

**Appendix K – Summary of Plant Species
Found Within the Project Area**

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The proposed project occurs within the Southern Appalachians ecoregion, which stretches from Kentucky to Alabama with open, low mountains containing a mosaic of forest, woodlands, and some cropland and pastures (Griffith et al. 1998). The Southern Appalachian ecoregion is divided into three subcoregions (The Cumberland Plateau, The Plateau Escarpment, and the Sequatchie Valley). The Chicago Bridge and Iron site is exclusively found within the Sequatchie Valley, which bisects the Southern Appalachian ecoregion. The open valley floor is underlain by limestone, dolomites, and shale and provides a productive area for agriculture.

The vegetative (physiognomic) classes observed on the project area were dominated by herbaceous vegetation with deciduous forests occupying the edges of the project site and along the narrow strips of riparian areas near Graham Branch and its tributaries as well as the Tennessee River channel. Small areas of mixed evergreen forest were found along fencerows and near the proposed rail line where it connects to the existing line.

Herbaceous Vegetation

Proposed construction site: Agricultural, in the form of actively producing hayfields, occupy over 90 percent of the proposed construction site. Bahia grass, broomsedge, crabgrass, Dallas grass, purple sprangle top, purple love grass, and redtop panic grass were the common grass species. Scattered forbs such false dandelion, ironweed, and golden rods were also present. In addition, two areas within the fields were seasonally wet and contained some wetland vegetation. Scattered American cottonwood seedlings along with flatsedges and rushes were found under the transmission line. A small area between the transmission line and the river was predominately covered with *Steinchisma hians*-gaping grass (an obligate wetland species) mixed with buttonweed, redtop panic grass, and rushes and sedges.

Proposed rail line and borrow area: Within the area of the proposed project, most of the land being used for the proposed rail line is similar to the vegetation observed for the proposed construction site. The proposed rail line and borrow area off site is located across the road from the proposed project area, and approximately 33 percent of this land is in the form of fields undergoing secondary succession. Narrow-leaf sunflower was the most dominate species along with broomsedge, purple sprangle top, and ragweed. Other herbaceous species present were Canada goldenrod, cypress weed, Florida paspalum, hyssoleaf thoroughwort, and small-head doll's eyes. Recruitment of woody vegetation as present, with eastern red cedar, pines (loblolly, shortleaf, and Virginia), persimmon, red bud, and blackberry. Japanese honeysuckle and sericea lespedeza were common invasive species observed.

Proposed TL relocation: Most of the proposed transmission line reroute would be over hayfields that have similar vegetation characteristics as described above.

Deciduous Forests

Approximately 8 percent of the remaining acreage is in the form of deciduous forests.

Proposed construction site: A small area of upland oak-hickory forests is located along the property's south boundary. Oaks (black, post, Shumard's and southern red) and hickories (mockernut and pignut) are found in the canopy layer. The subcanopy is composed of hackberry, ironwood, and Chinese privet. Deciduous trees associated with the linear wetland were oaks (water and willow) in the canopy with black willow, box elder, green ash,

red maple, river cane, and silky dogwood in the understory. Woody vines observed were green briar, Japanese honeysuckle, poison ivy, and trumpet creeper. In the herbaceous layer, asters, barnyard grass, black-eyed Susan, jump seed, river oats, smartweeds, Spanish needles, and three-way sedge were common. A forested wetland was associated with a seasonally wet pond where American sycamore and water and willow oak were the common canopy species. Chinese privet, green ash, muscle wood, red maple, red mulberry, wild black cherry, and winged elm occur in the understory. Green brier, rattan vine, and Virginia creeper were common woody vines observed. Other invasive species encountered were mimosa, Japanese honeysuckle, and multiflora rose.

TVA property: The vegetation within the TVA shoreline management zone is a riparian area with American sycamore as the dominate canopy species. Common understory and shrubs observed were black willow, buttonbush, river birch, tag alder, and tall false indigo. American water-willow, asters, deer tongue, fall panic grass, groundnut, horsetail, redtop panic grass, river cane, river oats, and smartweeds make up the herbaceous layer. Invasive species encountered were Bradford pear and Brazilian waterweed.

Proposed rail line and borrow area: The only forested areas within the footprint of the proposed rail line are located along the northeastern boundary of the Chicago Bridge and Iron property and within the adjacent property where the proposed rail line would connect to the CSX main railway. Riparian forests similar to those found along the shoreline were found near Graham Branch. Outside the proposed construction area, upland mixed hardwood forests dominated by oaks and hickories with occasional eastern red cedar were found in the area of the proposed rail line on the adjacent property. Approximately 250 feet of evergreen forests (predominately pines with eastern red cedar) would be cut for the proposed rail line. Vegetation is similar to upland areas described above.

Proposed transmission line relocation: Only a small portion of the new transmission line would impact forested areas. Vegetation along the southeastern boundary is similar to forested wetland areas previously described.

No uncommon terrestrial plant communities, designated critical plant habitat, or otherwise noteworthy botanical areas occur on or adjacent to the project area.

Invasive Terrestrial Plant Species

Executive Order 13112 defines an invasive nonnative species as any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem and whose introduction does or is likely to cause economic or environmental harm or harm to human health (USDA 2007). Invasive nonnative plants infest under and beside forest canopies and occupy small forest openings, increasingly eroding forest productivity, hindering forest use and management activities, and degrading diversity and wildlife habitat. They occur as trees, shrubs, vines, grasses, ferns, and forbs. Some have been introduced into this country accidentally, but most were brought here as ornamentals or for livestock forage. These robust plants arrived without their natural predators of insects and diseases that tend to keep native plants in natural balance. Now they increase across the landscape with little opposition, beyond the control and reclamation measures applied by landowners and managers on individual land holdings (Miller 2003).

According to the Federal Noxious Weed List of 2006 (USDA 2007), there are no known federal noxious weeds reported from the lands around the proposed project. In addition,

Southeastern Exotic Plant Pest Council (2006) provides a list of nonnative invasive species that could pose potential threats to native ecosystems and human health for each southeastern state. In reviewing the Tennessee exotic plant pest list (Tennessee Exotic Plant Pest Council 2001), there were seven (RANK I) species that pose a severe threat to native ecosystems. The RANK 1 Invasive exotic plant species include: Chinese privet, Japanese honeysuckle, Japanese stiltgrass, Johnson grass, mimosa, multiflora rose, and sericea lespedeza. All of these species have the potential to adversely impact the native plant communities because of their potential to spread rapidly and displace native vegetation. Brazilian water-weed, a submerged aquatic found growing in the Tennessee River, is considered a RANK 3 species (a lesser threat that is not expected to alter native ecosystems) and Bradford pear is found on the Tennessee watch list. Essentially the entire proposed project is on land in which the native vegetation has been extensively altered as a result of previous land use history. Most of these invasive species are RANK 1 (severe threat) and are of high priority to TVA (James 2002).

References

Miller, J. H. 2003. *Nonnative Plants of Southern Forest*. Asheville, N.C.: USDA, Forest Service Tech. Rep. SRS-62.

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