ECOLOGIST'S GUIDANCE FOR FISH PASSAGE

These general guidelines should be used by the department's ecologists when determining whether a particular stream crossing needs to be designed to account for fish passage. Site specific conditions may warrant deviation from these guidelines. Early coordination is necessary because revising a stream crossing during the later stages in the plan development process has the likelihood to add significant delays due to the design rework and risks significant overruns in the overall cost of the project. See chapter 9 of the Department's Drainage Manual for the procedure to design a crossing for fish passage.

Crossings designed for fish passage allow hydraulic connectivity for fish and other wildlife. Hydraulic connectivity provides fish the ability to move more freely through their ecosystem so that they can seek food, shelter, seek mating partners, escape predation, seek out habitat suitable to the life stage they are currently in, and relocate in response to seasonal or extreme natural disturbance. Streams and rivers act like roads for aquatic and non-aquatic life; maintaining hydraulic connectivity in those streams is important to those species so that they can seek out resources for survival and enhance their genetic biodiversity.

In general, bridges and bottomless culverts provide the least amount of impacts to fish movement. Embedded culverts create minor but generally acceptable impacts to fish movement. Non-embedded culverts can potentially create major barriers to fish movement.

Fish passage needs to be considered for every crossing over a perennial water of the United States. If the project falls under the regional permit, the use of a bridge, bottomless culvert, or embedded culvert does not impede fish movement; therefore no special permission needs to be requested for these types of crossings.

If the project is extending an existing non-embedded culvert, the culvert extension does not need to be designed for fish passage. No special justification is needed for culvert extensions.

If the project is replacing a bridge or bottomless culvert with an embedded culvert or standard box culvert, then a justification must be provided why replacing with a bridge or bottomless culvert is not an optimal solution.

If the project falls under an individual permit, justification must be provided for each crossing that is not using a bridge or bottomless culvert.

Requirements for Justifications:

There may be site specific circumstances as to why designing for fish passage is not practical. For these situations, the ecologist with input from the designer, must provide justification the USACE that validates why designing for fish passage is not practical. This justification must summarize these

circumstances and weigh the tradeoffs between designing or not designing for fish passage. These justifications will be reviewed by the USACE on a case by case basis.

Along with every justification, a cost estimate must be provided that shows a side by side comparison of the costs associated with designing for fish passage vs. not designing for fish passage. These estimates must include the following costs: construction (including earthwork, pavement, guardrail, approach slabs, erosion control, etc.), right of way, maintenance, mitigation, and any other costs associated with construction of the crossing.

Aside from the requirements set forth in the USACE permit, there may be other circumstances where stream crossings need to be designed for fish passage. The most common would be to protect the habitat of threatened or endangered species.