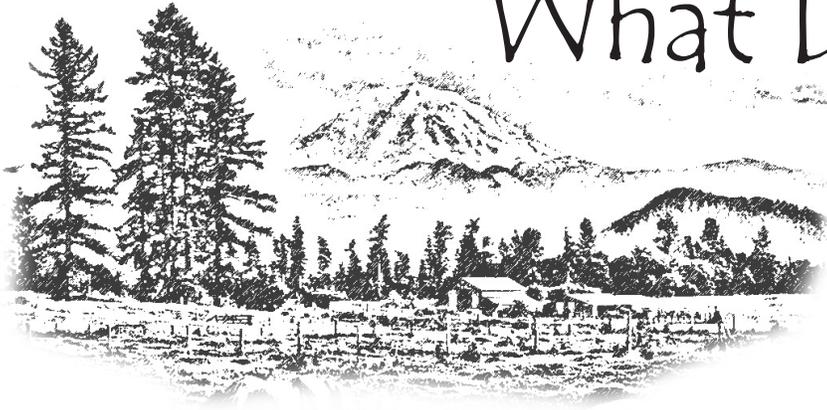


Constructing Ponds and Water Features

What Does It Take?



The information in this publication is intended for informational purposes and while all effort has been made to present accurate information, the reader should contact the appropriate entity for details and up-to-date information. In no circumstance should the reader use the information contained here as a substitute for the appropriate legal advice.

Constructing a pond can significantly affect your water resources and those of your neighbors as well as “downstream” resources. While attractive, ponds can attract water fowl, which can add fecal contaminants and bacteria to the water, impacting both surface and drinking water quality and human health. Non-native fish and vegetation can also “escape” the confinement of the pond and negatively affect native species. Poorly sited and improperly constructed ponds can alter hydrology, destroy habitat, and degrade water quality. Due to potential impacts, you should carefully assess what is necessary both technically and legally before constructing a pond. This factsheet will provide you an idea of things you should consider before constructing a pond and is not intended to be a technical guide to construction.

Water Features



In practice, water features usually consist of preformed or lined “ponds” filled with house (well or utility) water, recirculate the water with small pumps, and are located within the landscaped area of your yard. While these features can be complicated, they usually tend to hold 1000-1500 gallons of water or less. Water features also tend to be “self-contained” in that they do not drain to or connect with surface water or ground water. For these reasons, water features have little impact on water resources and are relatively easy to build. These “ponds” are most often considered landscaping by the county and fall under general requirements for swimming pools:

1) If additional wiring is necessary, a state electrical permit (pumps, lights, etc.) should be obtained from the Department of Labor and Industries (360-896-2300, located at 312 SE Stonemill Drive Suite 120, Vancouver, 98684-3508). Permit fees for can be found at <http://www.lni.wa.gov/tradeslicensing/electrical/files/feetrainnotes063004.pdf>.

2) The water feature should be located one foot away from the home foundation for every two feet of pond depth.

3) Secure a grading permit if the total excavated and fill material surpass 100 cubic yards on rural lots less than five acres and 200 yards on rural lots greater than five acres. If the soil removed from the hole is placed on the same property that it was excavated from, then it is counted as fill and part of the cubic yards that triggers the grading permit.

Small Acreage Program



Constructed Ponds

Constructed ponds tend to be much larger with a higher potential impact on water resources and are therefore more regulated than water features. Ponds tend to be fed by water from stormwater runoff (from roofs, impervious surfaces, etc.), groundwater (springs, seepage), or streams. Ponds usually have some type of outlet structure. A pond may be formed totally by excavation or with a combination of excavation and embankment (or berm) construction. Excavated ponds pose the least safety hazard since a burst embankment can send large quantities of water downstream, not only carrying contaminants, but endangering both life and property.

Legal Considerations (Permitting, Insurance, Water Rights)

A landowner's best strategy is to begin with the Clark County Permit Center at 1300 Franklin Street, Vancouver, 360-397-2375 extension 4489. Based on your specific project and location, they will advise you of the permits required for your project. Table 1 provides a quick overview of some possible permits necessary for constructing a pond.

Permits. Constructed ponds will almost always require permits. The type of permits required depends on several factors: location, size, method of construction (excavated, bermed), and purpose. Be aware that the permitting process can be time consuming and involves completing forms that provide necessary information to Clark County Community Development. The tables below provide an outline of some common permits that may be required. Permits also require fees for application review and construction inspection which will vary according to the permit required and the agency. Application fees are generally not refunded if the application is denied. Additional charges apply to projects not completed within six months of the permit issue date unless an extension is obtained.

You will first need to submit a completed *Developer's GIS Packet*, available from Clark County Assessment and GIS Department for \$50.00 (plus tax), along with your grading permit application. For a general overview, read the county's handout, *Grading of Land*, at http://www.clark.wa.gov/publicworks/engineering/Documents/GradingSum_000.pdf

Grading fees double if you are caught grading without a permit. When grading exceeds 500 cubic yards, a State Environmental Policy Act (SEPA) review is required. A simple application without a SEPA review takes an average of two weeks to complete. A SEPA review needs a minimum of 78 days for processing.

Very large constructed ponds exceeding 3.25 million gallons (or 10 acre-feet where an acre-foot is the volume of water covering one acre of land at one foot in depth) require a reservoir dam safety permit from the Department of Ecology. For more information about reservoir dam safety permits, contact the Department of Ecology, Water Resources Program, 360-407-6300.

The Washington State Department of Fish and Wildlife (WDFW) requires a permit for stocking a constructed pond with fish. WDFW wants to ensure that stocked fish do not escape into streams and other water bodies since non-native and hatchery fish can cause serious ecological imbalances through habitat and food competition, disease, and predation. Screens and other exclusion measures may be required to prevent fish from escaping. Suitable fish include rainbow trout, largemouth bass, bluegill, sunfish, and channel catfish. WDFW maintains a list of certified disease-free fish growers. The permit application should be submitted to the WDFW office, 2108 Grand Boulevard in Vancouver. Stocking permits may take 30 days to process. If other permits are required it could take longer. For permits and further information, see http://wdfw.wa.gov/licensing/fish_transport/stocking_app.html or call 306-696-6211.

Insurance. A constructed pond is considered an "attractive nuisance" and a landowner is liable for any injuries that may occur to trespassers. Check with your homeowners' insurance company for more information.

Water Rights. Stream water belongs to the public and altering flows requires a "water right." A water right grants individuals or groups the use of a certain amount of water, but not ownership. Legally, a water right "is a legal authorization to use a predefined quantity of public water for a designated, beneficial purpose." Water rights law involves a very complex set of rules throughout the western U.S. Irrigation comprises one use that requires such a water right. For more information, contact the Washington State Department of Ecology (DOE), Southwest Region 360-407-6859 or view their web site on water rights at <http://www.ecy.wa.gov/programs/wr/rights/water-right-home.html>.

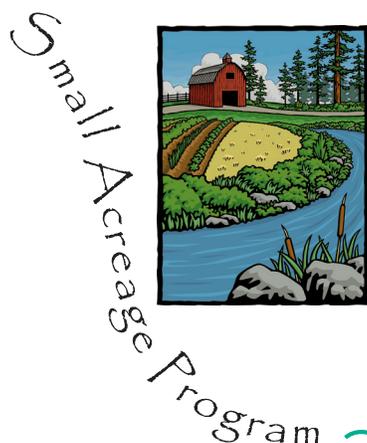


Table 1: Permit Information

Permit	Required	Plan Review Fee	Inspect Fee	Other Fees	Conditions / Definitions	Agency
Pre-Application Conference	When Shoreline Permit required	\$2,787		Waiver Request \$380	Waiver may be granted for simple projects	Clark County Community Development
GIS Developers Packet	For Pre-application Conference or Shoreline Permit			\$50	Standardized map package	Clark County Community Development
Grading	<500 yd3	\$366 - \$3,293	\$700 - \$2,600	\$94 (Issuance)	Required to import or excavate 100 or more yards of earth material to or from a specific location. The grading amount is determined by adding excavation and import volumes. Over 500 cu. yd. triggers archeology requirements. 5000 cu. yd. triggers engineered plan requirement. Costs vary by site; some sites may have added stormwater costs.	Clark County Public Works
	500 - 4,999 yd3	\$718 - \$3,464	\$1,000 - \$3,000	\$94 (Issuance)		
	5,000 - 25,000 yd3	\$1,739 - \$4,667	\$2,000 - \$4,000	\$94 (Issuance)		
	>25,000 yd3	\$2,000 - \$4,928	\$4,000 - \$7,000	\$94 (Issuance)		
Drainage Project Review	>6999 sq. ft. land disturbing activity	\$828	\$1,400	\$94 (Issuance)	Required when land disturbing activities are 7000 sq. ft. or greater AND grading permit is not required.	Clark County Public Works
Shoreline	In Shoreline Management Area	Varies			Consult with Clark County Planner to determine permit type and fees	Clark County Community Development
SEPA	In a SEPA Critical Area or on lands "covered by water"	\$1,622			When grading in a stream, Shoreline, or floodplain, affects more than 0.1 acre of wetland, or exceeds 1000 cu. yd. of grading (gross volume). Triggers archeology requirements	Clark County Environmental Services
	Grading >1000 yd3	\$1,622				
Joint Aquatic Resource Application (JARPA)		Applicable fees for each permit required.			A JARPA streamlines the process when several agencies need to issue permits for a single project.	
Archaeological Pre-determination	Depends on the type of land disturbance and State mapping				Submit an archeological pre-determination study to DAHP. DAHP concurrence letter required for Clark County Grading, SEPA or Shoreline when triggered by County Code	WA Dept. of Archeology and Historic Preservation (DAHP)
HPA (Hydraulic Project Approval)	In-stream or water diversion			\$150	Required for work that will use, divert, obstruct, or change the natural flow or bed of any waters of the state.	WA Department of Fish & Wildlife
Section 404	Any Soil Disturbance in Wetlands				Notification only for less than 0.1 acre. Application and procedural requirements vary.	Seattle District, US Army Corps of Engineers
Wetland or Habitat Pre-determination	Optional	\$813		\$177 to combine Wetland and Habitat	OPTIONAL for on-site review of wetland and/or habitat site conditions and proposed plans PRIOR TO County permit application. Does not meet other agency requirements.	Clark County Environmental Services
Wetland Permit	< 0.1 acre of Wetland Impact or in a Wetland Buffer	\$1,117			Pre-determination fees deducted if a valid pre-determination is on record.	Clark County Environmental Services
	≥0.1 acre of Wetland Impact	\$1,581				

Table 1 continued

Permit	Required	Plan Review fee	Inspect Fee	Other Fees	Conditions / Definitions	Agency
Habitat Permit	In a Priority Habitat Area	\$1,117		\$464 for Type II Porcess (Shoreline Permit)	Permit for clearing or land use activities within a Habitat Conservation Area. Pre-determination fees deducted if a valid pre-determination is on record.	Clark County Environmental Services
Dam Safety	Impound more than 3.25 million gallons.			Variable	Constructing, modifying, or repairing any dam storing 10 or more acre-feet (3.25 million gallons) of water.	WA Dept.of Ecology
Water Right	Stream diversion / well use >5000 gallons/day				Authorizes use for a predefined quantity of public water for a designated, beneficial purpose.	WA Dept.of Ecology
Stocking Fish				\$70 (processing fee) \$24	Required to place certain fish species in constructed ponds.	WA Dept. of Fish & Wildlife
NPDES General Construction Permit	≥1 acre ground disturbance AND possible run-off to a stream			\$568 per year under construction	Requires a Stormwater Pollution Prevention Plan. Fees assessed on July 1 and prorated from application date prior to July 1, revised annually.	WA Dept.of Ecology
NPDES Erosion Control Permit			\$350 plus \$1,000/acre of disturbed area	\$94 (Issuance)	Reviewed as part of grading and stormwater permit. Separate permit not required.	WA Dept.of Ecology

*Fees as of 2014; subject to change. Check with appropriate agency for latest information.

Technical & Use Considerations

Design

For basic information on designing smaller ponds and attracting wildlife, see the WDFW page at <http://wdfw.wa.gov/living/birdbaths/index.html>. An 85 page, 1997 booklet by the NRCS also contains information on pond design: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_030362.pdf

Water Sources

Rainwater runoff. A well designed pond positioned at the bottom of a sufficiently large “watershed” or drainage area could be filled from the surface runoff that drains into the pond. Directing roof runoff from buildings can also help fill a pond. Directing runoff from driveways or animal areas into a pond risks concentrating pollutants (oil, grease, manure, etc.) that could harm plants and animals. This latter type of runoff could best be handled by grassy swales to trap sediments and pollutants.

Existing subsurface drains. Some properties formerly or currently used for agriculture might have existing subsurface drains that could be routed to a pond. Storing this water in a pond would be a more environmentally sound method of managing storm water than draining the water directly into streams.

Pond Use

A pond can serve several uses, often at the same time. The more uses you derive from a pond, the better return you will receive on your invested time and financial resources.

Watering Livestock. A pond can be used as an alternative to watering livestock directly from streams and natural ponds or wetlands, thereby improving water quality. While animals should not be given uncontrolled access to a pond, there are ways to control their access and still provide animal watering. The Clark Conservation District (360-883-1987 x110) can help you with this.

DOE recognizes water quality improvement when landowners remove animals from streams. For this reason, if you have historically used a stream to water livestock, you can divert small amounts of water to create off-stream storage, but only as much water as your animals would normally drink. Any diversion pipe inlets and outlets must be covered with 1/8 inch wire mesh screen to prevent fish passage and excess water should be outlet as close as possible to the intake. This exception only applies to small numbers of animals and not to concentrated uses, such as feed lots. While it is not required to notify DOE, it is in your best interest to send a letter of intent. Keeping a record of the historical use, number of animals, and the water source can demonstrate you did not expand your water use.

Fire Protection. A pond used for fire protection should provide 500 gallons of water per minute for at least 30 minutes (15,000 gallons) and will need year-round fire truck access. Your homeowner’s insurance may provide a discount for this type of pond.

Recreation. Include pond safety into your plans to minimize the risk to people, but especially to children. Constructed ponds should be fenced and have shallow side slopes less than 1:4 (one foot drop for every four feet horizontal). Placing easily accessible flotation devices nearby also improves safety and reduces potentially serious accidents.

Wildlife. Constructed and landscaped properly, ponds can also attract a variety of wildlife, from deer to birds to frogs. Be forewarned that ducks and geese can quickly foul a pond with their droppings, creating a green and malodorous nuisance which can pollute groundwater and nearby natural surface waterbodies. The secret to attracting wildlife rests with the vegetation you plant. For ideas, contact the Clark Conservation District.



Pond Location

Locating a pond will depend on topography (slope), soils, and existing landscape and ecological features. It will be difficult to permit constructed ponds in critical aquifer recharge areas, priority habitat areas, wetland areas, floodplains, and shoreline areas. The Clark County soil survey lists soil types and their suitability for ponds (and many other activities) and can be seen on-line at <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.

It is dangerous and illegal to dam a stream to construct a pond. Earthen dams are subject to failure from high flow events and improper construction. You are legally liable for damage caused by illegal construction.

You can access the Clark County Geographic Information System, Maps Online, at: <http://gis.clark.wa.gov/mapsonline/index.cfm> to look at identified critical areas and other information about your property by entering your address or parcel number.

If you plan a larger constructed pond, you will be well served to consult with an engineering firm familiar with pond design and construction.

Pond Maintenance

Proper maintenance and operation, such as regular inspection and repair of banks and spillways, will prolong the life of your constructed pond. Keeping contaminated water (excess fertilizer, animal manure, etc.) out of the pond will maintain cleaner pond water and keep these pollutants from entering natural waters via the pond outlet. In order to minimize mosquito breeding, you may want to consider stocking your pond with fish that effectively control mosquitoes.

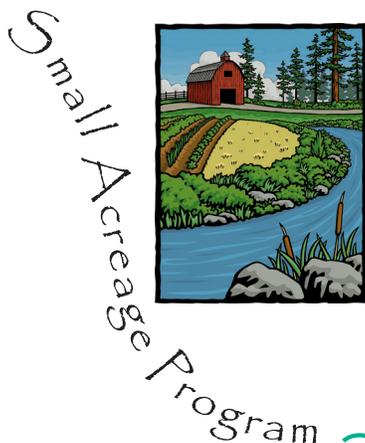
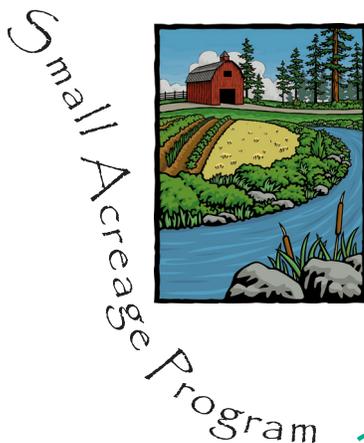


Table 2: Agencies Contact

Agency	Permits	Contact	Website
Clark Conservation District	Technical Assistance	11104 NE 149th St. Bldg. C, Brush Prairie WA 98606 360-883-1987 x110	http://www.clarkcd.org/
Clark County Community Development	Pre-application Conference, GIS Developers Packet, Shoreline	1300 Franklin St. Vancouver, WA 98660 (360) 397-2375 permitservices@clark.wa.gov	http://www.clark.wa.gov/development/
Clark County Environmental Services	SEPA, Wetland, Habitat	1300 Franklin St. Vancouver, WA 98660 (360) 397-2375	http://www.clark.wa.gov/environment/
Clark County Public Works	Grading, Drainage	4700 NE 78th St. Vancouver, WA 98665 (360) 397-2446 pubwks.cservice@clark.wa.gov	http://www.clark.wa.gov/publicworks/
WA Dept. of Ecology	Water Rights, Dam Safety	2108 Grand Blvd. Vancouver, WA 98661 (360) 407-6058	http://www.ecy.wa.gov/programs/wr/wrhome.html
WA Dept. of Fish & Wildlife	HPA, Fish Stocking	2108 Grand Blvd. Vancouver, WA 98661 (360) 696-6211 TeamVancouver@dfw.wa.gov	http://wdfw.wa.gov/licensing/
USDA Natural Resources Conservation Service	Technical Assistance	11104 NE 149th St. Bldg. C, Brush Prairie WA 98606 (360)-883-1987	http://www.nrcs.usda.gov/wps/portal/nrcs/site/wa/home/

The Small Acreage Program is a partnership between
[WSU Extension Clark County](#) &
[Clark County Environmental Services Clean Water Program](#).



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Douglas M. Stienbarger, 2004; tables & fees updated by Eric Lambert, 2014



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