



U.S. Army Corps of Engineers
Seattle District, Regulatory Branch

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SUPPLEMENTAL ESA INFORMATION FOR ROAD PROJECTS

This is a list of common issues related to road crossings in fresh waters. Not all questions or comments will apply to every project. There may be site-specific questions raised that are not included in this list. Provide information on those that are pertinent to your project.

Project Description:

- Describe the purpose of the project — i.e. private road, residential road access, new highway, facilitate/block fish passage.
 - If removing fish barriers — see “Supplemental ESA Information on Removal of Fish Passage Barriers”
- Is there any potential to minimize the size of the structure or road to reduce encroachment into waters of the U.S?
- Describe all elements of the project with dimensions. For example:
 - Placement of culverts — are they new, old, or retrofitted old?
 - Will the culverts be fish friendly?
 - What is the flow, velocity, slope changes?
 - Are the bottoms baffled?
 - What are the dimensions of the road/culverts in total and in waters of the U.S.?
- Describe material used. For example:
 - What types of crossings are planned?
 - Are they bridges, metal pipes, concrete pipes or arches?
 - Will the material be treated with preservatives — what type?
 - Are roads dirt, oiled, graveled or paved?
 - Both bridges and arches should encompass the 100-year floodplain.
- Describe methods of access to the site — is it temporary or permanent?
- Describe construction method — i.e. where will the equipment be working: from the left bank, right bank, both banks or in-channel?
- Describe construction sequence — access, removal of material, stockpiles (where), placement of structures, cleanup.
- Describe any upland elements of the construction including detours.
- Describe any temporary access areas created or other areas temporarily disturbed in the uplands, wetlands, waters, riparian areas.
 - How will they be restored?
 - Is there a revegetation plan? Include the revegetation plan with the Biological Evaluation/Assessment.
- How long will it take to construct the project?
- When do you propose to construct the project?

Action Area

NOTE: In order to cover all the potential impacts to all the listed species that may be affected by your project, the action area may be quite large. However, you need only provide environmental baseline/effects information for the potential area of effect for each habitat element, pathway, or indicator. For example, you may have a radius of "x" feet/miles around the project for potential noise impacts to listed birds, a radius of "y" feet around the project for potential water quality impacts to salmonids, their food source, or spawning/rearing areas, and a radius of "z" feet around the project for potential impacts to riparian, wetland, and aquatic vegetation for salmonid habitat. Your total action area will be the greatest distance of all these potential areas of effect combined.

- Include the proposed structure and any ancillary elements (excavation, filling {bank and instream –up/down stream- hardening}, temporary/permanent access, detours).
- Describe all elements of construction including, but not limited to, access roads, staging areas, equipment washout and refueling areas, stockpiling areas and restoration of these areas.
- Include all interrelated/interdependent activities with the culvert and/or road.
 - i.e. a new/retrofitted culvert or road is built in association with a new house or subdivision — the new house/development is an interrelated activity.
- Include the potential areas of effect in relation to potential impacts to habitat pathways/indicators for that species.
 - i.e. for fish there is a concern about sediment suspension and deposition that can occur from culvert placement and new road ditches. What is the potential distance that the construction and/or operation may impact water quality (discuss turbidity levels, sediment deposition, temperature changes within this distance at both temporary and permanent levels) and why?
- Mitigation is part of the action area and all direct, indirect, temporary, and long-term impacts that may occur to waters of the US need to be addressed.

Species Habitat Information:

- How do the listed species utilize the action area?
 - i.e. do fish spawn, rear and/or migrate in the area?; bald eagles and marbled murrelets may nest, overwinter, and/or forage in the area — how will maintenance of the roads and culverts impact the species?
- In the action area, is there essential habitat (rearing and spawning areas) for forage fish or other species that may be a primary food source for the listed species?

Environmental Baseline:

- Describe the habitat in the action area considering the potential area of effect discussed under Action Area. This may be described by:
 - Substrate type (sand, mud, cobble).
 - Presence or absence of wetlands, riparian areas and riffle/pool complexes.
 - How does the water from the wetland exit the site – i.e. does the water leave as

- sheet flow, channel flow or groundwater.
- Water depths, velocity, slope of the proposed crossing.
- If the site is presently culverted is the present culvert inadequate and why?
- Presence or absence of large rocks, boulders and large woody debris in the action area.
- Results of species use from known surveys in the area or similar areas.
- Describe the amount of human activity in the action area.
 - Are there other crossings in the area, how many, where?
 - What is the amount of development in the area, how much is impermeable surface in the watershed, what is the general use of the watershed area — i.e. rural, semi-urban, urban. If semi-urban or urban what is the time frame of development — i.e. no or some new development has occurred in “x” number of years.
 - Has the waterbody to be crossed been armored — to what extent and where?
 - Is there riparian/wetland vegetation in the project and action area?
 - ❖ What are the dominant species?
 - ❖ Are invasive, non-native species dominant?
 - ❖ How do these areas rate in terms of function – i.e. sediment stabilization, nutrient transformation, etc.?
 - Is the area culverted now? What is its size and adequacy, does it block fish passage?

Effects of the Action:

- What and how long are the temporary/permanent impacts to water quality and fish from the installation of culverts and road?
 - If bank/instream hardening is to occur where is it, what type is it, where will the equipment be placed (i.e. left/right bank both banks, in channel, at/above/below the ordinary high water mark) and what are the up and downstream effects on the stream?
 - Is riparian/wetland vegetation and/or large woody debris being removed? How much and will it be mitigated for and how?
 - Is the culvert appropriately sized, how was this determined, does it follow WDFW culvert criteria?
 - New roadside ditches are a large source of sediment — how will this be controlled during construction and over the project life?
 - How will runoff from the finished road be controlled and treated (oil and grease, heavy metals).
 - How much sediment will be suspended, how far will it be transported, where will it settle out and does this impact spawning or feeding areas?
- What are the temporary/permanent changes to local surface hydrology?
 - Will the area be channelized or riprapped or have large woody debris removed and where? Will this be mitigated?
 - Will the proposed work dewater or increase water in nearby wetlands — how will this be mitigated?

- Will the wetlands change in vegetation form – i.e. forested community to emergent?
- In the action area, how will stormwater be treated and managed?
 - Will the discharge area be changed from a diffuse source to a point source – i.e. from subsurface (groundwater discharge) to surface—i.e. culverts; if so, how will the resultant stream degradation be avoided and/or treated. What kind and how far will the degradation occur?
- In the action area, what types of vegetation will be removed, where and why (this includes upland areas)?
 - Will replanting occur?
 - What are the impacts to the water body associated with these activities (note changing vegetation from a forested system to one with lawns increases surface runoff and stream degradation)? How will these be mitigated?
- How will the water be diverted to install the culvert(s)?
 - Will the old channel have water in it while work is being done?
 - Will the water be blocked during construction and installation of the work?
 - If the water is diverted how will the fish present be moved — netting, electroshocking?