Compensation Measure

1) In order to offset unavoidable adverse effects on Indiana bats and their summer roosting and fall swarming habitat(s), KYTC will contribute to the Imperiled Bat Conservation Fund (IBCF). The funds in the IBCF are used to permanently protect Indiana bat habitat in Kentucky for the conservation and recovery of the species. This mitigation measure would have a beneficial effect on the Indiana bat by ensuring that the species has suitable habitat available throughout their lifecycle. The contribution to the IBCF is expected to promote the survival and recovery of the species through protecting and managing existing forested habitat suitable to support the species, particularly those that would expand existing conservation ownerships.

   KYTC proposes that contributions to the IBCF will be determined and computed on a project-by-project basis and will be based on the following formula: (acreage of impact) X (median land cost) X (mitigation multiplier) = amount of contribution.

   The acreage of impact (Acreage) will be the number of acres of Indiana bat habitat that a proposed project will directly or indirectly impact (remove). For impacts to: a) continuous, unbroken habitat areas, the Acreage will be the number of acres to the nearest hundredth acre; b) areas containing widely spaced or less than 20 trees, the Acreage will be the number of trees that have been determined to exhibit those characteristics suitable for Indiana bat summer habitat (any tree over 5" diameter at breast height) present within the impacted area multiplied by 0.09 (the area occupied by a tree with a 35-foot crown radius); and c) projects containing both continuous, unbroken habitat and widely spaced, fragmented or less than 20 tree, Acreage will be determined using a combination of both calculation methods described above.

   Through an on-going assessment of bridges within the Commonwealth of Kentucky, KYTC has reviewed 260 structures throughout the state. The assessed bridges have spanned a variety of sizes and bridge types, including bridges from 21 to 727 feet long and bridge types such as channel beam, box beam, pre-stressed concrete beam, metal beams, box culverts, and numerous others. The majority (92%) of these structures were identified as either unsuitable for bats or no bats or signs of bat use were observed. The remaining bridges (8%) had bats actively roosting on the structure or signs of bat use were observed. To determine the amount of potential roosting habitat for bats on each bridge, the bridge length and width were multiplied to calculate an acreage for each structure. Structures with documented bat use are generally larger than the average bridge, with a median size of 0.10 acre for bridges with bat use compared to 0.02 acre for all the bridges assessed to date. Based on this data, KYTC proposes to use 0.10 acre per bridge to calculate the amount of suitable bat habitat loss for projects involving bridges impacts.

   The median land cost will be the most recently published median agricultural land cost on a per acre basis. This cost is intended to provide an index of the estimated replacement cost of Indiana bat habitat in Kentucky. This number will be updated each time the United States Department of Agriculture publishes a new cost (typically the beginning of August).

The mitigation multiplier factor is derived from the habitat type that will be impacted and season the project impacts occur. The Indiana bat habitat map (attached as Appendix D) displays the habitat types that are based on the known records of Indiana bat captures and hibernacula locations. Table 1 shows each mitigation multiplier, based on habitat type, and the seasonal dates of each habitat type depicting when that habitat is expected to be active or inactive by Indiana bats.

Table 1. Proposed Indiana Bat Mitigation Multiplier Matrix

Habitat Type	Active Season (**)	Active Dates	Inactive Season	Inactive Dates
Known Swarming	2.25 (2.75)	April 1 to Nov 14	1.75	Nov 15 – March 31
Known Summer	1.75 (2.25)	April 1 to Oct 14	1.25	Oct 15 – March 31
Unsurveyed	1.0 (1.5)	April 1 to Oct 14	0.5	Oct 15 – March 31

** Ratio for tree removal in June and July. Use requires KYTC coordination with the KFO for project specific evaluation.
NOTE: For the purposes of the mitigation multiplier, swarming active season dates also consider the active dates of known summer and unsurveyed habitat types because Indiana bats likely use known swarming areas during these active timeframes of their life cycle as well.

2) If it is determined that a different mitigation opportunity (i.e., range-wide ILF program, species mitigation bank, in-kind mitigation, etc.) is available and/or more appropriate, KYTC will coordinate with the KFO to ensure project impacts are accounted for sufficiently.