Wetland Avoidance and Minimization Checklists

These checklists provide examples of how to accomplish avoidance and minimization during site analysis, project design, and construction. They are tools to help applicants prepare more complete project applications, which will facilitate faster review and decisions.

Project Assessment

Yes/No	Site Analysis
	Is the wetland rated as Category I or II or listed as a wetland with Special Characteristics or that needs Special Protection in the appropriate state rating system: > Washington State Wetland Rating System for Eastern Washington: 2014 Update (Ecology publication #14-06-030) > Washington State Wetland Rating System for Western Washington: 2014 Update (Ecology publication #14-06-029)
	Has the wetland or site been identified as a high priority for restoration in a watershed plan?
	Is the wetland associated with fish-bearing streams, shorelines of the state, or approved mitigation/restoration sites?
	Has the wetland been identified as a Habitat of Local Importance by the local jurisdiction?
	Does the site have high aquatic resource value and is the proposed development suitable for the site?
	Has a hydrologic analysis assessed potential impacts to hydrology following project construction? See the Washington Department of Fish and Wildlife Aquatic Habitat Guidelines.
	Cost Analysis
	Are there other sites available for the project that would allow for greater avoidance or minimization of the impacts to aquatic resources?

	Are the proposed wetland impacts consistent with the conditions for a U.S. Army Corps of Engineers Nationwide Permit (i.e., generally less than 0.5 acres of wetland fill)? If not, the review and approval time for an individual permit may be considerably longer and therefore more expensive.
	Has the cost of mitigation and monitoring been evaluated against the cost of avoidance and minimization in project design and construction? For example, state and federal resource agencies typically require 10 years of monitoring and maintenance for mitigation sites targeting scrub-shrub and forested wetlands. Local jurisdictions typically require financial guarantees for mitigation sites.
	Is onsite mitigation appropriate for unavoidable impacts or would offsite mitigation provide greater environmental benefit? Would additional property need to be purchased for offsite mitigation?
	Is the site within the approved service area of a mitigation bank or in-lieu fee program? If so, what are the credit costs to compensate for the impacted aquatic resource?

Avoidance

Yes/No	Project Design
	Avoid impacting higher-quality (rated) wetlands first if there are multiple wetlands on site.
	Reposition the building or the access on the lot.
	Cluster multiple structures.
	Decrease the building's footprint by adding levels or putting parking underneath the building.
	Realign road or utility corridors to avoid wetlands and their buffers.
	Suspend utilities from the bridge instead of trenching through the wetland.
	Reduce the width of access roads or driveways. Use pullouts if needed.
	Use steeper slopes or retaining walls to avoid placing fill in the wetland. Retaining walls should not block hydrology or wildlife corridors.

	Use bridges or spans instead of culverts.
	Include wetlands in development open space.
	Minimize the use of pipes and route them around wetlands.
	Request setback variances or easements from neighbors if it will help avoid impacts.
	Avoid grading by incorporating natural topography into the site design.
	Incorporate plants already on site into landscape design to avoid clearing and grubbing.

Minimization

(Note: Most of the example techniques in the avoidance checklist above can also be used to minimize impacts.)

Yes/No	Project Design
	Prioritize minimizing impacts to higher-quality wetlands if there are multiple wetlands on site.
	Reduce the size and number of bridge piers placed in the water or buffer.
	Cross wetlands at their narrowest point.
	Keep wetland crossing widths to the minimum necessary. Reduce or eliminate road shoulders and/or sidewalks at wetland crossings if safety is not compromised.
	Include upland areas on one or both sides of the wetland under a bridge to allow wildlife movement (habitat connectivity) during high water periods.
	Size culverts correctly for best hydrologic connectivity.
	Use permeable fill material or culverts between wetlands to maintain hydrologic connectivity.
	Design stormwater facilities to use infiltration where feasible. Avoid redirection of water to or from an existing wetland.

	Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered.
	Use engineered swales for stormwater conveyance instead of curb and gutter.
	If you can't avoid buffer impacts with stormwater facilities, try to limit them to the outer 25% of the buffer. Check with your local drainage ordinance as certain types of wetlands may not be allowed to be disturbed for stormwater facilities.
	Use existing disturbed areas for utility crossings.
	Minimize use of pipes and use directional boring (tunneling) instead of excavation and backfill.
	Convert permanent impacts such as access roads to temporary impacts where feasible.
	Use existing roadways, paths, or trails if possible by upgrading them and including new culverts or bridges.
	Trails that are mandated by local code should be kept out of the buffer if possible or in the outer 25% of the buffer.
	Direct lights away from wetland.
	Locate activity that generates noise (commercial and industrial buildings) away from wetland.
	Plant tall, dense evergreen vegetation around the outside edge of buffers to improve screening between development and sensitive areas. Avoid invasive plant species.
Yes/No	**Low Impact Development Techniques**
	Reduce the amount of impervious surface and preserve as much natural soil cover as possible.
	Disperse downspouts to vegetated areas or direct them to rain gardens instead of impervious surfaces.
	Disconnect impervious surfaces from each other by interspersing them with natural cover.

	Increase the travel time of water leaving the site.
	Use pervious materials for construction of hard surfaces (driveways, parking lots, sidewalks) where possible.
	Do not clear and grub wetlands or their buffers except when preparing for permanent impacts.
Yes/No	**Construction Techniques**
	On plans, clearly mark limits of construction. In the field, clearly mark wetlands and buffers with high-visibility construction fencing and maintain it for the life of the construction project.
	Use BMPs for erosion control and construction stormwater management and maintain those structures and practices for the life of the construction.
	Use compost berms, blankets, and socks instead of silt fence where these BMPs are appropriate.
	Keep construction staging and stockpiling of materials out of wetlands and their buffers.
	Use low-pressure tires or tracks on equipment to help prevent soil compaction.
	Restrict site access of machinery to as few areas as possible to reduce soil compaction.
	Clean equipment brought from other sites away from the wetland and its buffer so that invasive plants and animals are not introduced into the work site.
	Use clean fill materials so that invasive plants and animals are not introduced into the project site.
	Sample or bore on the edges of a wetland instead of driving through the middle. Conduct boring activities when soil is dry if possible.
	Adequately backfill trenches to ensure that temporary impacts don't become permanent by draining a wetland. If the potential for dewatering exists, consider using clay plugs in the trench. Monitor the area for changes.
	Replace side cast material in a trench in the same order it was removed to maintain integrity of the soil.

	If temporary fill must be used for access or other construction purposes, make removal easier by placing geotextile fabric or geogrid below the fill.
	Use removable crane mats instead of building construction pads.
	Remove bridge pilings where possible or cut two feet below the soil surface and backfill with native soil.
	If movable equipment must be in the wetland or buffer, do not leave it there over night or on weekends.
	Do not store fuel or refuel movable equipment in a wetland or its buffer. When refueling equipment that is not readily movable (i.e. cranes), follow BMPs for temporary spill prevention, control, and containment.
	Do not mix, test, store, or dispose of concrete within a wetland or its buffer.
Yes/No	**Construction Timing**
	Construct the project during the dry season to reduce impacts to aquatic resources.
	Pay attention to timing restrictions on in-water work (i.e. fish windows) or potential impacts to special-status species (i.e. breeding or migration).
	Install mitigation planting in the appropriate season.
Yes/No	**Property Management**
	Establish long-term protection of wetlands through natural areas designations, such as native growth protection easements.
	Protect the wetland from adjacent land uses with signs, fences, and buffers.
	Establish covenants limiting use of pesticides and fertilizers within 150 feet of wetland.
	Use integrated pest management techniques for landscape maintenance.
	Care for newly established desirable plants until they are well-established and able to out-compete undesirable plant species (weeds).
	Do not allow grass clippings, yard-waste or other material to be dumped in wetlands or buffers.