

airport RPZs. Based on discussions with FAA and USDA-APHIS, there are no special structural cover requirements for stormwater management facilities located in an RPZ, beyond the wildlife deterrent practices discussed above.⁵⁸ Preliminary engineering plans will be submitted to FAA and/or USDA-APHIS, as necessary, to review of wildlife hazard safety requirements.

3.13 Wetlands

Wetlands are “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.”⁵⁹ The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* identifies three essential characteristics of a jurisdictional wetland – hydrophytic vegetation, hydric soils, and wetland hydrology (USACE, 2010).⁶⁰ Wetlands generally are associated with lakes, streams, or localized depressional areas. Wetlands can be waters of the U.S. Other waters of the U.S. (e.g., streams, ponds, lakes) are described in subsection 3.10.

3.13.1 Affected Environment

In the vicinity of the project corridor, the relief is gently rolling to nearly flat. Most of the project corridor and adjacent areas are urbanized and have been affected by development.

Published data, including National Wetlands Inventory (NWI)⁶¹ maps, were used to conduct a preliminary evaluation of the extent and type of wetlands within Cook and DuPage Counties, as well as the watersheds that encompass the project corridor. Wetland resources per NWI mapping are summarized in *Wetland Resources of Illinois, An Analysis and Atlas* (Suloway and Hubbell, 1994). Statewide, 3.3 percent of Illinois land surface is mapped as palustrine wetland. Of the two counties where the project corridor is located, DuPage County has a larger percentage (5.1 percent) of mapped palustrine wetlands than the statewide average. Cook County (3.0 percent) is slightly less than the statewide average (see Table 3-44). NWI mapping provides an estimate of wetland extent based on a remote sensing effort. The NWI serves only as a large-scale guide, and field-delineated wetland locations and types often vary from those that are mapped.

TABLE 3-44
Mapped Palustrine Wetlands

Geographic Area	Total Area (acres)	Palustrine Wetland Area (acres)	Percent of Total Area
Illinois	35,573,491	1,168,964	3.3%
Des Plaines River Basin	835,516	37,629	4.5%

⁵⁸ Based on a July 23, 2012, meeting between FAA, USDA-APHIS, USACE, USEPA, USFWS, IDNR, IDOT, Illinois Tollway, and project consultants.

⁵⁹ 40 CFR 230.3(t)

⁶⁰ The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010) provides additional guidance regarding completion of wetland delineations in most of Illinois and supplements the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987).

⁶¹ The NWI is a series of topical maps developed by the USFWS to show wetlands and deep water habitats.

TABLE 3-44
Mapped Palustrine Wetlands

Geographic Area	Total Area (acres)	Palustrine Wetland Area (acres)	Percent of Total Area
Cook County	607,261	18,383	3.0%
DuPage County	213,476	10,899	5.1%

Source: Suloway and Hubbell, 1994.

As mentioned in subsection 3.10.1, the project corridor is located within the Des Plaines River drainage basin (HUC 07120004), which has a total area of 835,516 acres. Based on NWI mapping, the basin contains 37,629 acres of palustrine wetland, or 4.5 percent of the basin area (higher than the statewide average). Table 3-45 summarizes wetland types that are mapped in the basin. More than half (52.4 percent) of the mapped palustrine wetlands in the basin consists of emergent wetland, followed by forested wetland (24.2 percent), open water wetland (19.1 percent), and scrub-shrub (4.4 percent).

TABLE 3-45
Acreage of Mapped Palustrine Wetland Types within the Des Plaines River Basin (HUC 07120004)

Palustrine Cover Type	Wetland Area (acres)	Percent of Wetland Area	Percent of Watershed Area
Forested	9,089	24.2%	1.1%
Emergent	19,714	52.4%	2.4%
Open Water	7,183	19.1%	0.9%
Scrub-Shrub	1,643	4.4%	0.2%
Total	37,629	100.1% ^a	4.6% ^a

Source: Suloway and Hubbell, 1994.

^a Totals may vary from other tables in this document due to rounding.

The Des Plaines River drainage basin includes portions of two states and eight counties. It has been divided into several smaller sub-watersheds (see subsection 3.10.1), the remainder of the watershed discussion in this subsection focuses on these smaller sub-basins, unless otherwise noted.

During the summers of 2009, 2010, and 2011, the INHS completed routine onsite wetland delineations for the proposed EO-WB project improvements. Based on the field delineations, 118 wetland sites were identified in the vicinity of the project corridor (see Appendix J). The *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987); *Field Indicators of Hydric Soils of the United States* (USDA-NRCS, 2006); and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE,

2008; USACE, 2010)⁶² were referenced for the field delineations, which included an evaluation of vegetation, soils, and hydrology.

Following completion of the 2009/2010 wetland fieldwork, the project corridor was refined.⁶³ The remainder of this subsection concentrates on the project corridor. Approximately 28.5 acres of wetland at 66 sites are within the project corridor (see Appendix J and Exhibit 3-17). The size of individual wetland sites ranged from less than 0.01 acre to more than 31 acres.⁶⁴ Almost 84 percent of the project corridor wetland area is within DuPage County. The majority of the wetland area is located within the Salt Creek Watershed (approximately 54 percent) and the Willow Creek Watershed (approximately 39 percent), followed by the Des Plaines River (main stem) Watershed (approximately 5 percent), the West Branch DuPage River Watershed (almost 2 percent), and the Addison Creek Watershed (less than one percent) (see Table 3-46 and Exhibit 3-17).

Most of the West Bypass corridor is located on the west side of O'Hare Airport (see Exhibit 3-17). INHS did not evaluate wetland areas on airport property; however, wetland data from the OMP was used for these overlapping project areas. The West Bypass corridor includes approximately 0.3 acre of wetland area (as of early June 2010) within OMP limits. The OMP obtained a Section 404 CWA permit from the USACE in December 2005 for airport improvements. It is anticipated that the wetlands at O'Hare Airport will be filled as part of OMP in accordance with the City of Chicago Section 404 CWA permit prior to December 15, 2015. That permit authorized all onsite wetlands to be filled to make way for airport improvements. The wetlands within OMP limits are not discussed further in this subsection.

TABLE 3-46

Summary of Wetland Types/Plant Communities within Project Corridor by Acreage and Watershed

Wetland Plant Community	Addison Creek Watershed (acre)	Des Plaines River (Main Stem) Watershed (acre)	Salt Creek Watershed (acre)	West Branch DuPage River Watershed (acre)	Willow Creek Watershed (acre)	Total ^{a,b} (acre)
Cook County						
Forested Depression	0	0.50	0.50	0	0	1.00
Marsh	0	0.34	0.68	0.38	0.75	2.15
Marsh/Pond	0	0	0.07	0	0.65	0.72
Pond	0	0	0.43	0	0	0.43
Wet Meadow	0	0	0	0.08	0	0.08
Wet Shrubland	0	0	0	0	0.20	0.20

⁶² The Final Report – *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* was released in August 2010 near the end of the 2010 fieldwork.

⁶³ The original wetland field study included wetlands located up to 400 feet or more beyond the current project corridor.

⁶⁴ Wetlands may extend beyond the project corridor. The average size of each field identified wetland site was approximately 1 acre in total size (based on 64 of the 66 project corridor wetland sites). This average size does not include two relatively large wetland sites that extend beyond the project corridor for which a total acreage was not determined. Several wetland sites were comprised of more than one wetland polygon located in close proximity. INHS commonly referred to these proximate wetland polygons as one site.

TABLE 3-46
Summary of Wetland Types/Plant Communities within Project Corridor by Acreage and Watershed

Wetland Plant Community	Addison Creek Watershed (acre)	Des Plaines River (Main Stem) Watershed (acre)	Salt Creek Watershed (acre)	West Branch DuPage River Watershed (acre)	Willow Creek Watershed (acre)	Total ^{a,b} (acre)
Subtotal	0	0.84	1.68	0.46	1.60	4.58
DuPage County						
Forested Depression	0	0	0.74	0	2.39	3.13
Marsh	0.20	0.63	11.14	0	3.22	15.19
Marsh/Pond	0	0	0.12	0	0	0.12
Marsh/Wet Meadow	0	0	0.01	0	0	0.01
Pond	0	0	0.03	0	0.21	0.24
Wet Meadow	0	0	1.56	0	0.47	2.03
Wet Shrubland	0	0	0	0	0.95	0.95
Wet Shrubland/ Marsh	0	0	0	0	2.20	2.20
Subtotal	0.20	0.63	13.60	0	9.44	23.87
Total acreage ^b	0.20	1.47	15.28	0.46	11.04	28.45
Total percent of project corridor wetland	0.70	5.17	53.71	1.62	38.80	100.00

Source: Matthews et al., 2009; Matthews et al., 2010; Matthews, et al., 2011.
^a Acreages less than 0.005 have been rounded to 0.
^b Totals may vary from other tables in this document due to rounding.

3.13.1.1 Wetland Plant Communities

Past human disturbances and runoff from the urban environment appear to have adversely affected the majority of the wetlands located within the project corridor. In general, most of the identified wetlands are characterized by low diversity and low richness of native plant species. Based on floristic inventories conducted for the wetlands within the project corridor, the average Floristic Quality Index (FQI) was 8.6 and the average mean coefficient of conservatism (C-value) was 2.2, which are indicative of plant communities that have been disturbed or are in an early successional stage (discussed below in more detail in subsection 3.13.1.2). The palustrine cover type is dominated by invasive plant species.

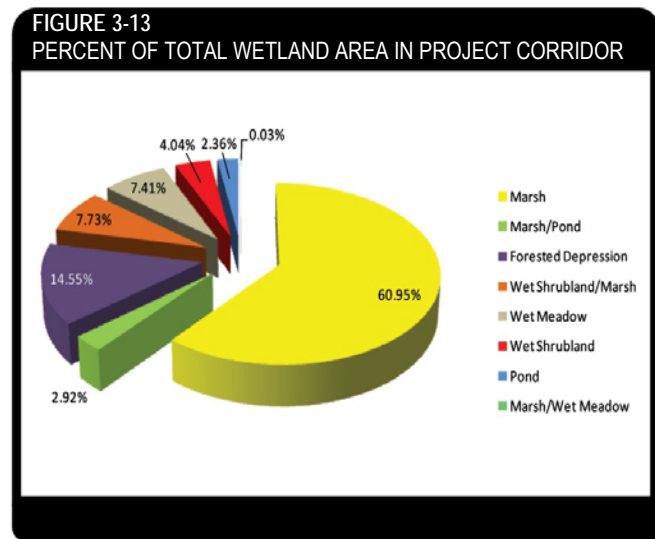
Floristic quality was measured using the Floristic Quality Assessment (FQA) methodology of *Floristic Quality Assessment for Vegetation in Illinois: A Method for Assessing Vegetation Integrity* (Taft et al., 1997). The FQA method was applied to wetland plant communities identified in the EO-WB project corridor. The FQA method is based on a numerical rating

(FQI) of plant communities. The numerical rating describes the natural quality of plant communities. A low FQI often indicates disturbance and low natural quality; whereas, a high FQI indicates low disturbance and high natural quality. The basis for the numerical rating is the assignment of coefficients of conservatism (or C-value, numbered 0 to 10) to each plant species known to occur in Illinois. Higher C-values generally are assigned to native species that are found in specialized habitats, and lower C-values are assigned to species that are non-native, common, and habitat generalists.

Once a comprehensive plant species list has been compiled for an area, its FQI is calculated. An FQI below 10 suggests a site of low natural quality, while a score of below 5 may denote a highly disturbed site. An FQI above 20 suggests that a site has evidence of native character and may be an environmental asset. The implementing rules of the Illinois Interagency Wetland Policy Act (IWPA) require a 5.5- to 1.0-acre mitigation ratio for impacts to wetland sites having an FQI of 20 or greater or a mean C-value greater than 4.0.⁶⁵

Approximately 71 percent of the wetland acreage within the project corridor is accounted for by marsh wetlands or a wetland community that includes a marsh component. The remaining wetland plant communities consist of pond wetlands, forested depressions, wet shrubland, wet meadow, or a combination of these wetland types. Appendix J summarizes characteristics of individual wetland sites in the vicinity of the project corridor.

The five primary wetland cover types (plant communities) within the project corridor are described below in order of decreasing predominance. Wetlands may include more than one cover type (see Table 3-47 and Figure 3-13).



Wetland Plant Community	Total Wetland Area from Field Delineation (acre)			Percentage of Total Wetland Area in Project Corridor	Percentage of Project Corridor Acreage ^a
	Cook County	DuPage County	Combined in Cook and DuPage Counties		
Marsh	2.15	15.19	17.34	60.95	0.93
Forested Depression	1.01	3.13	4.14	14.55	0.22
Wet Shrubland/Marsh	0	2.20	2.20	7.73	0.12

⁶⁵ Based on guidance in the USACE Regional Permit Program (2012), high-quality aquatic resources may be described as having an FQI of 20 or greater or a mean C-value of 3.5 or greater (Swink and Wilhelm, 1994).

TABLE 3-47
Extent of Wetland Types/Plant Communities within Project Corridor

Wetland Plant Community	Total Wetland Area from Field Delineation (acre)			Percentage of Total Wetland Area in Project Corridor	Percentage of Project Corridor Acreage ^a
	Cook County	DuPage County	Combined in Cook and DuPage Counties		
Wet Meadow	0.08	2.03	2.11	7.41	0.11
Wet Shrubland	0.20	0.95	1.15	4.04	0.06
Marsh/Pond	0.71	0.12	0.83	2.92	0.04
Pond	0.43	0.24	0.67	2.36	0.04
Marsh/Wet Meadow	0	0.01	0.01	0.04	0.00
Total ^b	4.58	23.87	28.45	100.00	1.52

Source: Matthews et al., 2009; Matthews et al., 2010; Matthews et al., 2011.

^a Based on a total project corridor area equal to 1,863.8 acres.

^b Totals may vary from other tables in this document due to rounding.

Marsh Wetlands

Marsh wetlands generally are characterized by the presence of standing water throughout the growing season and contain vegetation that is tolerant of standing water for prolonged periods, such as cattails (*Typha* spp). Typically, less than 30 percent of the areal cover consists of woody vegetation (IDNR, 2000). Marsh wetlands are the most prevalent wetland type in the project corridor and account for roughly 61 percent of the wetland acreage. An additional 11 percent of the wetland acreage has a marsh component, primarily wet shrubland/marsh complexes (approximately eight percent). Based on floristic inventories, the majority of the marsh/marsh component wetlands are lower quality (average FQI of 8.1).⁶⁶ Three of the wetlands are known mitigation sites or overlap with mapped higher quality wetlands (discussed in more detail in subsection 3.13.1.2). The most common dominant plant species in the marsh/marsh component wetlands were narrow-leaved cattail (*Typha angustifolia*) and common reed (*Phragmites australis*) (see Figure 3-14); both of these species are considered invasive.

FIGURE 3-14
EMERGENT WETLAND - SOUTHWEST OF ELGIN-O'HARE EXPRESSWAY & MEACHAM/MEDINAH ROAD



Source: CBBEL, 2011.

⁶⁶ Based on the guidance provided in the IWPA and description of high quality aquatic resources in the USACE Regional Permit Program (2012). One marsh wetland with high floristic quality (i.e., Site 158) was identified outside, but near the project corridor, northeast of I-290 and Devon Avenue (see Appendix J).

Regarding the marsh and wet shrubland/marsh wetlands (the two most dominant marsh cover types), approximately 19.5 acres of marsh wetlands are scattered throughout the project corridor, generally along the existing Elgin-O'Hare Expressway and Thorndale Avenue, and to a lesser extent, along York Road.

Forested Depression Wetlands

Generally speaking, forested depression wetlands include wooded areas that are located in a topographically low landscape position, that have a high water table, or that retain stormwater runoff or precipitation on a seasonal or temporary basis. Forested depression wetlands usually do not have continuous standing water.

Based on floristic inventories, the forested depression wetlands in the project corridor are low quality to fair quality (FQI ranged from 6.3 to 14.3). Common dominant woody species include eastern cottonwood (*Populus deltoides*), box elder (*Acer negundo*), silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*), and common buckthorn (*Rhamnus cathartica*) (see Figure 3-15). In the understory, reed canary grass (*Phalaris arundinacea*) is a dominant species. Forested depression wetlands account for almost 15 percent (approximately 4.1 acres) of the wetland area within the project corridor. The forested depression wetlands are located primarily along Thorndale Avenue, east of I-290. Roughly half of the forested depression wetland acreage is concentrated on the south side of Thorndale Avenue between Central Avenue and Lively Boulevard.

FIGURE 3-15
FORESTED DEPRESSION WETLAND ADJACENT TO
THORNDALE AVENUE



Source: CBBEL, 2010.

Wet Meadow Wetlands

Wet meadow wetlands generally are characterized by moist to saturated soils with standing water for only brief to moderate periods during the growing season. Wet meadow wetlands comprise more than seven percent (approximately 2.1 acres) of the wetland acreage within the project corridor. The wet meadow wetlands are located primarily along Thorndale Avenue, east of Arlington Heights Road. Based on floristic inventories, the identified wet meadow wetlands are mainly low quality (average FQI of 7.7) and commonly are dominated by reed canary grass.

Wet Shrubland

Wetlands dominated by saplings and shrubs are identified as wet shrubland. In this community type, woody plants less than 20 feet tall account for 30 percent or more of the vegetation present (IDNR, 2000). Wet shrubland (including wet shrubland/marsh communities) accounts for almost 12 percent (approximately 3.4 acres) of the project corridor wetland acreage. The wet shrubland and wet shrubland/marsh wetlands in the project corridor are concentrated west of York Road near the intersection with Thorndale

Avenue. Based on floristic inventories, these wetland areas are low to fair quality (FQI ranged from 6.1 to 15.8), and the dominant vegetation includes sandbar willow (*Salix interior*), narrow-leaved cattail, and reed canary grass.

Pond Wetlands

Pond wetlands are typically characterized by a nearly permanent open water area roughly 0.5 acre to 20 acres in size. Floating vascular plants and algae may make up the dominant vegetation during the growing season. However, during the winter months, vegetation may not be visible. Rooted vegetation is generally located near the perimeter of the pond or restricted to shallow water areas (IDNR, 2000).

Within the project corridor, most of the pond wetlands and wetlands with a relatively large open water component (e.g., marsh/ponds) appear to be man-made (or man-induced). The ponds comprise approximately 0.7 acre or just over two percent of the project corridor wetlands. An additional three percent of the wetlands are marsh/pond wetlands. Ponds and marsh/pond wetlands are primarily located along the existing Elgin-O'Hare Expressway, Thorndale Avenue, and north of the Des Plaines Oasis at I-90. These ponds and marsh/ponds include Elgin-O'Hare Expressway wetland mitigation sites (see subsection 3.13.1.2) and stormwater detention areas. Based on floristic inventories, the ponds and marsh/ponds are low to fair quality (FQI ranged from 5.3 to 13.9). Dominant plant species in the pond wetlands include narrow-leaved cattail (in the shallow areas and at the pond perimeter).

3.13.1.2 Wetland Functions

During the wetland field delineations, wetland functions were assessed qualitatively for all sites. Field assessments were based on several factors, including visual observation, plant community composition and structure, landscape position, adjacent land uses, hydrologic inputs and outflows, and soils. Specific functions identified by INHS during its wetland fieldwork included surface water and flood storage, wildlife habitat, and stabilization of streambanks and shorelines. In addition, heritage characteristics/recreational values, mitigation sites, and other functional characteristics are discussed in this subsection. Heritage characteristics include high floristic quality value, presence of threatened or endangered species, or inclusion of designated lands (e.g., forest preserves).

Groundwater recharge was not listed as a wetland function by INHS for the project corridor wetlands. The wetlands likely provide groundwater recharge, but it is not a primary function. Wetlands within the project corridor are depressional features surrounded by upland areas or associated with stream channels or overbank floodplain areas. These wetlands do not appear to be sustained by groundwater. Generally, the project corridor wetlands have a high content of clay soil, which along with depressional characteristics of wetlands, tends to trap surface water. Rainfall and stormwater runoff is collected within these depressional areas and slowly infiltrates or evaporates.

Brief descriptions of the suite of considered wetland functions are in the following subsections.

Surface Water and Flood Storage

Wetlands are capable of holding stormwater runoff and may provide water quality benefits by filtering stormwater pollutants and assimilating nutrients. Wetlands may also reduce

flood flow rates, velocities, and volumes. Wetlands may reduce peak flood damage by providing flood storage and by gradually releasing floodwater as the flood recedes.

The stormwater storage function and water quality benefit of several of the project corridor wetlands may be limited because of their relatively small size and apparent shallow depth and storage capacity. Although providing limited functional value on an individual basis, when combined, the wetlands contribute to the overall stormwater storage, conveyance, and water quality benefits.

Wildlife Habitat

Wetlands can provide wildlife with food, water, and shelter. Due to urban disturbance and the relatively degraded nature of the project corridor, wetlands provide habitat primarily for common and adaptable wildlife. Based on the INHS field observations, roughly half of the wetlands in the project corridor provide wildlife habitat. These wetlands range in size from 0.20 acre to over 31 acres in total size. Although wildlife habitat was not listed as a function for all project corridor wetlands, it is likely that all of the wetlands are used by wildlife on at least a limited basis, whether it is for resting, foraging, or some other use. The wetlands that INHS did not identify as providing wildlife habitat are relatively small (on average) and provide surface water storage.

Larger wetlands with a high interspersed cover have the potential to provide habitat for more diverse wetland fauna. Wetland complexes may provide a variety of strata (e.g., tree, shrub, and herbaceous) that different wildlife guilds can occupy. Factors important for wildlife include abundant cover for protection from predators, resting, and movement. The wetlands identified by INHS with the highest quality wildlife habitat (Sites 84 and 125) included relatively large marshes. These wetlands are 7.4 acres in size, or larger, and extend beyond the limits of the project corridor. Site 84 is located near the existing Elgin-O'Hare Expressway and Gary Avenue, in the vicinity of several other wetlands and open water areas. Site 125 is partially located within the Medinah Wetlands Forest Preserve at the southwest corner of the existing Elgin-O'Hare Expressway and Meacham/Medinah Road. Meacham Creek flows through this wetland.

Stabilization of Streambanks and Shorelines

Wetland vegetation and associated root mass located along streambanks and at pond perimeters may reduce the velocity of runoff from adjacent upland areas, hold soil in place, and minimize erosion. Sediments that are suspended in the runoff may settle and deposit when water velocity is reduced. Based on the INHS delineations, two wetlands within the project corridor (Sites 178 and 2C) provide streambank stabilization. Both are wet meadow wetlands located at Salt Creek and Thorndale Avenue.

Heritage Characteristics and Recreational Value

Heritage characteristics refer to wetlands that provide habitat for state- or federal-listed species, have high floristic quality value, or are located in designated lands, such as Illinois Nature Preserves, natural areas, forest preserves, parks, and wildlife refuges. Wetlands within the project corridor and having recreational value are generally in public ownership and are maintained for recreation.

A state-endangered bird, the black-crowned night-heron (*Nycticorax nycticorax*), was observed at a wet shrubland/marsh (i.e., Site 49) during the 2009 wetland delineations.

However, INHS stated that this wetland site did not appear to be good foraging habitat or a likely nesting spot; this wetland was not considered to have heritage characteristics (see subsection 3.14.1.3).

There are no Illinois Nature Preserves, natural areas, or wildlife refuges within the project corridor (IDNR and the Illinois Natural Heritage Database, 2011). Six wetlands (Sites 2C, 124, 125, 177, 178, and 181) are located within (or extend into) forest preserve property or public parks. These wetlands may provide passive recreational opportunities, including aesthetics or wildlife observation.

- **High Floristic Quality.** Appendix J summarizes the FQI, mean C-value, and percent adventive of each delineated wetland within the project corridor. Based on data collected during the field delineations, none of the wetlands identified within the project corridor have high floristic quality. However, one wetland (Site 158), located approximately 20 feet outside the project corridor on the east side of I-290 and north of Devon Avenue, has high floristic quality. Site 158 is a 1.47-acre marsh with an FQI of 22.8 (mean C-value = 3.1; percent adventive = 20.9). Some of the plant species occurring in this wetland appear to have been intentionally planted.
- **DuPage County Wetland Inventory – Critical Wetlands.** In DuPage County, the DuPage County Wetland Inventory (DCWI) identifies potential high quality wetlands. The DCWI mapping identifies two categories of wetlands – critical and regulatory.⁶⁷ Critical wetlands are high quality wetlands possessing one or more characteristics (e.g., high floristic quality, quality wildlife habitat/frequent use, habitat for threatened or endangered species, etc.) that result in a uniquely valuable environment (DuPage County, 2012). All wetlands in DuPage County that are not designated as critical are considered regulatory. The NWI does not distinguish between critical and regulatory wetlands for the purposes of quality evaluation; therefore, this method of quality determination could not be used in Cook County.

Based on the DCWI, two mapped critical wetlands are along the existing Elgin-O'Hare Expressway and proposed project corridor. One critical wetland area is mapped southwest of the intersection with Meacham Road/Medinah Road and the other location is adjacent to the West Branch DuPage River. The mapped DCWI critical wetland polygons overlap with wetland Site 125 and an existing open-water Elgin-O'Hare Expressway mitigation site (see Exhibit 3-17).

- **Mitigation Wetlands.** Compensatory wetland mitigation sites for projects previously authorized under Section 404 of the CWA are located within the project corridor. Sites 90 and 124 include known mitigation sites.⁶⁸ These two wetland sites include previously constructed mitigation areas located adjacent to the existing Elgin-O'Hare Expressway (USACE Permit No. 009359110). The wetlands consist of marsh and marsh/pond plant communities of varying size and fair quality, and include man-made stormwater detention areas. The Elgin-O'Hare Expressway wetland mitigation areas were deemed

⁶⁷ Several criteria are used to determine if a wetland is regulatory or critical. Mapped critical status should be confirmed based on additional evaluation. If additional evaluation does not confirm critical status, the wetland shall be considered regulatory (DuPage County, 2012).

⁶⁸ Due to the extent of development that has occurred in the vicinity of the project corridor, it is possible that additional mitigation sites could be located within or near the proposed improvements.

unsuccessful by the USACE, and a payment was made as compensation. A letter from the USACE documents “Final Sign-off” with respect to the mitigation areas (Wozniak, 2001). The letter states that no further action by IDOT is required to fulfill obligations pertaining to USACE Permit No. 009359110. The USACE confirmed that impacts to these unsuccessful mitigation areas would not require higher mitigation ratios under the CWA simply because they were constructed as compensatory wetland mitigation. The Elgin-O’Hare Expressway mitigation areas would be reviewed by the USACE in the same manner as other wetlands identified in the project corridor (Chernich, 2010). As such, they are not differentiated from other wetlands for the remainder of this document.

An additional mitigation site (USACE Permit No. 007869012) is located adjacent to the south side of the project corridor adjacent to Salt Creek at the Wood Dale – Itasca Reservoir. The mitigation site is primarily open water with a low-quality marsh wetland along the east shoreline (Site 180: C-value = 2.2; FQI = 4.9).

3.13.2 Environmental Consequences

This subsection describes wetland resources potentially impacted by the proposed improvements. Impacts to unvegetated waters of the U.S. are discussed in subsection 3.10.2. Wetland impacts associated with the transportation improvements include vegetation removal, discharge of clean fill material, and changes to hydrology. Impacts could be either direct or indirect. Direct wetland impacts would result from construction and the placement of fill material to construct the roadways and rail lines, ramps, and grading for drainage and stormwater management facilities. Indirect impacts could result from changes in hydrologic regime, quality of stormwater runoff, increased salt spray, or habitat continuity.⁶⁹

3.13.2.1 Acreage Impacts

Of the 118 field-delineated wetlands in the vicinity of the project corridor (66 of which are within the project corridor), the proposed project would impact up to 51 wetland sites (totaling approximately 23.0 acres) under the Build Alternative (see Table 3-48 and Appendix J).⁷⁰

Close to 90 percent of the potential wetland impacts associated with the proposed improvements would take place in DuPage County, with slightly over ten percent in Cook County. The majority of the overall wetland loss would be located in the Salt Creek Watershed (19 impact sites totaling 12.2 acres). Willow Creek would have slightly more impact sites (23), but less wetland loss (8.7 acres). Approximately 2.2 acres of wetlands at nine sites would be impacted in the remaining three watersheds (see Table 3-48 and Appendix J).

The wetland assessment for the Build Alternative is based on preliminary engineering and right-of-way estimate. Besides the loss of wetland area, wetland functions and values would be impacted by the proposed project. The potential impact of the proposed project on wetlands is discussed in the following subsections.

⁶⁹ Salt spray and the potential impacts of chlorides on the environment are discussed in subsection 3.10.2.3.

⁷⁰ A total of 2.45 acres of impact to unvegetated waters of the U.S. would be in addition to the 23.0 acres of wetland impact. Impacts to unvegetated waters of the U.S. are discussed in Section 3.10.2.

TABLE 3-48
Summary of Potential Wetland Impacts by Watershed

County	Addison Creek Watershed (acre)	Des Plaines River (Main Stem) Watershed (acre)	Salt Creek Watershed (acre)	West Branch DuPage River Watershed (acre)	Willow Creek Watershed (acre)	Total ^a (acre)	Percent of Total Acreage
Cook	0.0 (0 sites)	0.83 (2 sites)	0.13 (3 sites)	0.47 (4 sites)	1.32 (5 sites) ^a	2.75 (14 sites)	11.96
DuPage	0.22 (2 sites)	0.63 (1 site)	12.05 (16 sites)	0 (0 sites)	7.35 (18 sites)	20.25 (37 sites)	88.04
Total Acreage ^a	0.22 (2 sites)	1.46 (3 sites)	12.18 (19 sites)	0.47 (4 sites)	8.67 (23 sites)	23.00 (51 sites)	100.00
Percent of Total Acreage	0.96	6.35	52.96	2.04	37.70	100.00	

Note: See Table 3-49 and Appendix J for additional wetland impact information.

^a Totals may vary from other tables in this document due to rounding.

3.13.2.2 Functional Impacts

Past human disturbances and runoff from the urban environment appear to have adversely affected most of the wetland sites near the proposed improvements. In general, most of the project corridor wetland sites are dominated by invasive plant species and exhibit low diversity and low richness of native plant species.

The proposed project impacts up to 51 wetland sites, the majority of which are marsh wetlands or have a marsh component. The functions qualitatively analyzed for the impacted wetlands, defined under the Affected Environment (see subsection 3.13.1.2), include surface water and flood storage, wildlife habitat, stabilization of streambanks and shorelines, and heritage characteristics and recreational value. These wetland functions and the affected wetlands that exhibit them are summarized below.

Surface Water and Flood Storage

The principal function performed by the identified wetland sites is stormwater and flood storage, including conveyance and water quality benefits. All of the identified wetlands serve this function to some extent. In general, wetlands that would be impacted by the proposed improvements provide limited functional value on an individual basis, but when combined, the wetlands provide overall water quality benefits.

Overall, wetland functions (e.g., stormwater storage and water quality benefit) that are affected as a result of the proposed project are expected to be minimal. Functions lost as a result of wetland fill could be offset by proposed compensatory wetland mitigation, stormwater management facilities, and other best management practices. Wetland mitigation credit will not be generated within stormwater management facilities; however, these structures and other best management practices will provide some of the lost functions of stormwater storage and water quality benefit. Wetland mitigation will be

coordinated with the appropriate regulatory agencies so that wetland impacts are adequately compensated in accordance with applicable federal and state regulations.

In addition to wetland mitigation, to minimize potential environmental impacts at (and downstream from) the project, stormwater detention and compensatory storage facilities will be provided to compensate for increased impervious area and floodplain fill associated with the Build Alternative (see subsection 3.12.3). To provide water quality benefits, improvements would be designed, as practical, to infiltrate, detain, or treat stormwater runoff before it is discharged to surface waters. Best management practices that control the volume and treat stormwater runoff will be considered during final design to reduce pollutant loads to wetlands and other receiving waters, while maintaining the hydrology of the watershed to the extent possible (see subsection 3.10.3).

Wildlife Habitat

Roughly half of the wetlands in the project corridor were noted by INHS as providing wildlife habitat. The urban nature of the project corridor and surrounding areas tend to limit habitation by sensitive wildlife species that may be found in protected lands located outside and beyond the scope of the proposed improvements. Wildlife species in urban and suburban areas tend to be tolerant of disturbance and human activities and generally are common, adaptable species. Wetlands that would be impacted as a result of the proposed improvements are located primarily in developed areas adjacent to existing transportation infrastructure that provides limited wildlife use potential. Most wetland impacts would affect relatively small percentages of larger wetland complexes (mainly impacts to the perimeter of wetlands located adjacent to existing roadways) or comparatively smaller wetlands located in previously fragmented habitats and do not dramatically alter wildlife habitat by bisecting large wetlands. Thus, wildlife habitat impacts associated with the affected wetlands would be minimal (see subsection 3.14).

Two wetlands with high-quality wildlife habitat were identified by INHS within the project corridor at Sites 84 and 125. These wetland sites are relatively large marshes, and the impacts would be located at the perimeter of the wetland. The majority of the wetland areas will remain following construction of the proposed improvements. To the extent practicable, best management practices and a wetland buffer will be incorporated into the plan near wetland Sites 84 and 125. Native plant species that meet FAA wildlife hazard safety requirements will be considered when designing seed mixes for the wetland buffers. Thus, the impacts to the wildlife habitat functions of these wetlands are anticipated to be minimal. Site 125 is discussed in additional detail below in the subsection "Heritage Characteristics and Recreational Value."

Wetlands generally attract wildlife (including birds), which could result in aircraft/wildlife strikes near airports. Approximately 60 percent of the project corridor wetland sites are within 10,000 feet of O'Hare Airport or the Schaumburg Regional Airport. A reduction in wildlife habitat (i.e., filling low-quality wetlands) near the airport would be in accordance with FAA guidelines and is consistent with the O'Hare Airport *Wildlife Hazard Management Plan* (USDA, 2010), see subsection 3.10.3.2. As discussed in the *Wildlife Hazard Management Plan*, wildlife control efforts (including working cooperatively with adjacent property owners) would be concentrated primarily within a 10,000-foot radius of the runway centerline (i.e., critical area), where arriving and departing aircraft are typically operating at

or below 500 feet above ground level (USDA, 2010). Approximately 75 percent of all civilian bird/aircraft strikes occur within this 10,000-foot critical area.

Stabilization of Streambanks and Shorelines

Two wetlands within the project corridor (i.e., Sites 178 and 2C) provide streambank stabilization. These wetlands are located north and south of Thorndale Avenue along the east and west sides of Salt Creek. Soil erosion and sediment control measures will be installed in areas of active construction near Salt Creek and its adjacent wetland areas. Disturbance of streamside vegetation will be kept to a minimum. As necessary, to minimize disturbance, low ground pressure equipment or other protective measures (e.g., timber mats) will be used if temporary construction activities are required at Site 178 or 2C and Salt Creek. To minimize soil loss and subsequent sedimentation, an erosion and sediment control plan will be prepared as part of the contract documents (see subsection 3.10.3).

Streambank stabilization functions of the impacted wetlands will be compensated by vegetative and/or structural methods. Plant species listed in the *O'Hare Modernization Program Master Specifications*, "Section 02905: Sustainable Airport Landscaping," will be considered when designing seed mixes to address FAA wildlife hazard safety requirements. This plant list includes several native species and was previously provided to the USACE, USEPA, USFWS, and IDNR for review. Proposed grading and erosion controls (including stream protection) will be reviewed as part of the Section 404 CWA permit process. Disturbed areas, including the streambank, will be stabilized as soon as practical in accordance with NPDES requirements. Final stabilization will follow the Illinois Tollway's *Erosion and Sediment Control, Landscape Design Criteria* manual (Illinois Tollway, 2012) for construction projects associated with the proposed tolled facility. Chapters 41 (Construction Site Storm Water Pollution Control) and 59 (Landscape Design) of IDOT's *BDE Manual* (IDOT, 2011) will be followed for construction associated with free roads. The IDOT and Illinois Tollway standard specifications (including supplemental specifications) will also be followed, as applicable. When the disturbed streambank has reached final grade (or if the area will sit idle), the streambank will be seeded and slopes will be protected with erosion control blanket, as necessary, to minimize erosion.

Heritage Characteristics and Recreational Value

There are no proposed impacts to wetlands with a recorded presence⁷¹ of state- or federal-listed threatened or endangered species, or their critical habitat. In addition, there are no proposed impacts to designated lands (e.g., INAI sites) or high-quality floristic communities (e.g., FQI of 20 or higher and/or native mean C-value of 3.5 or more). Six wetlands in the project corridor (Sites 2C, 124, 125, 177, 178, and 181) are located within (or extend into) forest preserve property or public parks. An additional wetland (Site 180) is located approximately 180 feet south of the project corridor within forest preserve property adjacent to Salt Creek at the Wood Dale–Itasca Reservoir. Site 180 is also a previously constructed mitigation site. However, the mitigation site is degraded and primarily consists of open water. Wetland impacts near the forest preserves and parks have been minimized, and no wetland fill is proposed within the limits of these public lands. Therefore, impacts to the recreational value of these wetlands are not anticipated.

⁷¹ As defined in the IWPA, "presence" includes listed plants or mussels with individuals or populations that occur within the area that is to be adversely impacted by a proposed action. For mobile species, "presence" is based on the existence of confirmed nesting or breeding sites in the area to be adversely impacted by the proposed action.

Based on the DCWI, two mapped critical wetlands are located adjacent to the existing Elgin-O'Hare Expressway. The mapped critical wetlands overlap with wetland Site 125 and an existing open-water Elgin-O'Hare Expressway mitigation site at the West Branch DuPage River (see Exhibit 3-17). Impacts are not anticipated at the existing open-water site.

Site 125 is a large marsh (estimated at approximately 61.8 acres)⁷² dominated by reed canary grass, common reed, and narrow-leaved cattail. The entire field-identified wetland is not mapped as critical. Based on the floristic inventory data collected for this project, the wetland is fair quality (mean C-value equals 2.3; FQI equals 15.1; percent adventive equals 23.6). The wetland provides high-quality wildlife habitat and a large amount of surface water storage. It is most likely mapped as critical due to its habitat function (e.g., large wetland complex, interspersed vegetative cover). The wetland has a direct hydrologic connection to Meacham Creek, which flows through the marsh. Approximately 0.2 acre (or less than 0.5 percent) of the wetland will be directly impacted by the Build Alternative. Wetland impacts will be minimized by installing a retaining wall at the construction limits. Impacts are expected to be associated with lower-quality habitat at the perimeter of the wetland adjacent to the existing Elgin-O'Hare Expressway, and no impacts are proposed within potentially higher-quality interior wetland habitat. No fragmentation of the critical wetland habitat would occur. Recreational or educational amenities would not be affected as a result of the Build Alternative.

3.13.3 Measures to Minimize Harm and Mitigation

In accordance with state and federal policies and regulations for wetland preservation, including the Section 404(b)(1) *Guidelines for Specification of Disposal Sites for Dredged or Fill Material* (40 CFR, Part 230), the following discussion summarizes the wetland avoidance, minimization, and mitigation strategies for the proposed project.

3.13.3.1 Wetland Avoidance and Minimization of Impacts

Based on the field delineations completed for Tier Two, 118 wetland sites were identified in the vicinity of the project corridor. Of these wetland sites, the proposed project will impact fewer than half of the wetland sites (up to 51 sites) totaling approximately 23.0 acres. The Build Alternative does not impact any wetlands with a recorded presence of state- or federal-listed threatened or endangered species or their critical habitat. In addition, there are no proposed impacts to INAI sites or high-quality floristic communities (e.g., FQI equal to 20 or more and/or native mean C-value equal to 3.5 or more).

One wetland in the vicinity of the project corridor has high floristic quality: Site 158 (mean C-value of 3.1; FQI of 22.8). This wetland will be avoided by the proposed improvements. In addition, a known mitigation site at the Wood Dale-Itasca Reservoir (Site 180 and adjacent open water), located along the south side of Thorndale Avenue at Salt Creek, will be avoided by the project.

It is not possible to construct this project and completely avoid wetland impacts. Existing wetlands are located within and adjacent to the project corridor associated with existing right-of-way, expressways, other roads, and rail lines. Any road widening or additional rail lines would impact wetlands in these locations. The project corridor is located in a

⁷² Based on the INHS wetland delineation in the vicinity of the project corridor and a review of aerial photography for areas beyond the scope of the fieldwork.

constrained, developed area with many adjacent urban land uses. Minimization of residential, commercial, and industrial displacements or other potential socioeconomic or environmental impacts make it difficult or impractical to shift the proposed alignment to avoid additional wetland impacts.

As part of the preferred corridor (established in Tier One), the majority of the West Bypass is located on the west side of O'Hare Airport. Wetlands within the West Bypass corridor have been filled as part of the OMP, and the land has been cleared for future development, thus minimizing wetland impacts associated with the West Bypass.

In a future design phase, IDOT and the Illinois Tollway will investigate additional measures to minimize wetland impacts, such as:

- Minor refinements in roadway alignment.
- Narrower roadway cross-sections with the use of:
 - Narrower center medians.
 - Narrower shoulders.
 - Retaining walls.
 - Steeper roadway embankments.
 - Enclosed drainage systems.
- Refined bridge and culvert specifications.
- Use of equalizer pipes to maintain wetland hydrology.
- Implementation of proper soil erosion and sediment control measures to minimize sediment deposition at adjacent wetlands (see subsection 3.10.3.1).

Final avoidance and minimization factors will be reviewed during the permitting process. Wetland impacts will be reviewed in accordance with state and federal regulatory procedures to ensure that wetlands are avoided, or impacts are minimized or compensated for appropriately. Upland buffers (of appropriate vegetation, as approved by the appropriate state and federal review agencies) will be established and maintained within the right-of-way adjacent to remaining wetlands. Appropriate wetland compensatory mitigation will be provided, and water quality and quantity best management practices will be implemented as necessary to comply with regulatory requirements and to protect the downstream aquatic environment from potential construction, operation, and maintenance impacts associated with the proposed improvements. Therefore, the wetland displacement associated with the Build Alternative is not expected to have a net negative effect on the larger Des Plaines River drainage basin or the region. Wetland compensation is discussed below in subsection 3.13.3.2.

3.13.3.2 Wetland Compensation

State and federal regulations require compensatory mitigation when there are no practicable alternatives to filling wetlands. State-sponsored or funded projects that impact wetlands are

regulated by the IDNR under the IWPA. Federal jurisdiction under Section 404 of the CWA also will be assumed for all of the project corridor wetlands.^{73,74}

At a meeting on December 17, 2010, the USACE stated a preference for wetland mitigation to take place in the vicinity of the proposed wetland impacts. To accommodate this request, a meeting was held with various stakeholders on January 25, 2011. As part of this meeting, a workshop was conducted to identify potential mitigation sites in the vicinity of the project corridor. Stakeholders were consulted on preferable criteria and site exclusion criteria. Suggested sites were reviewed for wetland mitigation potential.

The Build Alternative is located in a densely developed area adjacent to two airports. Wetland mitigation sites have the potential to attract wildlife. Therefore, mitigation site selection must consider the potential to attract wildlife (e.g., waterfowl and other bird species) that could pose a threat to aircraft, as required in the July 2003 MOA signed by the FAA, USACE, USEPA, and USFWS. The FAA AC No. 150/5200-33B, *Hazardous Wildlife Attractants on or near Airports*, recommends that wetland mitigation projects (that may attract wildlife hazardous to airport operations) be located outside defined wildlife hazard separation distances (see FAA guidance in subsection 3.10.3.2).

At a meeting on April 21, 2011, FAA stated that “new” wetland mitigation sites shall not be located within five miles of O’Hare Airport or 10,000 feet from the Schaumburg Regional Airport. This requirement excludes the vast majority of the project corridor from consideration. There are also several other airports in the surrounding area where this restriction would apply (see Exhibit 3-15). These requirements limit the area and, consequently, the number of sites near the project corridor that could be used as onsite mitigation (or within one mile) for this project.

Wetland impacts associated with the proposed EO-WB improvements are located within one hydrologic basin, the Des Plaines River drainage basin (HUC 07120004), and involve several wetland types. The project qualifies as a Standard Review Action under the IDOT Wetlands Action Plan as approved by IDNR. The IWPA has established compensatory wetland mitigation ratios for all state-sponsored or funded projects. It is anticipated that mitigation will take place within the Des Plaines River drainage basin, but more than one mile from the Build Alternative due to the airport-wildlife hazard separation distance requirements. The wetland compensation requirements that are likely to be implemented for the proposed project are shown in Table 3-49. As a Standard Review Action with the wetland mitigation occurring offsite and within the basin, three ratios would potentially apply to the project. These ratios are 2:1 for impacts less than or equal to 0.5 acre, 4:1 for impacts more than 0.5 acre, and 5.5:1 for wetland impacts in the following cases:⁷⁵

- Alteration of wetlands that contain state- or federal-listed threatened or endangered species.

⁷³ In addition to federal and state regulations, DuPage County also regulates wetland impacts through the DuPage County Countywide Stormwater and Flood Plain Ordinance (revisions effective April 25, 2012). Any component of the alternatives that may be local non-IDOT/Illinois Tollway roads may be subject to the DuPage County Countywide Stormwater and Flood Plain Ordinance or the pending Cook County Watershed Management Ordinance.

⁷⁴ The USACE acknowledged this approach at the NEPA/404 merger meeting on February 15, 2011.

⁷⁵ The compensation ratios represent the current compensation guidelines required for wetland impacts in Illinois by the IWPA; however, DuPage County and the USACE have identified certain wetland resources (e.g., critical wetlands in DuPage County; High Quality Aquatic Resources) requiring elevated compensatory wetland mitigation.

- Wetlands that contain essential habitat for state- or federal-listed species.
- Presence of an INAI site.
- A mean C-value of 4.0 or more (Swink and Wilhelm, 1994).
- Individual wetlands with an FQI of 20 or more (Swink and Wilhelm, 1994).

Based on a review of data collected for this project, the 5.5:1 mitigation ratio (under the IWPA) does not apply for the anticipated wetland impacts.

Based on preliminary engineering, it is anticipated that 23.0 acres of wetland would be impacted by the proposed project and up to 77.2 acres of wetland compensation would be required. IDOT and the Illinois Tollway have separate agreements with IDNR, which determine the mitigation ratios for each impact. The Illinois Tollway will be responsible for coordinating final ratios with IDNR prior to the permitting process. IDNR prefers that wetland mitigation for this project consider the use of existing wetland mitigation banks and/or the use of land that is either an unprotected natural area or open space not currently protected by a resource agency.⁷⁶ The goal of the state is that state-supported activities do not result in an overall net loss of the state's existing wetland acres or functional values. The wetlands to be impacted by the proposed project do not appear to provide irreplaceable functions.

For this project, wetland mitigation preferences (in descending preferential order) include:

1. Wetland mitigation banking within a USACE-approved bank (i.e., purchasing wetland mitigation credits).⁷⁷
2. Onsite – within the same hydrologic unit and less than one mile from the project site.⁷⁸
3. Offsite, within basin – the same hydrologic unit, but more than one mile from the project site.
4. Waters of the U.S., including wetlands, within the Salt Creek Watershed in cooperation with the DRSCW.⁷⁹
5. Offsite, out of basin – compensation not provided within the watershed of the impacted wetlands.

⁷⁶ Based on a May 13, 2011, conference call between IDNR, IDOT, and project consultants.

⁷⁷ The option most preferred is mitigation bank credits. See the *Compensatory Mitigation for Losses of Aquatic Resources: Final Rule* (USACE, 2008).

⁷⁸ Locating wetland/waters of the U.S. mitigation near the project corridor is preferred, more specifically in the affected watersheds. As practical and feasible, wetland/waters of the U.S. mitigation will be driven by an assessment of watershed needs. However, due to the previously mentioned constraints and the extent of developed land/relative scarcity of large, available, privately owned parcels within one mile of the proposed project, this may not be possible.

⁷⁹ Depending on available sites, mitigation for unvegetated waters of the U.S. could include re-meandering channelized streams, removing/replacing existing drain tiles/culverts with stabilized stream channels, stabilizing eroded streambanks, constructing in-stream habitat, creating riparian buffer, etc.

The following compensatory wetland mitigation strategies were considered with the above preferences:

- One overall mitigation site because larger sites provide economies of scale and facilitate long-term management for a composite of desired wetland functions, values, and biodiversity.
- Sites located outside FAA-defined wildlife hazard separation distances.
- Sites with no impediments to immediate design, permitting, and construction.
- Sites that provide a high plant ground cover and diversity, contain minimal invasive species, provide wetland functions, and improve the quality of the resource.
- Sites that provide, to the extent practicable, in-kind replacement of impacted wetlands and streambank ecosystems.
- Sites that may support a diverse ecosystem with hydrologic/ecologic connections to other ecosystems and associated riparian areas.
- Sites that have a high likelihood of success.
- Acquisition and land protection.

In the examination of the various mitigation strategies, the approach for the EO-WB project will likely involve a combination of strategies. In accordance with the federal Compensatory Mitigation Rule mitigation hierarchy, purchasing credits in a USACE-approved wetland mitigation bank should be considered first for this, or any, project. There are currently ten USACE-approved wetland mitigation bank sites with available credits in the Des Plaines River drainage basin (as of July 2012). Available wetland mitigation credits vary over time, as available credits are purchased and as new credits become available. Due to the extent of potential wetland impacts associated with the EO-WB project and the magnitude of the compensatory wetland mitigation credits that the regulatory agencies are anticipated to require, it is unlikely that purchasing credits in a mitigation bank would be the primary method used to accomplish the wetland mitigation. Alternate mitigation methods have been discussed with federal and state resource agencies on several occasions (see Section 4).

Wetland mitigation within or immediately adjacent to the project corridor is not possible when considering FAA wildlife hazard guidance and IDNR's preference to not use existing public lands. Under the IWPA, mitigation sites located farther from the wetland impact site require higher mitigation ratios. The USACE recognized these constraints, and requested that additional coordination with FAA, IDNR, and local resource agencies take place with regards to site location. The USACE also indicated a preference for the wetland/waters of U.S. mitigation to be accomplished at a small number of large site(s).⁸⁰

One or two large mitigation sites are preferred to accomplish the wetland/waters of U.S. mitigation. Larger compensatory mitigation projects (generally greater than 25 acres) often have less risk and uncertainty than smaller wetland mitigation areas. Larger wetland mitigation sites are also more manageable than numerous smaller, isolated sites and

⁸⁰ Based on a September 22, 2011 meeting between USACE, USFWS, FAA, FHWA, and project consultants and a January 30, 2012 meeting between USACE, USEPA, USFWS, and project consultants.

typically provide substantial economies of scale and higher likelihood of success. The mitigation site(s) will be developed and reviewed in coordination with resource agencies that include the IDNR, IEPA, USACE, USEPA, USFWS, and FAA.

Based on further coordination with USACE, USEPA, USFWS, IDNR, FAA, USDA-APHIS, IDOT, and the Illinois Tollway, the most likely mitigation scenario for the EO-WB project would involve working with a local land steward to acquire sites where wetland mitigation could be completed. Coordination with local forest preserve districts and the DRSCW has occurred to assess local sites within the Salt Creek Watershed to potentially provide compensation for DuPage County wetland impacts within DuPage County⁸¹ and/or the specific affected watersheds.

Wetland/waters mitigation would be implemented offsite, but within the Des Plaines River drainage basin. More than 20 potential mitigation sites have been presented to the appropriate federal and state regulatory agencies for review. All sites under review by the federal and state agencies are private properties and represent new acquisition. All of the sites contain existing wetland that will be incorporated into the restoration and enhanced as part of the overall project. One or more of the sites under consideration will be necessary to satisfy the wetland impact mitigation ratios. A final decision regarding wetland mitigation approach and site selection will be completed during the Section 404 permitting process and IWPA review. The mitigation sites will be conveyed (if necessary) to a steward, such as a forest preserve district, for long term maintenance.

Acquisition of wetland/waters mitigation sites will most likely be accomplished by one of two methods: 1) an IGA between the Illinois Tollway and land steward that specifies a partnership wherein the steward acquires the needed property and the Illinois Tollway develops the build-out of the mitigation; 2) the Illinois Tollway both acquires and develops the property and then conveys it to the long term property steward.

The location of the compensatory wetland mitigation will be finalized following agreement on the wetland replacement ratio and other mitigation objectives. Table 3-49 shows the wetland impact and likely compensation summary.

TABLE 3-49
Wetland Impact and Compensation Summary

Site No.	Exhibit Sheet No. ^a	Wetland Type	FQI	Mean C-Value	Total Wetland Size (acre) ^b	Impact Area (acre)	Mitigation Ratio ^c	Wetland Mitigation Credits Required	Function
6	J-10	marsh	11.6	2.3	2.97	0.004	2:1	0.01	surface water storage, fair quality wildlife habitat
21	J-9	marsh	4.0	1.8	0.03	0.03	2:1	0.06	surface water storage

⁸¹ Wetland mitigation for local non-IDOT/Illinois Tollway road projects subject to the DuPage County Countywide Stormwater and Flood Plain Ordinance will be provided in DuPage County, as required.

TABLE 3-49
Wetland Impact and Compensation Summary

Site No.	Exhibit Sheet No. ^a	Wetland Type	FQI	Mean C-Value	Total Wetland Size (acre) ^b	Impact Area (acre)	Mitigation Ratio ^c	Wetland Mitigation Credits Required	Function
27	J-9	marsh	8.0	2.1	0.74	0.74	4:1	2.96	surface water storage
28	J-9	marsh/pond	10.1	2.4	1.85	0.29	2:1	0.58	surface water storage
42	J-8	wet shrubland	10.4	2.1	0.26	0.26	2:1	0.52	surface water storage
49	J-7	wet shrubland/marsh	10.6	2.0	1.94	1.94	4:1	7.76	surface water storage, wildlife habitat
50	J-7	wet shrubland/marsh	10.3	2.4	0.97	0.56	4:1	2.24	surface water storage, wildlife habitat
52	J-7	wet shrubland	9.7	2.4	0.25	0.25	2:1	0.50	surface water storage, wildlife habitat
53	J-7	marsh	8.7	2.1	0.43	0.43	2:1	0.86	surface water storage, wildlife habitat
54	J-7	forested depression	8.9	2.6	0.25	0.25	2:1	0.50	surface water storage, wildlife habitat
55	J-7	wet meadow	9.4	2.6	0.41	0.41	2:1	0.82	surface water storage, wildlife habitat
59	J-7	wet shrubland/marsh	6.1	1.6	0.30	0.15	2:1	0.30	surface water storage
61	J-7	marsh	3.7	1.2	0.98	0.17	2:1	0.34	surface water storage
62	J-7	wet shrubland	12.4	2.5	0.70	0.05	2:1	0.10	surface water storage, wildlife habitat
64	J-12	marsh	13.3	2.6	0.63	0.63	4:1	2.52	surface water storage, wildlife habitat
71	J-13	forested depression	10.3	2.3	0.51	0.51	4:1	2.04	surface water storage, wildlife habitat
78	J-14	marsh	4.0	2.3	0.20	0.20	2:1	0.40	surface water storage

TABLE 3-49
Wetland Impact and Compensation Summary

Site No.	Exhibit Sheet No. ^a	Wetland Type	FQI	Mean C-Value	Total Wetland Size (acre) ^b	Impact Area (acre)	Mitigation Ratio ^c	Wetland Mitigation Credits Required	Function
84	J-1	marsh	10.9	2.4	7.35	0.16	2:1	0.32	high quality wildlife habitat, large amount of surface water storage
89	J-1	wet meadow	8.5	3.0	0.08	0.08	2:1	0.16	surface water storage
90	J-1	marsh	11.8	2.6	1.19	0.13	2:1	0.26	wildlife habitat, surface water storage
91	J-1	marsh	1.3	0.6	0.10	0.10	2:1	0.20	surface water storage
113	J-2	forested depression	14.3	2.9	0.20	0.07	2:1	0.14	wildlife habitat, surface water storage
114	J-2	marsh	13.8	2.2	2.39	0.01	2:1	0.02	wildlife habitat, surface water storage
124	J-3	marsh/pond	13.3	2.4	13.34	0.05	2:1	0.10	wildlife habitat, surface water storage, heritage/recreation
125	J-3	marsh	15.1	2.3	31.43	0.21	2:1 ^d	0.42	high quality wildlife habitat, large amount of surface water storage, heritage/recreation
134	J-3	marsh	11.7	2.5	0.52	0.52	4:1	2.08	wildlife habitat, surface water storage
137	J-5	marsh/pond	7.9	3.0	1.93	0.12	2:1	0.24	wildlife habitat, surface water storage
138	J-5	marsh	7.2	2.1	2.93	0.50	2:1	1.00	surface water storage
139	J-5	marsh	9.0	2.7	0.34	0.34	2:1	0.68	surface water storage
140	J-5	marsh	10.2	2.0	3.21	3.21	4:1	12.84	surface water storage
141	J-5	marsh	6.1	1.5	0.49	0.49	2:1	0.98	surface water storage

TABLE 3-49
Wetland Impact and Compensation Summary

Site No.	Exhibit Sheet No. ^a	Wetland Type	FQI	Mean C-Value	Total Wetland Size (acre) ^b	Impact Area (acre)	Mitigation Ratio ^c	Wetland Mitigation Credits Required	Function
142	J-5	marsh	9.6	2.0	0.89	0.89	4:1	3.56	surface water storage
151	J-5	marsh	4.5	2.0	0.16	0.16	2:1	0.32	surface water storage
152	J-5	marsh	13.3	2.7	0.99	0.99	4:1	3.96	surface water storage
164	J-5	forested depression	11.5	2.1	5.18	0.72	4:1	2.88	wildlife habitat, surface water storage
172	J-5	wet meadow	6.7	1.5	0.32	0.32	2:1	0.64	surface water storage
178	J-6	wet meadow	7.2	2.0	2.48	0.72	4:1	2.88	flood water storage, streambank stabilization, wildlife habitat, heritage/recreation
181	J-6	marsh	7.8	1.9	2.30	2.30	4:1	9.20	wildlife habitat, surface water storage, heritage/recreation
184	J-6	marsh	3.9	1.2	0.20	0.20	2:1	0.40	surface water storage
187	J-6	forested depression	10.0	2.2	0.81	0.81	4:1	3.24	wildlife habitat, surface water storage
188	J-6	pond	8.0	2.1	0.21	0.21	2:1	0.42	surface water storage
189	J-6	forested depression	7.3	1.8	1.03	1.03	4:1	4.12	wildlife habitat, surface water storage
190	J-6	forested depression	6.3	1.9	0.34	0.34	2:1	0.68	wildlife habitat, surface water storage
191	J-6	marsh	5.7	1.9	0.14	0.14	2:1	0.28	surface water storage
192	J-6	wet meadow	9.9	2.3	0.06	0.06	2:1	0.12	surface water storage
194	J-6	marsh	6.3	2.1	0.14	0.14	2:1	0.28	surface water storage

TABLE 3-49
Wetland Impact and Compensation Summary

Site No.	Exhibit Sheet No. ^a	Wetland Type	FQI	Mean C-Value	Total Wetland Size (acre) ^b	Impact Area (acre)	Mitigation Ratio ^c	Wetland Mitigation Credits Required	Function
195	J-7	marsh	6.1	2.5	0.20	0.20	2:1	0.40	surface water storage
2C	J-6	wet meadow	8.5	2.2	0.88	0.38	2:1	0.76	flood water storage, streambank stabilization, wildlife habitat, heritage/recreation
3A	J-14	marsh	4.1	1.7	0.02	0.02	2:1	0.04	surface water storage
5C	J-5	wet meadow	1.7	1.0	0.19	0.19	2:1	0.38	surface water storage
11C	J-13	marsh	3.0	1.5	0.32	0.32	2:1	0.64	surface water storage
Total					95.78	23.00		77.15	

Note: Impacts to unvegetated waters of the U.S. are discussed in subsection 3.10.2 and are not included in this table.

^a See Appendix J for exhibits.

^b Some wetlands may extend beyond the study limit. Acreage is based on delineated area.

^c Compensation is based on the mitigation ratios in the IWPA (Standard Review Action and mitigation located offsite within basin). The IWPA ratios generally are more stringent than those established by the USACE.

^d Wetland overlaps mapped DuPage County critical wetland. Under the local DuPage County Countywide Stormwater and Flood Plain Ordinance, critical wetland impacts require compensatory wetland mitigation at a 3:1 mitigation ratio. This ratio could be applicable for any local, non-IDOT/Illinois Tollway component of the project.

3.13.3.3 Only Practicable Alternative Finding - Wetlands

Executive Order (EO) 11990, *Protection of Wetlands*, requires federal agencies to avoid (to the extent practicable) long- and short-term adverse impacts associated with the destruction or modification of wetlands. More specifically, EO 11990 directs federal agencies to avoid new construction in wetlands, if a practicable avoidance alternative exists. Where wetlands cannot be avoided, the proposed action must include all practicable measures to minimize harm to wetlands (see subsection 3.13.3.1).

The alternatives development process for the EO-WB project spanned the Tier One and Tier Two evaluations. The *EO-WB Tier One ROD* approved the preferred improvement and project corridor (location). The corridor that emerged from Tier One was well-defined, and its location was fixed by the *EO-WB Tier One ROD*. The project corridor was fully supported by local communities and exhibited the best travel performance characteristics, while having relatively low impacts compared to other alternative strategies. Avoidance and minimization of wetland impacts (along with other environmental and socioeconomic issues) were important factors in the development of the project corridor and screening of alternatives. In general, alternatives with notable wetland impacts, such as those that

overlapped with mapped threatened and endangered species sites or that were located in special lands (e.g., forest preserves) were dismissed in Tier One. Alternatives that involved potentially higher-quality wetland areas were also eliminated from consideration, or potential impacts were minimized.

Tier Two considered the optimal arrangement of design features within the project corridor that provide cost effective travel performance while reducing environmental and socioeconomic impacts. The design features included mainline lane requirements, interchange types, arterial improvements, drainage requirements, and other factors (i.e., transit facilities, bicycle and pedestrian facilities, etc.).

Based on the above considerations (including subsection 3.13.3.1), it is determined that there is no practicable alternative to the proposed construction in wetlands, and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

Prior to construction, all necessary wetland permits and approvals (e.g., Section 404 CWA) will be obtained. Wetland impacts are summarized in Table 3-49. Because this project occurs on new alignment, it is being processed as a Standard Review Action, in accordance with the IDOT Wetlands Action Plan, and coordinated with IDNR. Wetland Impact Evaluation forms were submitted to IDNR for review. On August 8, 2012, IDNR concurred with the impacts to wetlands (see Appendix B).

3.13.4 Indirect and Cumulative Wetland Impacts

More than 90 percent of Illinois' original eight million acres of wetlands have been destroyed by human modification (Suloway and Hubbell, 1994). Wetlands reportedly once covered more than 23 percent of Illinois. Wetland degradation in Illinois and in the vicinity of the project corridor historically was associated with agriculture, but recent degradation is attributed to urban development.

The majority of the wetlands that are impacted by the proposed improvements include wetlands that are located adjacent to existing roadways or rail lines. Wetlands in the project corridor and the immediate vicinity include predominantly low- to fair-quality, disturbed vegetative communities that are dominated by invasive plant species and have relatively low diversity or richness of native plant species. The proposed project may further impact these wetlands through direct fill, changes in hydrology, or stormwater runoff. These potential indirect wetland impacts have been included with the direct wetland impacts in Table 3-49. Indirect wetland impacts could cause further degradation as a result of point source and nonpoint source pollution resulting in an increase in the presence of adventive (non-native) plant species. Potential indirect impacts as a result of construction, operation, or maintenance of the facility would be minimized through the use of water quality and quantity best management practices (see subsection 3.10.3). Indirect wetland impacts are anticipated to be minimal.

The majority of the project corridor and surrounding land is developed. Based on a review of available wetland mapping (i.e., NWI and DCWI), the majority of the wetlands in the watersheds that receive runoff from the project corridor are located in undeveloped protected areas, such as special lands (e.g., forest preserves) or 100-year floodplain

corridors. Special lands, floodplains, and wetlands are protected by federal, state, and/or local (e.g., DuPage County) regulations.

In the project corridor watersheds, it is anticipated that future wetland loss generally would be attributed to urban development at vacant lots and redevelopment of properties. Wetlands that are filled for development purposes would be mitigated as required under Section 404 of the CWA and/or other state and local regulations. Therefore, future development near the project corridor is not expected to greatly affect the total number of wetlands in the Des Plaines River drainage basin. Future projects, including those prompted by the proposed EO-WB improvements, are expected to avoid or minimize wetland impacts to meet regulatory requirements and to minimize the expense associated with compensatory wetland mitigation. Future development would also tend to avoid wetlands located in the protected areas mentioned.

From a broader perspective, it is expected that the cumulative loss of wetland acreage to development in Cook and DuPage Counties would slow in the future. Past wetland loss due to urban and agricultural development has led to a reduction in the overall acreage of remaining wetland areas. Remaining wetland areas are subject to strict wetland regulations at the federal, state, county, and municipal levels. These regulations promote the continued preservation of wetland areas and a reduction in future wetland losses. In addition, these wetland regulations require higher mitigation ratios. Under the protection granted to wetlands (Section 404 of the CWA), mitigation guidelines require that wetland losses of more than 0.10 acre be replaced at a ratio of 1.5:1 or greater (depending on the type and quality of wetland affected, the mitigation ratios may be higher). In many cases, more wetlands are being created than destroyed by individual projects. In-kind replacement has been elevated as an objective, lessening the potential for changing wetland composition in the area. These mitigation requirements are applicable to both public and private projects.

The IWPA (applicable to state/state pass-through-funded projects) also provides protection to wetlands and requires mitigation for all wetland impacts regardless of size. Overall, this legislation has been effective for mitigating the loss of wetlands from public projects that receive state/state pass-through funding. This has helped to slow total wetland loss across the state. DuPage County has developed a wetland protection ordinance to fill potential gaps in state and federal regulations, and Cook County is preparing a watershed management ordinance that includes wetland protection.

Land management is another mechanism that can minimize the potential conversion of special resources, such as wetlands. Examples are park districts, forest preserves, state parks, and natural areas that provide long-term protection to special resources within their boundaries.

These practices minimize wetland losses due to urban development, slow or stop the rate of wetland loss near the project corridor and, thus, the overall cumulative impact. The percent of existing wetland loss that would result from the Build Alternative represents a small fraction of the total wetland acreage found in the local region. Based on NWI and DCWI mapping, there are approximately 10,235 acres of mapped wetlands within the six watersheds

that are near the project.⁸² Based on information provided by S.B. Friedman & Company (2011), an evaluation of the indirect and cumulative impacts that potential development near the project could have on wetland resources was completed. It is estimated that over the next 30 years, roughly two percent of the mapped wetlands in the six watersheds near the project could be impacted. Ultimately, there would be a net increase in total wetlands as a result of the mitigation for these projects.⁸³ Thus, the net indirect and cumulative impacts of the proposed project on wetlands are anticipated to be minimal.

3.14 Natural Resources

3.14.1 Affected Environment

This subsection describes plants and wildlife, including invasive species and threatened and endangered species, located proximate to the project corridor. Information contained in this section is primarily based on existing information. Unless otherwise noted, field surveys were not conducted for the project corridor.

3.14.1.1 Upland Plant Communities

The project corridor lies within the Northeastern Morainal Natural Division in Illinois (Schwegman, 1973). Urban land is the predominant cover type. Similar to most of Illinois, the natural land cover has been extensively altered. Within this natural division, urban development continues to be a major environmental stressor.

Northeastern Illinois has not only a larger population than the rest of Illinois but also the most acreage of protected natural areas (IDNR, 2005). The Northeastern Morainal Natural Division includes several designated resource-rich areas (RRAs), or areas that are rich in biological resources (Suloway et al., 1996).⁸⁴ The project corridor does not lie in one of these designated RRAs, and no high-quality natural plant communities were observed during field visits (Handel, 2009; Handel, 2010).

Land Cover

Table 3-50 summarizes the land cover within the project corridor, which is the result of the Illinois Interagency Landscape Classification Project (IILCP).⁸⁵

⁸² The NWI and DCWI serve only as large-scale guides and field-delineated wetland locations often vary from those that are mapped. The mapped wetland total includes more than 600 acres of O'Hare Airport, which has been permitted for fill under Section 404 of the CWA. The six watersheds near the project include Addison Creek, Des Plaines River (main stem), East Branch DuPage River, Salt Creek (upper, middle, and lower), West Branch DuPage River, and Willow Creek.

⁸³ Due to FAA guidelines regarding wildlife hazard separation distances, there could be a slight loss in cumulative wetland acreage near the project corridor as a result of potential development. However, there would be an overall net gain in wetland acreage in the larger Des Plaines River drainage basin as a result of compensatory wetland mitigation.

⁸⁴ The RRA is an IDNR program that identifies large areas containing concentrated natural resources (forests, wetlands, natural areas/nature preserves, and biologically important streams) so that cooperative public-private partnerships can be formed to merge natural resource stewardship with compatible economic and recreational development.

⁸⁵ IILCP includes the following agencies: USDA National Agricultural Statistics Service, IDOA, and IDNR.

