

## 4.5 Biological Resources

This section discusses impacts on biological resources, including loss of vegetative cover, impacts to wildlife and their habitats, and effects on threatened and endangered species.

### 4.5.1 Vegetation and Cover Types

Most vegetative cover types in the study area have been altered by urbanization. Thus, few areas contain a dominance of native vegetation. Most of the vegetated areas are dominated by nonnative or invasive species. The biological resources within the study area primarily consist of common/adaptable plant and wildlife species that are relatively tolerant of disturbance and human activities. The dominant cover type within the study area is urban and built-up land comprising buildings, roads, parking lots, and driveways, intermixed with urban landscaping, open space (including old fields), or limited forested cover.

Overall, impacts to cover types would be minimal. The alternatives would displace vegetation by expanding the pavement area. Vegetative cover beyond the edge of pavement to the right-of-way line would be converted to grass with intermittent landscape plantings of trees and shrubs, or vegetated swales. The new vegetated areas could be stabilized with native plant species that would reduce maintenance costs, provide water quality benefits, and provide a more natural cover type than turf grasses. The number of invasive/noxious species present and the degree of infestation within the project limits are not expected to increase notably as a result of the proposed improvements.

The proposed alternatives are primarily associated with roadways or include urban and built-up land as the dominant cover type. The alternatives avoid most of the study area's special lands and valuable habitat areas located in forest preserves, nature preserves, INAI sites, and large forested tracts. Impacts to special lands would be minimized and generally be located at the perimeter of the property. As a result, most of the cover type conversions and the fragmentation of large forested tracts or other ecologically valuable cover types would be minimal.

Table 4-21 summarizes impacts associated with Alternatives 203 and 402 based on mapped land cover types.

TABLE 4-21  
Land Cover Impacts by Build Alternative

Cover Type <sup>a</sup>	Alternative 203		Alternative 402	
	Acres <sup>b, c</sup>	Percent <sup>d</sup>	Acres <sup>b, c</sup>	Percent <sup>d</sup>
<b>Forested Land</b>				
Upland	63.4	3.8	56.7	4.2
Partial canopy / savannah upland	30.7	1.9	25.6	1.9
Floodplain forest	6.3	0.4	6.3	0.5
Total	100.4	6.1	88.6	6.6
<b>Urban and Built-up Land</b>				
High density	483.6	29.3	384.5	28.7
Low / medium density	646.1	39.1	525.3	39.2
Urban open space <sup>e</sup>	400.2	24.2	331.1	24.7

TABLE 4-21  
Land Cover Impacts by Build Alternative

Cover Type <sup>a</sup>	Alternative 203		Alternative 402	
	Acres <sup>b, c</sup>	Percent <sup>d</sup>	Acres <sup>b, c</sup>	Percent <sup>d</sup>
Total	1,529.9	92.6	1,240.9	92.6
<b>Footprint Total<sup>d</sup></b>	<b>1,650.4</b>	<b>—</b>	<b>1,340.8</b>	<b>—</b>

Source: USDA National Agriculture Statistics Service, IDOA, and IDNR, 2002.

<sup>a</sup> Only land cover types included in the *Land Cover of Illinois 1999–2000* that would be affected by the alternatives are included in the table. See subsection 2.2 for agriculture, subsection 4.2 for surface waters, and subsection 4.3 for wetlands.

<sup>b</sup> Land cover impact acreages for this table were calculated for the alternatives based on data from the *Land Cover of Illinois 1999–2000*; the data may vary from data provided by other sources found in other tables within this document.

<sup>c</sup> Acreage includes land cover mapped within proposed OMP limits. OMP construction has commenced, and most of the vegetated land cover at the west end of the OMP limits has been cleared; therefore, actual land cover within OMP limits may vary from that which is mapped.

<sup>d</sup> Percent of “footprint total” acreage. Footprint total represents the total acreage within the footprint.

<sup>e</sup> Urban open space includes parks, golf courses, cemeteries, and other grassland cover within urban and built-up areas.

Although Alternatives 203 and 402 differ in total acreage by about 310 acres, the impacts to individual cover types would be relatively similar in terms of the percent of each cover type taken. The dominant cover type affected would be urban and built-up land. Impacts to this cover type would account for almost 93 percent of the total acreage within both alternative footprints, and the majority of the 310 acre difference between the alternatives. Mapped forested land losses would account for between six and seven percent of the total footprint area for Alternatives 203 and 402, including roughly 12 acres more forested impact associated with Alternative 203 than for Alternative 402. Impacts to surface waters and wetlands are discussed in subsections 4.2 and 4.3, respectively.

Preliminary field reconnaissance showed most of the undeveloped land near the proposed improvements is surrounded by development and primarily consists of urban open space (e.g., mowed lawn and old field successional areas) and to a lesser extent degraded woodlands. In general, large contiguous mapped urban open space or forested land would not be divided. Stands of native oak/hickory forests would not be impacted by either build alternative. Exhibit 4-7 shows mapped forest land and urban open space in relation to the build alternative footprints. Most impacts would be at habitat edges, associated with widening existing transportation corridors, or take place in areas reserved for transportation improvements.<sup>27</sup> For example, the urban open space/forested land impact within Alternatives 203 (33 percent) and 402 (39 percent) would take place within the Elgin O’Hare Expressway and Thorndale Avenue rights-of-way. Nonnative or aggressive plant species, such as cut-leaved teasel (*Dipsacus laciniatus*) and common buckthorn (*Rhamnus cathartica*), dominate many of the old field and woodland open spaces, respectively. The old field successional areas are entirely herbaceous or are scattered with trees that are beginning to colonize idle, open space.

<sup>27</sup> Both Alternatives 203 and 402 would impact mapped urban open space and forested areas located within OMP limits. Mapped forested area/urban open space impacts within OMP account for about 25 percent of the land cover impacts associated with Alternative 203 and 19 percent for Alternative 402. OMP construction has commenced and the majority of the vegetated land cover in the vicinity of the alternatives within OMP limits has been removed; therefore, areas within OMP limits are not discussed further in this section.

Both build alternatives would affect roughly 0.8 acre at the edge of a 124-acre mapped forested area located adjacent to Medinah Road, south of the Elgin O'Hare Expressway.<sup>28</sup> Based on preliminary field reconnaissance, this mapped forested area includes woodland, wetland (including wet old field and emergent communities), part of Meacham Creek, and a residential development. The wooded area is dominated by box elder (*Acer negundo*), common buckthorn, and ash trees (*Fraxinus* sp.). Based on plant species composition and habitat characteristics, the areas to be impacted include lower quality woodland, degraded wetland communities and lower quality riparian habitat associated with Meacham Creek.

The largest of the mapped forested impacts would take place near Salt Creek adjacent to Thorndale Avenue and near the northwest corner of Thorndale Avenue and York Road. Near Salt Creek, 9.8 acres of mapped forested cover would be affected by both Alternatives 203 and 402. Based on preliminary field reconnaissance, a woodland near Salt Creek included common buckthorn, Siberian elm (*Ulmus pumila*), and tall goldenrod (*Solidago altissima*). Roughly 1.5 acres of the mapped forested impacts near Salt Creek include a stormwater management facility dominated by common reed. The mapped forested impact near the corner of Thorndale Avenue and York Road consists of a 10.5-acre degraded woodland dominated by box elder, common buckthorn, eastern cottonwood, Siberian elm, and sandbar willow (*Salix interior*) at the woodland edge. Alternative 402 would affect the entire woodland; Alternative 203 would affect about 0.9 acre less.

Alternative 203 would affect 69.1 acres more of mapped urban open space than Alternative 402 and 11.8 acres more of mapped forested area. Of these impacts, Alternative 203 would include about 34 acres of mapped urban open space and 6.6 acres of forested land near the Touhy Avenue Reservoir<sup>29</sup> and mapped vegetative cover near the OMP limits. The additional land cover impacts are the result of a wider footprint attributable to a freeway component that parallels the west limits of the OMP.

Table 4-22 summarizes impacts associated with Options A and D based on mapped land cover types. Impacts to urban and built-up land account for close to 100 percent of the total area within the south bypass connection footprints. Most of the impacts for both south bypass connection options would be high density urban/built-up land followed by impacts to low/medium density urban/built-up and urban open space cover types. Exhibit 4-7 shows mapped forest land and urban open space in relation to the south bypass connection footprints. Option A would impact a slightly lower percentage of high density urban/built-up land than Option D, and would affect a slightly higher percentage of low/medium density, urban open space, and forested land. Option A contains a greater number of smaller sized commercial/industrial buildings and parcels than Option D. Option D would impact fewer, but larger industrial buildings. The 6.1 acres of additional mapped urban open space and forested land impacts associated with Option A would primarily affect scattered open lots and lawns along County Line Road. As a result, most of the cover type conversions would be minimal and fragmentation of valuable wildlife habitats would not occur with either south bypass connection option.

<sup>28</sup> This area also includes roughly 22 acres of mapped urban open space, of which 0.5 acre of its edge would be affected along the east side of Medinah Road.

<sup>29</sup> The Touhy Avenue Reservoir is located near the northwest corner of OMP. Over 83 percent of the mapped forested impact at this location is within OMP limits and does not appear forested based on a review of aerial photography.

TABLE 4-22  
Land Cover Impacts Associated with the South Bypass Connection Options

Cover Type <sup>a</sup>	Option A		Option D	
	Acres <sup>b</sup>	Percent <sup>c</sup>	Acres <sup>b</sup>	Percent <sup>c</sup>
<b>Forested Land</b>				
Upland	0.9	0.3	0.3	0.1
Total	0.9	0.3	0.3	0.1
<b>Urban and Built-up Land</b>				
High density	173.7	66.7	175.2	71.4
Low/medium density	73.2	28.1	62.9	25.6
Urban open space <sup>d</sup>	12.4	4.8	6.9	2.8
Total	259.3	99.6	245.0	99.8
<b>Footprint Total<sup>c</sup></b>	<b>260.4</b>	<b>—</b>	<b>245.5</b>	<b>—</b>

Source: USDA National Agriculture Statistics Service, IDOA, and IDNR, 2002.

<sup>a</sup> Only land cover types included in the *Land Cover of Illinois 1999-2000* that would be impacted by the alternatives are included in the table. See subsection 4.2 for surface waters and subsection 4.3 for wetlands.

<sup>b</sup> Land cover impact acreages for this table were calculated for the alternatives based on data from the *Land Cover of Illinois 1999-2000*; this data may vary from data provided by other sources found in other tables within this document.

<sup>c</sup> Percent of “footprint total” acreage. Footprint total represents the total acreage within the footprint.

<sup>d</sup> Urban open space includes parks, golf courses, cemeteries, and other grassland-like cover within urban and built-up areas.

## 4.5.2 Wildlife

The proposed alternatives are located predominantly in developed areas associated with existing roadways that provide poor wildlife habitat. Wildlife that uses the available habitat tends to be tolerant of disturbance and human activities. Urban tolerant wildlife species are generally common, adaptable species and include limited numbers of birds, mammals, reptiles, and amphibians.

Wildlife can be affected by transportation projects constructed on new or existing alignment that results in a loss of habitat/cover type, disruption of habitat continuity, and creation of barriers to wildlife movement. Transportation improvement projects can lead to direct and indirect wildlife impacts, such as wildlife-vehicle collisions (direct impact) and increased predation because of loss of habitat (indirect impact). Clearing, grading, and equipment operation could also result in wildlife impacts. Many mobile wildlife species will avoid harm due to construction operations, but some mortality is expected, especially to small mammals, amphibians, and reptiles that may be present in construction areas.

Old fields are the most common wildlife habitat type near the alternatives. They are important to woodland edge and grassland bird and mammal species when large and unfragmented. Near the build alternatives, most of the old field areas are highly fragmented and have less stable wildlife populations. The smaller open areas and linear rights-of-way tend to be most valuable for common urban bird species, such as the American robin

(*Turdus migratorius*), common grackle (*Quiscalus quiscula*), European starling (*Sturnus vulgaris*), and small mammals (voles, mice).

Construction will result in wildlife impacts through loss of vegetation and habitat. Overall, project-related impacts to wildlife would be minimal and relatively similar between Alternatives 203 and 402 and between Options A and D. Potential wildlife impacts are discussed in the following subsections.

#### 4.5.2.1 Habitat Loss and Fragmentation

Direct conversion from vegetative cover to paved areas would result in the loss of wildlife habitat for breeding, foraging, and resting. Impacts to wildlife could involve limited population reductions of species or displacement associated with the habitat within the project footprint. Species that rely upon higher quality habitat such as wetlands could be adversely affected. However, the study area contains limited areas of prime wildlife habitat, and it is expected that the overall effect on wildlife would be minimal. Of the land cover types listed in Tables 4-21 and 4-22, the most important in the study area for wildlife are forested lands and urban open space. Surface waters and wetlands are also important to wildlife. Subsections 2.3, Water Resources and Quality, and 2.4, Wetlands, discuss the general distribution of aquatic/wetland habitats. The alternatives avoid most of the study area's valuable habitat that is located within forest preserves, the nature preserve (Busse Forest Nature Preserve), INAI sites, and large forested tracts.

Habitat fragmentation involves dividing larger continuous habitat (such as woodlands and old fields) into smaller habitat patches. Transportation projects can cause fragmentation, thus creating additional edge habitat. Edge habitat is the boundary between habitat types, such as between woodlands and fields. Some species within the study area, such as the American robin and the brown-headed cowbird (*Molothrus ater*), prefer edge habitat. Edge habitat is usually created at the expense of large continuous habitat – the smaller the habitat patch, the larger the edge effect. Edge effects may result in differences in predation, interspecific competition, and prey availability that may vary near the edge of a habitat when compared to the interior of a larger patch. Habitat fragmentation will favor species that are more adaptive to edge environments thereby affecting non-edge species to a greater extent.

Edges often are associated with transportation rights-of-way or urbanized sections of the landscape. Most cover type impacts within the alternative footprints (between 93 and 100 percent) include urban and built-up land (including urban open space), which are already disrupted by residential, commercial, and industrial areas, roads, rail, utilities, and other types of development. Most of the forested area and open space impacts that would occur as a result of the build alternative include edge habitat. Widening the transportation corridors, as proposed, generally would relocate the habitat edge. Many of the improvements that upgrade existing transportation systems would have a minimal effect upon wildlife species that have already adapted to edge habitat.

Neotropical migrant birds are a primary wildlife group that could be affected by the displacement and fragmentation of forest habitat. There would be some loss of bird nesting and foraging areas because of conversion of undeveloped land within the proposed right-of-way to highway uses. Some neotropical migrant birds require forested stands of a minimum size and are not found in smaller wooded areas, even if suitable habitat is present. The largest

mapped forested stands within the overall EO-WB study area include forest preserve properties that would not be affected by the proposed transportation improvements, such as the Ned Brown Preserve (see Exhibit 4-7). The largest mapped forested impact associated with the proposed transportation improvements is about 10.5 acres in size and is located near the west side of O'Hare Airport in a developed area near the northwest corner of Thorndale Avenue and York Road. An additional five mapped forested areas (excluding areas within OMP limits) impacted by the proposed transportation improvements are over 10.5 acres in size. Adverse effects to these forested areas, however, would consist primarily of edge takes adjacent to existing roadways and impacts are less than 9.8 acres in size (see Exhibit 4-7). Impacts to forested areas are discussed in subsection 4.5. Based on edge effect, nest predation could increase in fragmented wooded patches.

Edge habitat may be widely used by several of the relatively urban-tolerant mammals within the study area, such as raccoon (*Procyon lotor*) and Virginia opossum (*Didelphis virginiana*). Both raccoons and opossum, which are opportunistic feeders and nest predators, use this type of habitat. Impacts to neotropical migrant birds, however, are expected to be minimal. Impacts to edge areas will reduce the size of available wildlife habitat, thus forcing relocation of remaining wildlife to interior locations. Forced relocation of wildlife can be expected to increase population densities and increase competition within the remaining interior habitat areas. Given the relatively small impacts to edge habitat compared with remaining cover and the adaptability of the urban-tolerant wildlife known to use these areas, adverse impacts as a result of the project are expected to be negligible.

#### 4.5.2.2 Barriers to Wildlife Movement

Even in the most urban areas, certain corridors allow wildlife to travel between habitat patches. Wildlife use linear corridors, such as rights-of-way, fence rows, and riparian environments for movement, dispersal, and to access habitat divided by roads, rail, or other types of development. Newly constructed barriers, such as roads or rail, can reduce wildlife movement between two adjacent habitats by interrupting established travel routes. Barriers may pose a significant threat to wildlife because of traffic volumes, speeds, and width of roadway/rail corridor. Road and rail do not pose barriers to all forms of wildlife equally. Birds and most mammals are relatively mobile; therefore, the direct loss of habitat to any alternative would not be as critical as it would be to other species of wildlife. Birds and mammals typically seek other areas in which to forage, breed, and rest. Their mobility exposes them to collisions with vehicles as they attempt to cross roadways that have been widened or new roadways to areas not previously served. Deer/vehicle collisions would be a safety concern, but no negative impact to the overall deer population is expected. Minimal to no loss of species groups is anticipated.

Small, terrestrial wildlife species are more affected by barriers than birds and larger mammals. Most reptiles and amphibians in the study area are less mobile and rely on their immediate habitat. Transportation improvements could pose a higher road kill hazard potential to reptiles and amphibians than to larger mammals, although mammal/vehicle collisions are known to occur. Reptiles and amphibians most likely would be affected by road and rail crossings during breeding, nesting, and seasonal movements. Even though impacts may occur, negative impacts to the overall reptile or amphibian population within the study area are not anticipated as a result of the proposed transportation improvements.

The study area contains limited areas of prime wildlife habitat. Roughly 87 percent of the study area is urban and developed land (see Table 2-19). The large percentage of urban development, habitat fragmentation, and existing transportation infrastructure throughout the study area limits wildlife movement. The largest contiguous open space habitat types within the study area are the Ned Brown Preserve, a system of forest preserve properties along the Des Plaines River in Cook County, and a cluster of forest preserves and other special lands in DuPage County along Salt Creek/adjacent to I-290. The preserved open space and Salt Creek provide connectivity among the DuPage County Forest Preserves and may allow animal movement between those areas. Both build alternatives would affect part of the riparian corridor adjacent to Salt Creek. However, Salt Creek and many potential wildlife corridors in the study area, including other streams and railroad rights-of-way, would be bridged by a build alternative that may facilitate wildlife movement. New adverse impacts to wildlife movement are not expected.

### 4.5.3 Threatened and Endangered Species

Based on correspondence from the USFWS (dated January 29, 2009), the study area includes two known locations of the federal-threatened eastern prairie fringed orchid (*Platanthera leucophaea*). The eastern prairie fringed orchid is also a state-endangered species. Neither known location is in or near the proposed alternatives. Possible habitat for the orchid includes mesic prairie, sedge meadows, marsh edges, and bogs. Any moderate to high quality wetland habitat within the study area could support the species. There is no known critical habitat for the species within the study area (Rogner, 2009).

According to information provided by the IDNR and the Illinois Natural Heritage Database (dated December 12, 2008), the build alternatives and south bypass connection options do not directly affect any recorded state-listed threatened or endangered species sites. The nearest recorded sites are more than 3,500 feet from Alternatives 203 and 402 and are associated with a state-endangered bird at a privately owned natural area located near the southwest corner of the Ned Brown Preserve, and a state-threatened plant species at the Ned Brown Preserve. The Ned Brown Preserve and the privately owned natural area will not be directly affected by the proposed improvements.

The accuracy of available data does not allow a conclusive determination of specific impact to the state- and federal-listed species. As part of Tier Two, additional studies will be conducted to determine potential presence and potential impacts to threatened and endangered species. Future work associated with the preferred alternative would include detailed threatened and endangered species field surveys (if necessary) and the required consultation with IDNR and USFWS.