

IV. BASELINE INFORMATION

Description of Mitigation Project

The proposed mitigation project is located in the City of Olathe in southern Johnson County, Kansas, along Coffee Creek (See Figure 1). The approximate center of the mitigation project is at 38.82356° North, 94.79201° West. It resides in the northwestern quarter of Section 19, Township 14 South, Range 24 East (see Figure 2).

The central and southern portions of very eastern Kansas are in the Central Irregular Plains Level III Ecoregion which was historically characterized by a mixture of tallgrass prairie and oak-hickory forests. This area has more topographic variation and more forested land cover than the Western Corn Belt Plains Level III Ecoregion to the north, less cherty and rocky soils than the Flint Hills to the west and significantly less topography and forested cover than the Ozark Highlands to the east in Missouri. Soils in the Central Irregular Plains generally lack any glacial drift and have thinner loessial soil components than in the Western Corn Belt Plains to the north. At a more local scale, the mitigation project resides in the Osage Cuestas Level IV Ecoregion which historically consisted of primarily tallgrass prairies in its western portion and a mosaic of tallgrass prairies and oak-hickory uplands and floodplain forests in the eastern part of this area where the mitigation project is located. Alternating layers of limestone, sandstone and shale underlie moist silty clay loam soils and current land use consists of woods, row crops, grasslands and urban areas. The topography of this area is that of a plain with escarpments with less vivid extremes than the Flint Hills to the west (Chapman *et al.*, 2001).

The proposed mitigation project is located in an area surrounded primarily by agricultural land use with a growing amount of residential development as shown in Figure 4. The majority of the mitigation site is within the Federal Emergency Management Agency-delineated 1% annual chance floodplain as shown in Figure 5. The U.S. Fish & Wildlife Service's National Wetlands Inventory map as presented as Figure 6 shows that there are no mapped wetlands on the parcel. In addition, the U.S. Geological Survey topographic map shows that most of the project exists as the land adjacent to Coffee Creek as displayed on Figure 3.

According to the U.S. Department of Agriculture's Natural Resources Conservation Service, the soils found within the parcel include Kennebec silt loam, occasionally flooded (7050). The Kennebec silt loam is listed as hydric in Johnson County, Kansas. The soils map is included as Figure 7.

Vegetation observed within the site included: hackberry (*Celtis occidentalis*), Virginia wild rye (*Elymus virginicus*), poison ivy (*Toxicodendron radicans*), bristly green briar (*Smilax hispida*), coralberry (*Symphoricarpos orbiculatis*), sycamore (*Platanus occidentalis*), roughleaf dogwood (*Cornus drummondii*), silver maple (*Acer saccharinum*), Osage orange (*Maclura pomifera*), lateflowering thoroughwort (*Eupatorium serotinum*), common blue violet (*Viola sororia*), giant ragweed (*Ambrosia*



trifida), marshpepper knotweed (*Persicaria hydropiper*), cottonwood (*Populus deltoids*), American elm (*Ulmus americana*), whitegrass (*Leersia virginica*), devil's beggartick (*Bidens frondosa*), green ash (*Fraxinus pennsylvanica*), bur oak (*Quercus macrocarpa*), black snakeroot (*Sanicula odorata*), Mexican hat (*Ratibida columnifera*), wild bergamot (*Monarda fistulosa*), Indian grass (*Sorghastrum nutans*), cup plant (*Silphium perfoliatum*), black willow (*Salix nigra*), common spikerush (*Eleocharis palustris*), barnyard grass (*Echinochloa crus-galli*), softstem bulrush (*Schoenoplectus tabernaemontani*), common ragweed (*Ambrosia artemisiifolia*), Eastern gamagrass (*Tripsacum dactyloides*), and Maximilian sunflower (*Helianthus maximiliani*). Photographic documentation of the parcel is included as Appendix B.

V. DETERMINATION OF CREDITS

As shown below in Image 1, a total of 1.02 acres of wetlands will be enhanced along with 1.11 acres of buffer enhancement and 581 linear feet of intermittent stream channel preservation. The wetland enhancement generates 0.77 acres of wetland credit at a ratio of 1.5:1 and the buffer enhancement and stream preservation generates 0.28 acre of wetland credit at a ratio of 4:1 for a combined total of 1.05 wetland credits. This exceeds the credit requirement to mitigate for the 0.99 acre of wetlands permanently impacted by the permitted project.

