

Table D. 404/401 Application: Proposed Lowering of Water Quality by the Preferred, Minimal, and Non-Degradation Alternatives.

Alternative	Expected Impacts by Alternative						Summary for Alternative
	Direct Stream Impacts	Aquatic Hab. (QHEI)/HHEI/Use Designation/Stream Flow	Aquatic Biota	T & E Species <sup>[1]</sup>	Terrestrial Plant/Animals (Riparian Area)	Wetlands	
Minimal Degradation	<p>Primarily short-term construction impacts (increased erosion and sedimentation); Overall, no long-term impacts to water quality are expected.</p> <p>Total Stream Impacts: 3,547 linear feet Temporary Fill: 0.439 acres Permanent Fill: 1.927 acres</p>	<p>Stream 1/56 (HHEI)/Intermittent Stream 2/64 (HHEI)/Intermittent Stream 3/45 (HHEI)/Intermittent Stream 4/50 (HHEI)/Intermittent Stream 5/64 (HHEI)/Intermittent Stream 6/64.25 (QHEI)/Perennial Stream 8/14 (HHEI)/Intermittent Stream 9/78 (HHEI)/Intermittent Stream 10/24 (HHEI)/Intermittent Stream 12/69 (HHEI)/Intermittent Stream 13/51 (HHEI)/Intermittent Stream 14/56 (HHEI)/Intermittent Stream 15/57.5 (QHEI)/Perennial Stream 16/56 (QHEI)/Perennial</p>	<p>The existing fish and macrobenthos are expected to be displaced, but not significantly affected within any stream. Examples of fish species include: largemouth bass (Micropterus salmoides), white suckers (Catostomus commersoni), smallmouth bass (Micropterus dolomieu), creek chub (Semotilus atromaculatus), sunfish (Lepomis sp.). Several examples of macrobenthos species include: Hydropsyche sp., Argia sp., Gammarus sp., Chironomidae sp., and Hirudinea sp.</p>	<p>No federal/state threatened or endangered species were identified in the project area. The range of the Indiana bat (Myotis sodalis), the piping plover (Charadrius melodus), and the bald eagle (Haliaeetus leucocephalus) include Lake County. It is unlikely that any of these species will be adversely affected.</p>	<p>Very common plant, mammal, bird, reptile, and amphibian species. Examples of mammal, bird, and amphibian species include: white-tailed deer (Odocoileus virginianus), raccoon (Procyon lotor), European starling (Sturnus vulgaris), Northern cardinal (Cardinalis cardinalis), and green frog (Rana clamitans). Examples of plant species include: silver maple (Acer saccharinum), chicory (Cichorium intybus), tall fescue (Festuca elatior), common reed (Phragmites australis), and Kentucky bluegrass (Poa pratensis). These species are expected to be displaced, but not significantly affected within any stream.</p>	<p>Non-Isolated Total Impact: 3.53 acres  3.51 acres of impact for non-forested Category 1 wetlands; 0.02 acres of impact for forested Category 2 wetlands  Isolated Total Impact: 0.02 acres  0.01 acres of impact for non-forested Category 1 wetlands; 0.01 acres of impact for forested Category 1 wetlands</p>	<p>No permanent impacts to sensitive habitats, T&amp;E species, or terrestrial species, or aquatic biota. Siltation resulting from the construction activities may reduce species diversity and abundance during construction and shortly afterwards. However, it is unlikely that construction activities will result in the permanent loss of any aquatic species. The project may require the cutting of several trees that possess Indiana bat roosting potential.</p>
Non-Degradation	None	No impacts as current structures are in place (culverts, bridges, etc.)	None	None	None	None	No impacts for this alternative.

[1] Impact footprint of the Preferred Alternative includes areas upstream and/or downstream of proposed structures where energy and erosion control components (channel protection) are required to achieve pre-construction stream velocity, water surface elevation and channel stability conditions; no impact to stream flow patterns are expected.