

U.S. Fish and Wildlife Service
Best Management Practices (BMPs) for Construction Projects Affecting
the Yellowcheek Darter (*Etheostoma moorei*)

Road Crossings

1. Consult with U.S. Fish and Wildlife Service Ecological Services Office during project scoping/planning (federal/state permits and translocations may be necessary and other listed species may be present in the project action area)
2. Deploy all pertinent stormwater BMPs for erosion control throughout duration of project
3. Cross stream channel at perpendicular angles to limit project footprint
4. Cross streams in areas with bedrock bottom or otherwise lacking gravel/cobble/boulder substrates
5. Capture any geotechnical drill tailings or slurry and dispose of properly
6. Avoid placing bridge piers below the ordinary high water mark of the stream if feasible
7. Bridge openings should be 120% of bank full channel width to reduce scouring during high water events
8. Use bottomless or submerged culverts if bridging is not feasible
9. Forging of the stream is prohibited during construction
10. Use only non-erodible fill materials for any work pads necessary for construction
11. Maintain natural flows by working from only one side of the stream at a time and use culverts to prevent eddy effects of work pads
12. Capture runoff from bridge and direct into detention structures for remediation where feasible (should capture at least the first one-half inch of climatic event)
13. Do not store heavy equipment, toxic materials, or vehicles within 300 feet of stream channel during construction activities
14. Restore stream bank and re-vegetate to natural conditions post-construction to the extent practicable

Utility Crossings

1. Use any applicable BMPs from *Road Crossings* (including pre-construction consultation)
2. Directional boring of perennial streams is preferred (use at least 50 ft. setbacks from stream and maintain riparian vegetation buffers)
3. Attach utility line to existing bridge structures when feasible
4. Open cut trenching of intermittent and ephemeral streams should be conducted during dry season (July – October)
5. Open cut trenching should deploy coffer dams and be conducted in phases to avoid damming of stream
6. Trenches in areas of bedrock should be backfilled with a concrete cap to prevent future scouring out of the backfilled material
7. Complete concrete encasement or other reinforcing BMP might be appropriate depending on the toxicity of the material being transported through the pipeline
8. Emergency shut off valves on both sides of the stream may be appropriate