

3.11 Biological Resources

This section describes the affected environment and -potential environmental consequences on biological resources that would result from planned capital improvements [and planned system operations](#) under the Proposed Acquisition. The subsections that follow also describe the study areas for the planned capital improvements, data sources, and approach that the OEA used to analyze potential impacts. The biological resources that this section discusses include plant communities, wildlife habitat (terrestrial and aquatic), special status species, and natural areas. Special status species include listed species or those proposed to be listed as threatened or endangered under the Endangered Species Act (ESA); candidate species for ESA listing; bald and golden eagles; and sensitive species listed by state agencies. In addition, consistent with previous mergers, OEA considered the potential impact of projected increases in rail traffic and resulting noise on wildlife and habitat, as appropriate.

3.11.1 Approach

[During scoping, commenters expressed concern that the Proposed Acquisition could increase the risk of train derailment occurring that would result in the spill or release of hazardous materials, such as crude oil, into the surrounding biological environment. Section 3.1, Freight and Passenger Rail Safety describes the potential impacts associated with the transportation of hazardous materials, including the risk of hazardous materials releases, in detail. OEA concludes the risk of a rail accident occurring that could result in a release of hazardous materials of any size onto the ground, where it could affect biological resources, is and would remain very low. The rail lines that would make up the combined CPKC system are and would continue to be maintained and operated in compliance with applicable federal regulations for rail transportation of hazardous materials. However, in response to public comments, OEA analyzed the potential impacts of a spill or release of hazardous materials on biological resources.](#)

If the Board authorizes the Proposed Acquisition, the Applicants plan to make certain capital improvements within the existing rail ROW to support the projected increase in rail traffic. Those capital improvements would include adding 10 new passing sidings, extending 13 existing sidings, adding a section of facility working track, and adding a section of double track. Because the Applicants have stated that the 25 planned capital improvements would be necessary to accommodate the increased rail traffic that the Applicants expect would occur as a result of the Proposed Acquisition, OEA has assessed the potential impacts of the 25 planned capital improvements as part of the environmental review of the Proposed Acquisition. However, the Applicants have also stated that the planned capital improvements would be added only as needed to support increased traffic. Therefore, the Applicants have not completed detailed design and engineering for the 25 planned capital improvements. Accordingly, OEA's analysis of the potential impacts from implementing the planned capital improvements is based largely on conceptual design information, as well as conservative assumptions about how construction would proceed.

The study area for biological resources includes the existing rail ROW at each planned capital improvement location. The ROW at these locations varies in width, extending between 35 and 100 feet from the centerline of the existing mainline, with most of the ROW extending 50 feet wide from the centerline. As detailed below in **Table 3.11-1** and **Table 3.11-2**, most of the study area consists of the existing railroad and ballast. See **Figure O.1-1** in **Appendix O** (pages 3-165) for the study boundary at each planned capital improvement. Consistent with past practice, OEA also considered the potential effects of projected increases in rail traffic, including potential increases in rail-related noise, on wildlife and critical habitat. This analysis focused on rail line segments where OEA anticipates that rail traffic could increase by eight or more trains per day, pursuant to the thresholds for environmental review at 49 C.F.R. § 1105.7(e). OEA expects that any increases in rail traffic would not have the potential to adversely affect other biological resources, such as fish or vegetative communities.

OEA consulted with local, regional, state, and federal agencies regarding the presence of special status species in the areas where the Applicants intend to make capital improvements. OEA researched the behavior of special status species and their preferred habitat to determine whether they may occur in the study areas. In addition, OEA researched invasive species lists for states with planned capital improvements. OEA conducted field work at the planned capital improvement locations from January 13-18, 2022, and January 24-28, 2022, to investigate baseline conditions, existing vegetation, wildlife presence, and protected species habitat. OEA conducted habitat-level field work at 24 of the 25 planned capital improvement locations through pedestrian surveys. OEA did not conduct field work at the location of the planned new siding at MP 75 near Monroe Township in Ogle County, Illinois because that planned new siding would be located within the footprint of a previously removed second track and would therefore not result in any new impacts.

OEA evaluated the potential effects of the planned capital improvements on special status species; other vegetation, fish, and wildlife; and natural areas and critical habitat in the study area. In its analysis, OEA used data from published reports, feasibility studies, regulatory agency documents, guidance manuals, discussions with resource personnel, aerial photographs, U.S. Geological Survey (USGS) topographic maps, field visits (January 2022 pedestrian surveys), and Geographic Information Systems (GIS) databases. OEA evaluated the potential effects of operations on wildlife and critical habitat throughout the mainline within the ROW using the USFWS Threatened and Endangered Species Active Critical Habitat Report GIS files (updated March 8, 2022).

3.11.2 Affected Environment

This subsection describes the affected environment with respect to biological resources. OEA characterized the affected environment in terms of general existing conditions within the study area, plant communities, wildlife habitat, special status species, and natural areas.

3.11.2.1 Study Area Existing Conditions

Because the planned capital improvements would be located within the existing rail ROW, the study area primarily consists of developed and heavily altered land that is barren due to the use of herbicides, mechanical clearing, and the placement of ballast within the existing railroad

corridor. **Table 3.11-1** summarizes the existing conditions of the 25 planned capital improvements. **Figure O.1-1** in **Appendix O**, pages 3-165, show maps of each planned capital improvement site, and pages 379-424 in **Appendix O** contain photos taken of site conditions during field work.

Table 3.11-1. Planned Capital Improvement Study Areas Existing Conditions (north to south)

Capital Improvement	Site Description
MP 71 (Turkey River), IA	Includes primarily forested wetlands located directly adjacent to the existing railroad and ballast sloping down into the Mississippi River backwaters with stagnant water and areas with no current.
MP 24 (Bellevue), IA	Includes mixed hardwood forested areas, residential and agricultural land use, and Spruce Creek Park is located within the southeastern portion.
MP 75 (Monroe), IL	Includes the existing mainline track and ballast from a previously removed siding that the Applicants plan to reuse for the new siding.
Deer Creek, IA	Includes upland mixed hardwood forested areas on steep slopes, bottomland mixed hardwood forest on the eastern side sloping down to the Mississippi River, and residential land use (residential buildings are not located within the study area). The Mississippi River is directly adjacent to the study area on the eastern side.
Camanche, IA	Includes primarily industrial land use and heavily disturbed and frequently maintained areas.
Letts, IA	Includes mixed hardwood forested areas separating the existing railroad from agricultural fields adjacent to the study area.
MP 255 (Washington), IA	Boundary narrowly falls along agricultural land with a small, isolated section of hardwood forest within the riparian zone surrounding South Fork Long Creek.
Ottumwa, IA	The existing siding that CP plans to extend is present within the study area. Boundary narrowly falls along agricultural land on the eastern end and two patches of hardwood forest. Highway 34 borders the study area on the southern side.
Moravia, IA	Includes primarily agricultural land with an area of hardwood forest on the eastern end.
Newtown, MO	Includes primarily agricultural land with no forested areas. Highway 139 borders the entire study area on the western side.
Laredo, MO	Boundary narrowly falls along agricultural fields with a section of mixed hardwood forest within the riparian zone surrounding a stream.
MP 431 (Dawn), MO	Includes primarily bottomland or lowland mixed hardwood forest and a riparian corridor for adjacent Shoal Creek, which are both bordered by agricultural land outside of the ROW.
Blue Valley, MO	Includes primarily industrial areas, some areas of mixed hardwood forest, and multiple limestone bedrock outcrops.
Grandview/IFG, MO	Includes primarily industrial areas with the northern portion being graded and filled.
Asbury, MO	Boundary narrowly falls along agricultural fields.
MP 186, MO	Includes primarily agricultural land with buffers of mixed hardwood forested areas.

Table 3.11-1. Planned Capital Improvement Study Areas Existing Conditions (north to south)

Capital Improvement	Site Description
Gentry, AR	Includes a maintained area between the railroad and Arkansas Highway 59 which borders the length of the study area. There are buffers of mixed hardwood forest between the highway and existing railroad.
MP 247 (Baron), OK	Includes primarily mixed hardwood forested areas and agricultural land. Includes scattered areas of river cane (<i>Arundinaria gigantea</i>).
Cave Springs, OK	Includes primarily mixed hardwood forested areas and agricultural land.
Spiro, OK	Includes primarily agricultural land and with areas of disturbed and previously cleared forested areas that are beginning to revegetate.
Heavener, OK	Includes primarily bottomland or lowland early successional (very young) mixed hardwood forested areas and agricultural land. Includes scattered areas of river cane.
MP 377 (Mena), AR	Includes primarily early successional (very young) mixed hardwood forested areas, recently cleared areas, industrial and agricultural land.
Mansfield, LA	Includes mostly maintained and historically cleared land that separates the existing railroad corridor from the highway corridor. There is a natural gas utility corridor that runs through the center of the study area.
Loring, LA	Includes primarily mature, mixed hardwood forest.
Singer, LA	Includes primarily maintained highway ROW with small areas of planted pine and early successional mixed hardwood forested areas.

3.11.2.2 Plant Communities

Vegetation provides habitat and food sources for wildlife, improves air quality, provides in-stream shade, filters stormwater, and contributes to flood control. Even though the study area is highly developed, the existing vegetation within and adjacent to the ROW provides important functions to the immediate surroundings, affecting natural resources. No ESA-listed threatened or endangered plant species or suitable habitat for those species are known to occur within the study area.

Invasive plant species identified during field work include: tree-of-heaven (*Ailanthus altissima*), wild chervil (*Anthriscus sylvestris*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), Chinese bushclover (*Lespedeza cuneata*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), Himalayan blackberry (*Rubus armeniacus*), Chinese foxtail (*Setaria faberi*), yellow foxtail (*Setaria pumila*), and Johnsongrass (*Sorghum halepense*).

3.11.2.3 Wildlife Habitat

Habitat and land use types within the study area include agricultural, maintained ROW, industrial, floodplain/rivers/streams, wetlands, residential, fallow field/early successional, and mixed hardwood forest (see **Table 3.11-2**, below, and **Figure O.1-1** in **Appendix O**). The existing riparian and forested areas are primarily located along the edge of the railroad ROW and extend outside the study area. Riparian and forested areas generally provide important habitat and resources for birds, fish, and wildlife. ~~In~~ [Within](#) the study area, however, [the](#)

[quality of these habitats has already been reduced by](#) herbicide use, mechanical clearing, and ballast placement within the railroad ROW. ~~have rendered most of these habitats as low quality.~~

Table 3.11-2. Total Acreage by Habitat Type within the Study Area (Totaled Across All 25 Planned Capital Improvement Locations)

Habitat Type	Acreage
Agricultural	49.4
Maintained Roadway ROW	29.7
Industrial	24.7
Riparian (Floodplain/Rivers)	12.6
Residential	9.6
Fallow Field/Early Successional Forest	3.3
Mixed Hardwood Forest	37.4
Existing Railroad and Ballasts	118.0

Previous construction activities for railway corridor, highways, and smaller roads, as well as actions associated with converting land for agricultural, residential, commercial, and industrial uses, have resulted in fragmentation of the habitat that remains in the study area. Land use changes have disrupted the original wildlife habitat continuity, which has likely affected wildlife foraging habits, reproductive habits, and migratory movements. To the extent that wildlife may still use the remaining patches of forested habitat along the existing rail line, those animals have likely adapted to the fragmented and heavily altered state of the habitat, as well as to exposure to intermittent noise from passing trains and other railroad-related activities, such as ROW maintenance.

Some of the planned capital improvements would be located within or along the Mississippi Flyway, which is a bird migration corridor used by birds protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (16 U.S.C. §§ 703-712) (BGEPA). During field visits at each of the planned capital improvement sites, OEA observed migratory bird nests, including barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), and eastern phoebe (*Sayornis phoebe*) nests in structures supporting the railroad, such as bridge abutments, and in vegetation within the rail ROW. **Appendix O** provides a summary of the structures with observed migratory bird nests at each of the planned capital improvement locations.

3.11.2.4 ESA-Listed Species

Early coordination with USFWS and use of their Information for Planning and Consultation (IPaC) tool (USFWS n.d.) indicated that a total of 29 federally listed species could be present in the study area (see **Table O.2-1** for the list of species in **Appendix O**). OEA identified suitable habitat for three of the 29 species within the study area. OEA identified suitable summer roosting and foraging habitat for both Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), as well as suitable foraging habitat for Ozark big-eared bat (*Corynorhinus townsendii ingens*). As a result, OEA eliminated the remaining species from

further consideration. [However, on September 14, 2022, USFWS published a proposed rule to list the tricolored bat \(*Perimyotis subflavus*\) as endangered following a 12-month finding on the listing petition to gather additional information and public comment. Because the proposed status anticipates a final listing decision within the next 12 months, OEA is addressing potential impacts on the tricolored bat in this section of the Final EIS.](#)

The Indiana bat (*Myotis sodalis*) is federally listed as endangered and has the potential to occur in a range of planned capital improvement sites in Illinois, Iowa, Missouri, Arkansas, and Oklahoma (**Table 3.11-3**). OEA identified suitable summer roosting habitat and foraging habitat throughout the study area (Luensmann 2005) at 13 planned capital improvement locations. In Iowa, OEA identified suitable Indiana bat habitat at the planned siding extension near Letts, the planned new siding at MP 255 near Washington, the planned siding extension near Ottumwa, and the planned new siding near Moravia. In Missouri, OEA identified suitable habitat at the planned siding extension near Newtown, the planned siding extension near Laredo, the planned siding extension at MP 431 near Dawn, the planned new siding at MP 186 near Goodman, the planned double tracking at Blue Valley, and the planned facility working track at Grandview/IFG. In Arkansas, OEA identified suitable habitat at the planned siding extension near Gentry. In Oklahoma, OEA identified suitable habitat at the planned new siding at MP 247 near Baron and the planned siding extension near Cave Springs.

At these locations, OEA identified summer roosting habitat in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. OEA identified foraging habitat in the canopy-enclosed flyways of forested edges of the railroad ROW, adjacent roads, and throughout riparian corridors. **Figure O.1-2 in Appendix O** shows suitable bat habitat identified within the study area.

The northern long-eared bat (*Myotis septentrionalis*) is currently federally listed as threatened; however, on March 22, 2022, USFWS announced a proposal to reclassify the northern long-eared bat as endangered. The species has potential to occur at some of the planned capital improvement sites in Illinois, Iowa, Missouri, Arkansas, Oklahoma, and Louisiana (**Table 3.11-3**). OEA identified suitable roosting and foraging habitat present throughout the study area (USFWS Environmental Conservation Online System n.d.) at 16 planned capital improvement locations. In Iowa, OEA identified suitable northern long-eared bat habitat at the planned new siding at MP 71 near Turkey River, the planned new siding at MP 24 near Bellevue, the planned siding extension near Deer Creek, the planned siding extension near Letts, the planned new siding at MP 255 near Washington, the planned siding extension near Ottumwa, and the planned new siding near Moravia. In Missouri, OEA identified suitable habitat at the planned siding extension near Newtown, the planned siding extension near Laredo, the planned siding extension at MP 431 near Dawn, the planned new siding at MP 186 near Goodman, the planned double tracking at Blue Valley, and the planned facility working track at Grandview/IFG. In Arkansas, OEA identified suitable habitat at the planned siding extension near Gentry and, in Oklahoma, OEA identified suitable habitat at the planned new siding at MP 247 near Baron and the planned siding extension near Cave Springs.

At these locations, OEA identified roosting habitat in the forested areas along edges of the railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. There was foraging habitat present in the canopy-enclosed flyways of forested edges of the

railroad ROW, adjacent roads, and throughout riparian corridors. **Figure O.1-2** in **Appendix O** shows suitable bat habitat identified in the study area.

The Ozark big-eared bat (*Corynorhinus townsendii ingens*) is federally listed as endangered and has the potential to occur at planned capital improvement sites in Arkansas and Oklahoma (**Table 3.11-3**). Based on consultation with USFWS, the Cave Springs capital improvement location area is within 1.5 miles of known caves occupied by Ozark big-eared bats. This species forages in forested habitats and edges in summer (both uplands and near water), but roosts exclusively in caves year-round. OEA did not identify any caves or cave features within the study area of the Cave Springs planned capital improvement; however, OEA did identify suitable foraging habitat in the canopy-enclosed flyways of forested edges of the railroad ROW. **Figure O.1-2** in **Appendix O** shows suitable bat habitat identified in the study area.

The tricolored bat, formerly known as the eastern pipistrelle (*Pipistrellus subflavus*) until recently, was a nearly ubiquitous species across eastern and central North America. Due to severe population declines from an introduced fungal disease that has substantially affected this and other federally listed bats, USFWS has recently moved to propose endangered status for tricolored bat. During fieldwork, OEA positively identified suitable habitat for the tricolored bat in many drainage and bridge structures. In addition, during consultation with the Missouri Department of Conservation, OEA identified occurrence records for this species near the study area for the planned double track near Blue Valley in Missouri (see **Table 3.11-4**).

Table 3.11-3. Potential Listed Species in Planned Capital Improvement Locations

Common and Scientific Name	States within Species Range	Counties within Species Range	Planned Capital Improvement Location where Species has Potential to Occur
Indiana Bat (<i>Myotis sodalis</i>)	Illinois	Ogle	MP 75 (Monroe)
	Iowa	Monroe, Louisa, Washington, Wapello	Letts*, MP 255 (Washington)*, Ottumwa*, Moravia*
	Missouri	Sullivan, Grundy, Livingston, Jackson, Jasper, Cass, McDonald	Newtown*, Laredo*, MP 431 (Dawn)*, Blue Valley*, Grandview/IFG*, Asbury, MP 186*
	Arkansas	Benton, Polk	Gentry*, MP 377 (Mena)
	Oklahoma	Adair, Le Flore	MP 247 (Baron)*, Cave Springs*, Spiro*, Heavener*
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Iowa	Clayton, Jackson, Clinton, Louisa, Washington, Wapello, Monroe	MP 71 (Turkey River)*, MP 24 (Bellevue)*, Deer Creek*, Camanche, Letts*, MP 255 (Washington)*, Ottumwa*, Moravia*

Table 3.11-3. Potential Listed Species in Planned Capital Improvement Locations

Common and Scientific Name	States within Species Range	Counties within Species Range	Planned Capital Improvement Location where Species has Potential to Occur
	Illinois	Ogle	MP 75 (Monroe)
	Missouri	Sullivan, Grundy, Livingston, Jackson, Cass, Jasper, McDonald	Newtown*, Laredo*, MP 431 (Dawn)*, Blue Valley*, Grandview/IFG*, Asbury, MP 186*
	Arkansas	Benton, Polk	Gentry*, MP 377 (Mena)
	Oklahoma	Adair, Le Flore	MP 247 (Baron)*, Cave Springs*, Spiro*, Heavener*
	Louisiana	De Soto	Mansfield
Ozark Big-eared Bat (<i>Corynorhinus townsendii ingens</i>)	Arkansas	Benton	Gentry
	Oklahoma	Adair	MP 247 (Baron), Cave Springs*
Tricolored Bat (Perimyotis subflavus)	Missouri	Sullivan, Grundy, Livingston, Jackson, Cass, Jasper, McDonald	Newtown, Laredo, MP 431 (Dawn)*, Blue Valley*, Grandview/IFG, Asbury, MP 186
	Oklahoma	Adair, Le Flore	MP 247 (Baron), Cave Springs, Spiro, Heavener

*OEA identified suitable habitat for this species at these capital improvement locations.

3.11.2.5 State-Listed and Sensitive Species

During early coordination with state agencies, OEA identified nine state-listed and state-ranked species that could be present in the study area (see **Table O.2-2** for the list of species in **Appendix O**). During agency consultation, OEA identified an occurrence record for only one of those nine species, the tricolored bat at the location of the planned double track near Blue Valley in Missouri (see **Table 3.11-4**). **Appendix O** presents OEA’s coordination letters with state agencies.

Table 3.11-4. State-Listed Species with Suitable Habitat in Planned Capital Improvements

Species Name	Status	State	Capital Improvement Location	Is Potentially Suitable Habitat Present in the Study Area?
Tricolored bat (Perimyotis subflavus)	S2 ¹	Missouri	Blue Valley	Yes, OEA identified potentially suitable habitat for this species in the bridges and culverts at this site. Coordination with the Missouri Department of Conservation indicated that there are records of this species near the study area.

¹ Critically imperiled in Missouri because of extreme rarity of or because of some factor(s) making it especially vulnerable to extirpation from the state (Missouri Department of Conservation 2021)

3.11.2.6 Bald and Golden Eagles

OEA observed one bald eagle (*Haliaeetus leucocephalus*) nest and a solitary, perching eagle in the vicinity of the nest within the study area of MP 431 near Dawn, Missouri. OEA did not identify suitable habitat for bald and golden eagles (*Aquila chrysaetos*) within the study areas at any of the other planned capital improvement locations.

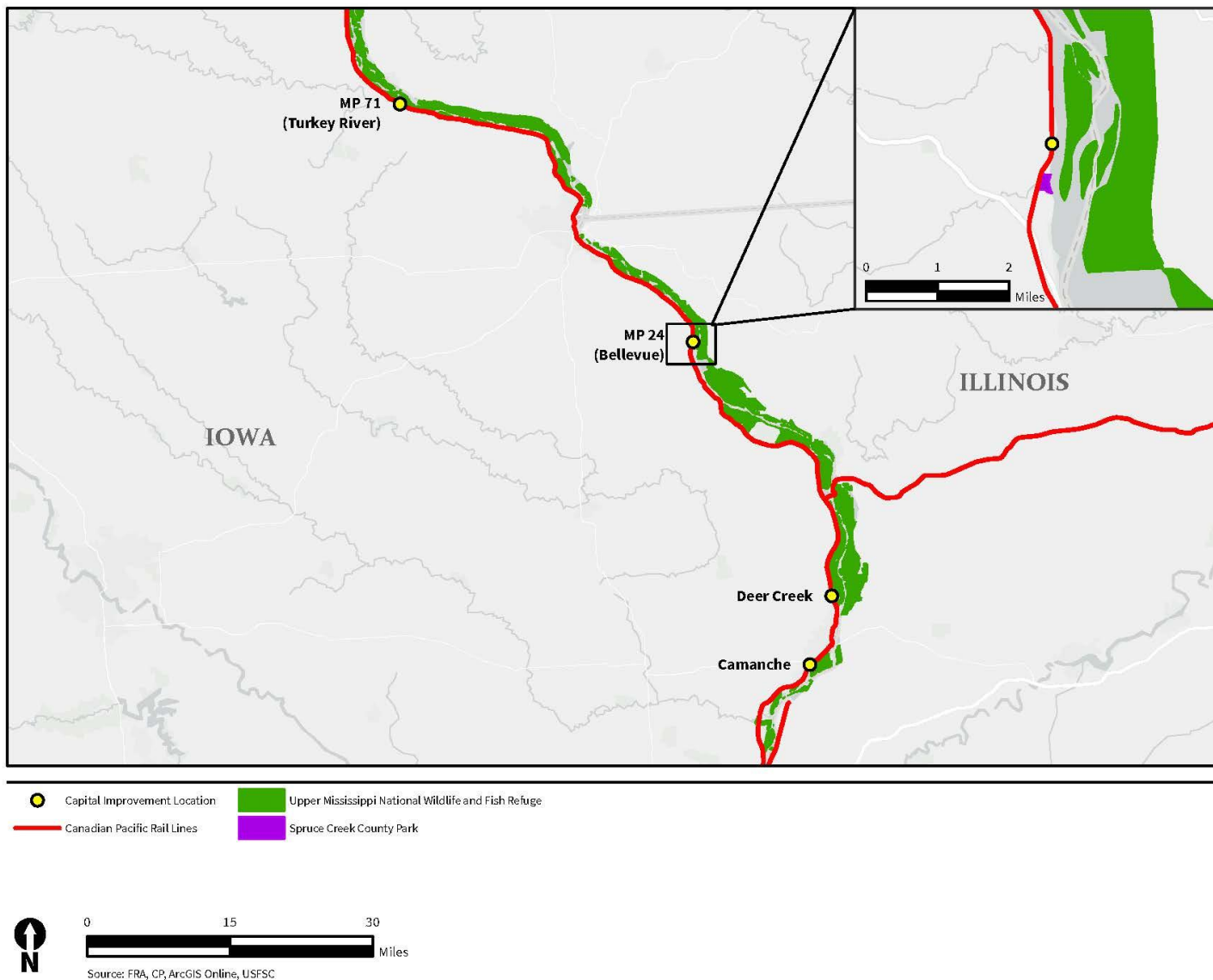
3.11.2.7 Natural Areas

Natural areas refer to areas that are protected under federal or state law for the purpose of providing habitat for native vegetation, fish, and wildlife. OEA identified two natural areas in the vicinity of the planned capital improvements in Iowa (**Figure 3.11-1**). The Upper Mississippi River National Wildlife and Fish Refuge is located adjacent to the rail ROW at the locations of the planned new siding at MP 71 near Turkey River, the planned new siding at MP 24 near Bellevue, the planned siding extension near Deer Creek, and the planned siding extension near Camanche. The rail line also bisects the Spruce Creek Park in Jackson County, Iowa at the location of the planned new siding at MP 24 near Bellevue.

3.11.2.8 Critical Habitat

As mentioned in *Section 3.11.1, Approach*, OEA reviewed the planned capital improvement sites and the existing mainline adjacent to the capital improvements for potential critical habitat. The IPaC reports indicated that there are no critical habitat areas within the capital improvement study areas. However, OEA identified critical habitat areas for five species within one mile or less from the existing mainline on segments that would experience an increase in traffic as a result of the Proposed Acquisition. See **Table O.2-3, Appendix O** for a summary of identified critical habitat areas. The five species with critical habitat areas include four species of freshwater mussel, the Neosho mucket (*Lampsilis rafinesqueana*) in Missouri and Oklahoma, rabbitsfoot (*Quadrula cylindrica*) in Arkansas and Missouri, the Texas fawnsfoot (*Truncilla macrodon*), Texas pimpleback (*Cyclonaias petrina*) in Texas, and one butterfly in Minnesota, the Poweshiek skipperling (*Oarisma poweshiek*).

Figure 3.11-1. Natural Areas Identified Adjacent to the Planned Capital Improvements



3.11.3 Environmental Consequences

3.11.3.1 Proposed Acquisition

The Proposed Acquisition would affect biological resources primarily because it would result in the 25 planned capital improvements. Some of the planned capital improvements would be mostly or entirely located within previously disturbed areas. For example, the planned new siding at MP 75 near Monroe Township in Ogle County, Illinois would be placed within the footprint of a previously removed second track. Therefore, no impacts on biological resources would occur at that location. However, for other planned capital improvements, tree clearing, grading, and placing fill material for additional track could occur outside of already disturbed areas. This subsection describes the potential impacts related to the planned capital improvements on plant communities; wildlife; special status species; and natural areas. As

appropriate, this subsection also discusses the potential impacts on biological resources that could be associated with increased rail traffic that would result from the Proposed Acquisition.

Plant Communities

[OEA expects that the planned capital improvements would result in minor adverse impacts to plant communities.](#) The 25 planned capital improvements would involve clearing, grubbing (removing roots from the soil), grading, and some excavating and placing fill material for additional track and siding within portions of the rail ROW. These activities could result in permanent or temporary alteration of existing vegetation. The extent of such impacts would vary based on the affected vegetation, relative abundance of vegetation, soil conditions, hydrology, topography, and the extent of clearing, grubbing, and earthmoving required. Land disturbing activities would occur within portions of the ROW for the capital improvements, such as clearing vegetation for staging areas and other temporary facilities. Although OEA expects vegetation to recover in the temporarily disturbed areas, clearing woody shrub and forest vegetation could permanently alter the vegetative cover class to nonwoody, herbaceous, and scrub/shrub classes.

Table 3.11-5 details the estimated acres of habitat that would be lost due to the planned capital improvements. The estimates in the table are based on the preliminary design information provided by the Applicants and OEA’s conservative assumptions, which may tend to overstate the affected area of habitat.

Table 3.11-5. Acres of Potential Plant Community Impacts by Capital Improvement Location

Capital Improvement	Acres of Potential Plant Community Impact
MP 71 (Turkey River), IA	10.6
MP 24 (Bellevue), IA	12.5
Deer Creek, IA	5.7
Camanche, IA	0.0 ¹
Letts, IA	2.8
MP 255(Washington), IA	8.1
Ottumwa, IA	1.9
Moravia, IA	7.9
Newtown, MO	2.2
Laredo, MO	2.3
MP 431(Dawn), MO	11.4
Blue Valley, MO	9.7
Grandview/IFG, MO	6.4
Asbury, MO	0.0 ²
MP 186, MO	2.0
Gentry, AR	2.5
MP 247 (Baron), OK	9.7

Table 3.11-5. Acres of Potential Plant Community Impacts by Capital Improvement Location

Capital Improvement	Acres of Potential Plant Community Impact
Cave Springs, OK	3.8
Spiro, OK	2.8
Heavener, OK	11.4
MP 377-Mena, AR	7.3
Mansfield, LA	6.6
Loring, LA	4.8
Singer, LA	7.0
Total	138.4

¹ The Camanche planned capital improvement would have no vegetative community impacts because it would be located entirely within a disturbed industrial area and adjacent to a rail yard.

² The Asbury planned capital improvement would have no vegetative community impacts because it would be located entirely within a maintained, grassy ROW between the existing railroad and an adjacent roadway.

Activities related to the planned capital improvements in general have the potential to increase the spread of noxious and invasive weeds. Noxious weeds are plants designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property (Bureau of Land Management [BLM] 2022). Invasive weeds are plants that have been introduced into a new habitat where they did not evolve and where they have no natural enemies to limit their reproduction and spread, with some producing significant changes to vegetation, composition, structure, or ecosystem function (BLM 2022; Westbrooks 1998; Cronk and Fuller 1995). Noxious and invasive weeds are often more aggressive than native vegetation, and the disturbed conditions of construction sites can create an environment where some noxious and invasive weeds thrive. Introduced noxious and invasive weeds that spread beyond the planned capital improvement sites could out-compete native vegetation and reduce the quality of understory habitat, increase soil erosion and fire hazards, and disrupt the ecosystem overall (USFWS 2012).

During the public comment period for the Draft EIS, commenters expressed concern that the Proposed Acquisition would increase the probability of a spill or release of hazardous materials that could adversely affect vegetation. OEA notes that the rail lines on which rail traffic would increase as a result of the Proposed Acquisition are already used to transport hazardous materials and have been for many years. As discussed in Section 3.1, Freight and Passenger Rail Safety, OEA expects that the Proposed Acquisition would result in only a minor increase in the probability of a release of hazardous materials. If a release were to occur, the impacts on vegetation would depend on the nature of the materials released, the volume of materials released, the location of the release relative to plant communities, and the effectiveness of the response. A release of hazardous materials could affect individual plants if they were exposed to a contaminant, which could cause injury, sickness, or death. A release could also result in

[the contamination of water or soil, which could affect plants. Chapter 4, Mitigation sets forth the mitigation measures that OEA recommends the Board impose to address impacts related to hazardous materials releases.](#)

Wildlife

OEA expects that the planned capital improvements would result in minor adverse impacts to wildlife. Activities within portions of the rail ROW, such as land clearing, earthmoving, constructing the railbed, laying rail line, and relocating roads could result in temporary and permanent impacts on wildlife. Permanently altered habitats would cause species displacement to similar adjacent habitat. The intensity of these impacts would vary depending on the type of habitat and specific species affected.

The planned capital improvements could also result in wildlife mortality or injury from construction-related collisions or crushing. Collisions or crushing would be more likely to affect smaller, less mobile species (such as reptiles and insects) that are not able to move away quickly from construction equipment. Collisions would be less likely to occur with larger animals and birds because those animals could move more quickly and vacate a construction area. Because construction vehicles typically move at slow speeds and because most construction activities would take place within or immediately adjacent to a previously disturbed and heavily maintained corridor, OEA expects that wildlife fatalities and injuries from operating construction equipment would be infrequent. While some species could be more susceptible to collisions or crushing, many species would likely vacate an area once land clearing activities start and noise and construction equipment become perceptible to wildlife. This temporary impact would only last for the duration of construction.

The Applicants project that the Proposed Acquisition would result in increased rail traffic on certain rail line segments throughout the combined CPKC network (see *Chapter 2, Proposed Action and Alternatives*). The projected increase in the average number of trains per day moving on certain rail lines would not result in new impacts on wildlife but could affect the frequency of impacts or the chance of an impact occurring. For example, OEA expects that increased rail traffic would increase the frequency with which animals would be struck and killed by trains and maintenance equipment. In general, wildlife mortality from train strikes is and would continue to be higher in areas where the density of wildlife is higher. Species that feed on carrion (flesh of dead animals), species that use the rail corridor for moving around, and species that use habitats adjacent to the rail line have an increased chance of fatality by a collision. [While there is a potential for increased wildlife mortality from train strikes, OEA concludes that such impacts would be minor and not have population-level effects on wildlife species.](#)

As discussed in detail in *Section 3.6, Noise*, OEA expects that the projected increase in rail traffic resulting from the Proposed Acquisition would cause average noise levels to increase in some areas along the combined CPKC network. OEA estimates that the increase in the Ldn would range from 0.0 to 6.9 A-weighted decibels and that the greatest increase would occur along the rail line segments that make up the CP mainline between Ottumwa, Iowa and Kansas City, Missouri. OEA expects that the potential increase in train noise along existing rail lines would not significantly affect wildlife because any animals living near active rail lines have likely already become habituated to train noise over many years of regular exposure to such

noise. [OEA recognizes that certain species of wildlife may not become habituated to train noise; however, to the extent that such species may have once lived in the areas where the existing CP and KCS rail lines are located, those animals will have relocated long ago in response to train noise.](#) Although noise can affect birds in particular by interfering with communication, research suggests that noise occurring at regular intervals (such as noise from passing trains) may cause insignificant impacts on bird density compared to continuous noise (such as from vehicular traffic on busy roads). Indeed, studies have found bird abundance to be higher near rail lines than in other areas, despite occasional noise, likely due to the presence of forest edge habitat that some species use for foraging and nesting (Wiacek et al. 2015; Wiacek et al. 2019).

[During the public comment period for the Draft EIS, commenters expressed concern that the Proposed Acquisition would increase the probability of a spill or release of hazardous materials that could adversely affect wildlife. OEA notes that the rail lines on which rail traffic would increase as a result of the Proposed Acquisition are already used to transport hazardous materials and have been for many years. As discussed in Section 3.1, Freight and Passenger Rail Safety, OEA expects that the Proposed Acquisition would result in only a minor increase in the probability of a release of hazardous materials. If a release were to occur, the impacts on wildlife would depend on the nature of the materials released, the volume of materials released, the location of the release relative to wildlife and wildlife habitat, and the effectiveness of the response. A release of hazardous materials could affect individual animals if they were exposed to a contaminant, which could cause injury, sickness, or death. A release could also result in the contamination of wildlife habitat. Chapter 4, Mitigation sets forth the mitigation measures that OEA recommends the Board impose to address impacts related to hazardous materials releases.](#)

Because OEA expects that increased rail traffic on the CPKC network would be diverted from other rail networks or from truck transportation, impacts on wildlife associated with increased rail traffic, such as increased frequency of wildlife strikes, [increased probability of releases of hazardous materials](#), and increased average noise level, would be at least partially offset by decreased rail traffic on other rail lines and decreased truck traffic on highways.

ESA-Listed Species

OEA estimates that construction activities could permanently clear a total of approximately 61.8 acres of potential forested bat habitat within portions of the ROW at 14 planned capital improvement locations. **Table 3.11-6** provides a summary of the acres of potential impact to bat habitat by capital improvement location.

Table 3.11-6. Acres of Potential Impact to Bat Habitat by Capital Improvement Location

Capital Improvement Site	Acres of Potential Impact to Bat Habitat
Letts, IA	3.2
Ottumwa, IA	0.1
MP 431 (Dawn), MO	7.6
MP 24 (Bellevue), IA	6.5

Table 3.11-6. Acres of Potential Impact to Bat Habitat by Capital Improvement Location

Capital Improvement Site	Acres of Potential Impact to Bat Habitat
Deer Creek, IA	3.8
MP 255 (Washington), IA	2.7
MP 71 (Turkey River), IA	6.9
Moravia, IA	3.8
Laredo, MO	1.7
Blue Valley, MO	9.4
MP 186, MO	0.7
Gentry, AR	4.1
MP 247 (Baron), OK	8.2
Cave Springs, OK	3.0
Total	61.8

OEA identified 35 bridges and culverts within the study area that provide suitable roosting habitat for the northern long-eared bat and Indiana bat. Plans are still in conceptual design, and some of the planned capital improvements could involve extending or replacing existing bridges and culverts, potentially including bridges and culverts that provide suitable roosting habitat. OEA determined that the planned capital improvements *may affect, but are not likely adversely affect* the Indiana bat, the northern long-eared bat, and the Ozark big-eared bat.

Pursuant to Section 7 of ESA, OEA notified the appropriate USFWS Ecological Services Field Offices of its determination in June 2022. The field offices subsequently concurred with OEA's determination.

[As noted above, USFWS issued a proposed rule on September 14, 2022, listing the tricolored bat as endangered. OEA identified suitable habitat for the tricolored bat at planned capital improvement locations in Missouri and Oklahoma and occurrence records for the tricolored bat near the study area of the planned double track near Blue Valley. Accordingly, OEA expanded its determination to include the tricolored bat. OEA determined that the Proposed Acquisition may affect, but is not likely to adversely affect the Indiana bat, the northern long-eared bat, the Ozark big-eared bat, and the tricolored bat.](#)

[OEA notified the USFWS Ecological Services Field Offices in Missouri and Oklahoma of its revised determination, and those Field Offices did not raise additional concerns about the tricolored bat. For full documentation of agency consultation, see Appendix B.](#)

[OEA has revised Section O.4.2 in Appendix O to include updated official species lists obtained through IPaC. The revised lists now include the proposed endangered tricolored bat for the planned capital improvements in Missouri and Oklahoma. The IPaC species lists for the planned capital improvements in Iowa, Illinois, Arkansas, and Louisiana remain the same.](#)

Critical Habitat

OEA determined that adding the planned capital improvements within the rail ROW would not result in any impacts to critical habitat because none of the 25 planned capital improvements would be located within critical habitat areas. OEA also determined that the projected increase in rail traffic would not affect habitat areas located near the rail ROW. **Table 3.11-7** details the operational changes along each rail line segments where critical habitat areas are within one mile of the existing mainline. The Poweshiek skipperling habitat consists of natural prairies within Minnesota that are located between 0.5 and 0.8 miles away from the existing railroad. The natural prairies provide larval food plants necessary for this butterfly species. The projected increase in train traffic as a result of the Proposed Acquisition is between 0.9 and 2.6 trains per day along the rail line segments near the natural prairies. This slight increase in train traffic would not require any take within the natural prairies.

The other four species with critical habitat areas near the existing rail lines are mussel species (Neosho mucket, rabbitsfoot, Texas fawnsfoot, and Texas pimpleback), and their critical habitats consist of rivers and a creek that currently pass underneath and are adjacent to the railroad. If the Board authorizes the Proposed Acquisition, OEA projects that rail traffic could increase by between 7.6 and 12.4 trains per day, on average, along the rail line segments near rivers and stream that are designated as critical habitat for the federally listed mussel species. The increase in train traffic would not result in any impacts on rivers or streams that could affect mussels; therefore, OEA does not anticipate the increase in rail traffic to affect these critical habitat areas.

Table 3.11-7. Critical Habitat and Proposed Operation Changes

Segment	Merger Related Increase in Trains Per Day	Species with Critical Habitat within One Mile of Segment
C-DELA-02	2.6	Poweshiek skipperling
C-ELLA-04	0.9	Poweshiek skipperling
K-HEAV-01	12.4	Neosho mucket, rabbitsfoot
K-SHRE-02	12.4	Rabbitsfoot
U-BEAU-01	7.6	Texas fawnsfoot
K-ROSE-01	8.3	Texas fawnsfoot
K-ROSE-02	8.3	Texas fawnsfoot, Texas pimpleback

State-Listed and Sensitive Species

OEA identified suitable habitat within the study area for one state-listed protected species, the tricolored bat. The Applicants' voluntary mitigation measures related to tree clearing and bridge or culvert removal, which are intended to minimize impacts on habitat for the federally protected Indiana bat and northern long-eared bat, would also minimize impacts to habitat that supports tricolored bats because all three bat species utilize similar habitat types.

Bald and Golden Eagles

The BGEPA provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce (buying or selling) of such birds. Under the BGEPA, a “take” of an eagle is defined as to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb.” OEA identified a bald eagle nest within the study area for the planned new siding at MP 431 near Dawn. If removal of the nest tree is required for a planned siding, a “take” would occur. The Applicants have committed to protecting bald and golden eagles by adhering to the BGEPA and by following USFWS National Bald Eagle Management Guidelines, as applicable. Implementation of this mitigation would minimize potential impacts on bald and golden eagles. If removal of the nest tree that OEA identified or nesting trees for bald or golden eagles is required, the Applicants would need to obtain an Eagle Nest Take Permit pursuant to 50 C.F.R. § 22.27.

Natural Areas

Because the planned capital improvements would be located within the existing ROW, OEA does not expect the planned capital improvements would result in any impacts on the Upper Mississippi River National Wildlife and Fish Refuge or Spruce Creek Park. Further, the implementation of the Applicants’ voluntary mitigation measures and OEA’s additional recommended mitigation measures would minimize the potential for the planned capital improvements to result in impacts outside of the ROW that could affect natural areas.

3.11.3.2 No-Action Alternative

Under the No-Action Alternative, CP would not acquire KCS. Therefore, rail traffic on rail lines and activity at rail yards and intermodal facilities would not change as a result of the Proposed Acquisition and the Applicants would not build the 25 planned capital improvements as a result of the Proposed Acquisition. Accordingly, OEA concludes that the No-Action Alternative would not cause [new](#) impacts on plant communities, wildlife, special status species, critical habitat, or natural areas. However, [under the No-Action Alternative, rail traffic would continue on the CP and KCS systems and would therefore continue to have potential impacts on wildlife due to disturbance from noise and mortality from strikes.](#) Also, rail traffic on rail lines and activity at rail yards and intermodal facilities could change in the future under the No-Action Alternative as a result of changing market conditions, such as general economic growth. In addition, CP or KCS could make capital improvements along their rail lines in the future without seeking Board authority.

3.11.4 Conclusion

OEA concludes that the Proposed Acquisition would not result in any long-term impacts on plant communities, wildlife, special status species, critical habitat, or natural areas. The 25 planned capital improvements could result in temporary noise impacts on wildlife and could involve the removal of trees or structures that provide suitable habitat for eagles, other birds, or ESA-listed and state-listed bat species. However, OEA expects that any such impacts would be minor and would be minimized by the implementation of the Applicants’ voluntary mitigation measures and OEA’s additional recommended mitigation measures. OEA determined that the

planned capital improvements *may affect, but are not likely adversely affect* the Indiana bat, the northern long-eared bat, and the Ozark big-eared bat. Pursuant to Section 7 of ESA, OEA notified the appropriate USFWS Ecological Services Field Offices of its determination in June 2022. [The field offices subsequently concurred with OEA's determination. Following issuance of the Draft EIS, OEA revised its determination to include the tricolored bat and notified USFWS Ecological Services Field Offices in Missouri and Oklahoma. Those Field Offices did not raise additional concerns about the tricolored bat.](#) OEA expects that the projected increases in rail traffic and projected increases in activities at rail yards and intermodal facilities would result in negligible impacts on biological resources.

To minimize impacts to biological resources, the Applicants have proposed voluntary mitigation that includes commitments to implement methods to promote no net loss of sensitive habitats during completion of the planned capital improvements (*see Chapter 4, Mitigation, Voluntary Mitigation [VM]-Biological-01 and VM-Biological-05*). To minimize impact on ESA-listed bat species, the Applicants have committed to conducting any tree removal related to the planned capital improvements outside of the roosting period of bat species (April 1 to October 31) (VM-Biological-03). Similarly, the Applicants have committed to conducting any culvert or bridge removal related to the planned capital improvements outside of the bat roosting period, where practicable (VM-Biological-04).

To further minimize impacts to biological resources, OEA is also recommending additional mitigation measures, including requiring the Applicants to not knowingly include any federally- or state-listed invasive weed species in seed mixes for revegetating disturbed areas within the rail ROW (MM-Biological-01) and requiring the Applicants to reexamine the USFWS list of threatened and endangered species during final design and engineering of the capital improvements and consult with USFWS, as necessary (MM-Biological-02). [OEA is further recommending a new mitigation measure \(MM-Biological-03\) to ensure that the measures voluntarily proposed by the Applicants would apply to the proposed endangered tricolored bat, in addition to the endangered Indiana bat and threatened northern long-eared bat.](#)