

are more susceptible than others (e.g., grasses are generally more tolerant of salt than trees). Vegetative damage generally increases with greater salt usage, traffic speed and volume, and steeper side slopes; vegetative damage generally diminishes as the distance from the road increases (Transportation Research Board, 1991; Public Sector Consultants, Inc., 1993; Xianming et al., 2009).

## 4.3 Wetlands

This section describes wetland resources potentially affected by the build alternatives. 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, ramps, and grading for drainage/stormwater management facilities. Indirect impacts could result from changes in hydrologic regime, quality of stormwater runoff, or habitat continuity.

Per USEPA's comments on the Draft EIS, information regarding conceptual mitigation measures is included in this Final EIS (see Page 5-25 for a full description of USEPA's comments and IDOT's response. USEPA's comment letter can be found in Appendix D beginning on Page D\_5-1). Compensatory wetland mitigation will be provided for wetland impacts that cannot be avoided or minimized. At the current stage of project development, the preferred mitigation method is to purchase wetland mitigation credits from a USACE/IDNR approved wetland mitigation bank located within the Des Plaines River Watershed. Additional mitigation preferences and strategies are discussed in subsection 4.13.5. Wetland mitigation options will be coordinated with the appropriate regulatory agencies and will be discussed further during Tier Two studies to achieve agreement on the final course of action.

The impacts herein are based on approximate wetland boundaries that were identified through review of available GIS wetland data sources, including the NWI and the DCWI, supplemented by preliminary field reconnaissance.<sup>22</sup> Potential direct wetland impacts were determined by calculating the approximate wetland acreage located within the footprint of each proposed alternative using GIS aerial photographic interpretation. Wetlands not directly affected by the footprint are not counted as affected. In addition to the potential loss of wetland acreage associated with the alternatives, wetland functions and values may also be affected.

Based upon coordination, the USACE, USFWS, and USEPA concurred with the Tier One wetland methodology, wherein the level of detail and field verification was sufficient to support reasonably representative levels of impact for this type of study. The agencies concurred that only direct wetland impacts need to be calculated as part of the Tier One study. Indirect wetland impacts will be assessed individually during Tier Two environmental studies.

A comprehensive wetland delineation and assessment will be completed in Tier Two environmental studies for the preferred alternative to determine exact wetland sizes and locations with respect to the proposed limits of the project improvements. The assessment

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<sup>22</sup> Wetland data from the OMP was used for parts of the study area that overlapped with the OMP project limits.

would provide a qualitative analysis of wetland functions and values, including floristic composition and wildlife habitat presence.

### 4.3.1 Affected Wetlands

#### 4.3.1.1 Alternatives 203 and 402

Based on preliminary field reconnaissance, up to 79 wetlands would be affected by the build alternatives (see Exhibit 4-6; Appendix H, Exhibit H-1; and Table 4-15). The alternatives have similar alignments that result in impacts at 75 mutual wetland sites. Overall, Alternative 203 would directly affect 38.7 acres of wetland at 79 sites, and Alternative 402 would directly affect 36.1 acres of wetland at 75 wetland sites, or 2.6 acres less than Alternative 203. Relatively small impacts to isolated emergent wetlands (average impact approximately 0.2 acre), isolated wet old fields (average impact about 0.1 acre), and wetland bottom stormwater management facilities (average impact about 0.7 acre) make up most of the individual wetland sites affected by both alternatives.

From an acreage perspective, USACE jurisdictional emergent wetlands have the most impact (average impact roughly 1.5 acres). Under both alternatives, most of the wetland impacts occur in the Salt Creek Watershed followed by the Willow Creek Watershed. See Tables 4-15 and 4-16, and Appendix H for a summary of the wetland impacts.

TABLE 4-15  
Wetland Summary by Build Alternative and Watershed

Watershed <sup>b</sup>	Impact (acre) <sup>a</sup>			Number of Wetlands		
	Alt. 203	Alt. 402	Difference	Alt. 203	Alt. 402	Difference
Des Plaines River	0	0	—	2	2	—
Salt Creek	22.4	22.4	—	38	38	—
West Branch DuPage River	0.8	0.8	—	8	8	—
Willow Creek	15.5	12.9	2.6	31	27	4
<b>Total<sup>c</sup></b>	<b>38.7</b>	<b>36.1</b>	<b>2.6</b>	<b>79</b>	<b>75</b>	<b>4</b>

<sup>a</sup> Impact acreage is rounded; therefore, impact acreages may vary slightly between tables. 0 acre represents impacts of less than 0.05 acre.

<sup>b</sup> Of the watersheds located proximate to proposed EO-WB improvements, direct wetland impacts associated with Alternatives 203 and 402 are not anticipated in the Addison Creek and Weller Creek Watersheds.

<sup>c</sup> Total acreage represents impacts to wetlands, wetland bottom stormwater management facilities, and wetland mitigation sites.

Federally jurisdictional waters of the U.S. (including wetlands) are regulated by the USACE under Section 404 of the CWA. Federally jurisdictional wetlands include wetlands that are adjacent to navigable waters of the U.S. and/or have a direct hydrologic/ecologic connection (i.e., significant nexus) to navigable waters of the U.S. The U.S. Supreme Court Rapanos Decision<sup>23</sup> established that not all wetland areas are federally regulated by the USACE under the CWA. Consequently a Jurisdictional Determination is required for each wetland to determine its jurisdictional status for permitting purposes. Wetlands found to be isolated

<sup>23</sup> Rapanos et ux., et al. v. United States, 2006.

because they are not adjacent to navigable waters of the U.S. or do not have a direct hydrologic/ecologic connection to navigable waters of the U.S. are not regulated by the USACE.

TABLE 4-16  
Summary of Wetland Community Type Impacts and Regulatory Status by Build Alternative

Wetland Type <sup>a</sup>	Alternative 203			Alternative 402		
	USACE Jurisdictional	Isolated	Exempt <sup>b</sup>	USACE Jurisdictional	Isolated	Exempt <sup>b</sup>
Emergent wetland	12.1 (8)	3.9 (16)	— (0)	11.0 (7)	3.9 (16)	— (0)
Scrub-shrub wetland	0.1 (1)	2.2 (6)	— (0)	0.1 (1)	2.2 (6)	— (0)
Wet old field	4.4 (2)	1.4 (10)	— (0)	4.4 (2)	1.4 (9)	— (0)
Wooded wetland	0 (1)	2.2 (5)	— (0)	0 (1)	2.2 (5)	— (0)
Vegetated drainage ditch/channel	2.4 (8)	0.1 (1)	— (0)	1.4 (7)	0.1 (1)	— (0)
OMP wetlands	0 (2)	0.4 (1)	— (0)	0 (2)	— (0)	— (0)
Wetland mitigation sites	0.3 (4)	N/A	— (0)	0.3 (4)	N/A	— (0)
Wetland bottom stormwater management facility	N/A	N/A	9.1 (14)	N/A	N/A	9.1 (14)
<b>Total</b>	<b>19.3 (26)</b>	<b>10.2 (39)</b>	<b>9.1 (14)</b>	<b>17.2 (24)</b>	<b>9.8 (37)</b>	<b>9.1 (14)</b>

Note: Approximate acreage of wetland impact is provided, with total number of affected wetlands in parentheses. Acreage is based on preliminary field reconnaissance and available GIS wetland resource data. Approximate wetland impact acreage is rounded; therefore, impact acreages may vary slightly between tables. 0 acre represents impacts of less than 0.05 acre.

Jurisdictional status is based on preliminary assessment and is subject to change pending more detailed studies to be completed as part of the Tier Two environmental studies and following a USACE jurisdictional determination. Mitigation sites were assumed to be USACE jurisdictional.

<sup>a</sup> Some wetlands include more than one community type or contained areas of open water. The dominant community type is listed.

<sup>b</sup> Exempt areas include man-made wetland bottom stormwater management facilities where wetland impacts may not be regulated by the USACE and/or IDNR. Subject to regulatory concurrence.

All wetlands, including isolated wetlands, are regulated by the IDNR under the Interagency Wetland Policy Act (IWPA).<sup>24</sup> Within the study area, several wetland bottom stormwater management facilities would be affected by the build alternatives. The manmade wetland bottom basins should be exempt from Section 404 of the CWA and the IWPA requirements, subject to USACE and IDNR approval. See subsection 4.13, Mitigation Concepts and Commitments and subsection 4.14, Permits/Certifications.

Based on a preliminary assessment of adjacency and/or potential significant nexus to navigable waters of the U.S., 10.2 acres of isolated wetland and 19.3 acres of USACE jurisdictional wetlands would be affected by the Alternative 203 alignment. Alternative 402 would have similar impacts, resulting in 9.8 acres of isolated wetland impact and 17.2 acres of USACE jurisdictional wetland impact. Thus, Alternative 203 would affect 2.1 acres more USACE jurisdictional wetland than Alternative 402. Both Alternative 203 and Alternative 402 would affect 9.1 acres of wetland bottom stormwater management facilities.

<sup>24</sup> 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 August 1, 2008). Any component of the alternatives that may be local non-IDOT roads may be subject to the DuPage County Countywide Stormwater and Flood Plain Ordinance or the pending Cook County Watershed Management Ordinance.

Alternative 203 would affect roughly 2.6 acres more of regulatory wetland (2.1 acres are USACE jurisdictional wetland) than Alternative 402. The 2.6 acres of wetland impact is within the Willow Creek Watershed and attributed primarily to three sites. One site (slightly larger than one acre) is a vegetated drainage ditch that drains to Higgins Creek located on the north side of I-90 adjacent to the ISTHA's Des Plaines Oasis and the Majewski Athletic Complex (owned by MWRDGC). A second site (slightly larger than one acre) is an emergent wetland that also drains to Higgins Creek located adjacent to the south side of I-90 at the Arlington Heights Road interchange. The third site (0.4 acre of isolated wetland impact) is within OMP limits adjacent to York Road and north of Thorndale Avenue.

The largest wetland impacts (more than 2.8 acres each) associated with both build alternatives would occur at three locations: northwest of the intersection of Thorndale Avenue and York Road (5.0 acres), at Salt Creek and Thorndale Avenue (3.7 acres), and southwest of the Elgin O'Hare Expressway/Medinah Road interchange (2.8 acres). All three impacts affect wetlands that appear to be USACE jurisdictional. At 5.0 acres, the wetland impact near the intersection of Thorndale Avenue and York Road would be the largest. The wetland would be affected in its entirety. Based on preliminary field reconnaissance, the predominately emergent wetland appears to be of moderate quality, most likely because of its size and functional value: primarily wildlife habitat and flood storage. Given that the surrounding area includes commercial/industrial land uses and O'Hare Airport, wildlife that use the wetland would have to find new habitat within the developed areas or migrate outside the immediate area. Although developed portions of the adjacent O'Hare Airport are unlikely to provide desirable wildlife habitat, potential increased wildlife usage at the airport due to increased wildlife populations or movement of species may be addressed with wildlife deterrent methods. The depressional storage may be lost unless compensated nearby. The wetland is dominated by cattail (*Typha* sp.) and common reed (*Phragmites australis*), but it includes other wetland community types, such as wet old field and wooded wetland. Parts of this wetland are contiguous with Willow Creek South Tributary.

The next largest wetland impact (about 3.7 acres) would take place at Salt Creek and Thorndale Avenue. Approximately 1.6 acres of a wetland bottom stormwater management facility would also be impacted at this location. The potential wetland impacts at Salt Creek include part of a wetland mitigation site at the Wood Dale - Itasca Reservoir (0.2 acre) and part of Salt Creek Marsh Forest Preserve (owned by FPDDC) (0.4 acre). Based on preliminary field reconnaissance, the wetland adjacent to Salt Creek appears to be of moderate quality most likely due to its size, location, and functional value. The wetland is primarily wet old field dominated by reed canary grass (*Phalaris arundinacea*) with eastern cottonwood (*Populus deltoides*). Based on field reconnaissance and available wetland mapping, about two percent of the mapped wetland would be affected. The wetland extends north and south adjacent to Salt Creek beyond the alternative footprints. Thorndale Avenue transversely crosses the wetland. The proposed alternatives would widen the transportation corridor and relocate the roadway edge closer to Salt Creek Marsh Forest Preserve. Coordination with the FPDDC would take place as necessary during Tier Two environmental studies or the Section 404 permit process to minimize potential forest preserve impacts. With the implementation of stormwater quantity and quality control BMPs and the bridge at Salt Creek, impacts to the functions provided by this wetland and the overall aquatic environment/Salt Creek are anticipated to be minimal.

The third of the larger impacts is located southwest of the Elgin O’Hare Expressway and Medinah Road. The wetland is discussed in subsection 4.3.1.3.

#### 4.3.1.2 South Bypass Connection Options A and D

Based on preliminary field reconnaissance, up to four wetlands and two wetland bottom stormwater management facilities would be impacted by Options A and D (see Exhibit 4-6 and Appendix H, Exhibit H-1). Option A would impact two wetland sites, including 0.1 acre wetland bottom stormwater management facility in the Addison Creek Watershed. Option D would affect five sites in the Des Plaines River Watershed including 0.2 acre wet old field wetland, 0.1 acre emergent wetland, and 0.1 acre wetland bottom stormwater management facility. Both options would affect one isolated wetland within OMP project limits.

Relatively small impacts to isolated wetlands and wetland bottom stormwater management facilities make up the individual wetland sites affected under the two south bypass connection options. Based on preliminary field reconnaissance, there would be no impacts to USACE regulated wetlands or to wetlands that would be considered moderate or higher quality. Proposed impacts would occur in lower quality wetland areas dominated by relatively common species or those tolerant of disturbance, including reed canary grass, common reed, cattail, eastern cottonwood, red-rooted spike rush (*Eleocharis erythropoda*), squirrel-tail grass (*Hordeum jubatum*), and sandbar willow (*Salix interior*). Table 4-17 summarizes the potential wetland impacts by south bypass connection option.

TABLE 4-17  
Potential Wetland Impacts by South Bypass Connection Options A and D

Wetland ID	Wetland Type <sup>a</sup>	Jurisdictional Status <sup>b</sup>	Watershed	Impact <sup>c</sup> (ac)		Size <sup>c</sup> (ac)	% Impact <sup>c</sup>	
				Opt. A	Opt. D		Opt. A	Opt. D
WL24.3	OMP wetland	Isolated	Des Plaines River	0	0	0.4	2.7	2.7
WL28.1	Wet old field	Isolated	Des Plaines River	—	0.2	0.2	—	100
WL29.2	Wet old field	Isolated	Des Plaines River	—	0	0	—	100
WL29.5	Emergent	Isolated	Des Plaines River	—	0.1	0.1	—	100
WLB29.2	Wetland bottom stormwater management facility	Exempt	Des Plaines River	—	0.1	0.1	—	72.7
WLB34.1	Wetland bottom stormwater management facility	Exempt	Addison Creek	0.1	—	0.1	100	—
<b>Total</b>				<b>0.1</b>	<b>0.4</b>	<b>0.9</b>	<b>—</b>	<b>—</b>

<sup>a</sup> The dominant community type is listed.

<sup>b</sup> Jurisdictional status is based on preliminary assessment and is subject to change pending more detailed studies to be completed as part of the Tier Two environmental studies and following a USACE jurisdictional determination.

<sup>c</sup> Wetland acreages, impacts and percentages are approximate and rounded; “0” represents a value of less than 0.05 acre. Percentages and impact totals for each alternative were calculated before rounding. “—” represents no impact. Acreage is based on preliminary field reconnaissance and available wetland resources as discussed in Section 2, Affected Environment. Wetland boundaries may vary from those that are mapped.

#### 4.3.1.3 Impacts to Mapped Critical Wetland and Mitigation Sites

Based on preliminary field reconnaissance and available wetland resources, Alternatives 203 and 402 both could affect higher quality wetland areas, such as mapped critical wetland and wetland mitigation sites, but Options A and D would not. The DuPage County Countywide Stormwater and Flood Plain Ordinance describes critical wetlands as high quality wetlands that “play crucial roles in storing or conveying flood waters, controlling erosion, maintaining or enhancing water quality, and providing habitat for threatened or endangered species.”<sup>25</sup> Based on the DCWI, 142 acres of mapped critical wetlands are within the study area, most of which are avoided by the build alternatives.

Both Alternatives 203 and 402 would affect 2.0 acres of a mapped critical wetland located southwest of the Elgin O’Hare Expressway/Medinah Road interchange. The entire wetland is not mapped as critical. Roughly 2.8 acres (four percent) of the 67.2-acre wetland complex (including both the mapped critical wetland and adjacent wetland area) would be affected by the build alternatives. The wetland complex appears to be USACE jurisdictional and has a direct hydrologic connection to Meacham Creek, which flows through the complex. The direct impacts to the wetland complex would be partially within the Medinah Wetlands Forest Preserve and partially within a parcel proposed for acquisition by the FPDDC. Based on preliminary field reconnaissance, this is a primarily emergent wetland dominated by cattail, common reed, and reed canary grass. Impacts to the wetland are expected to be associated with lower quality edge habitat adjacent to the 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 either alternative.

Studies to be conducted as part of the Tier Two environmental studies would include detailed wetland plant inventories and habitat assessments to evaluate if there are other critical wetland resources that would be affected by the build alternatives. Under the local DuPage County Countywide Stormwater and Flood Plain Ordinance, critical wetland impacts require compensatory wetland mitigation at a 3.0:1.0 mitigation ratio.

Alternatives 203 and 402 would affect 0.3 acre of wetland mitigation at four sites adjacent to the Elgin O’Hare Expressway or Thorndale Avenue. Impacts would occur at the perimeter of the mitigation areas. Based on preliminary field reconnaissance, the mitigation sites consist primarily of emergent wetland dominated by cattail or common reed, or by open water. From a regulatory standpoint, impacts to mitigation sites may require higher compensation ratios. Provision of compensatory wetland mitigation for the selected build alternative can be expected to replace wetland functions and values lost through filling activities.

#### 4.3.2 Wetland Functions and Values

During the preliminary field reconnaissance, dominant wetland plant species were identified, general notes pertaining to wetland functions and values were recorded, and the general quality of the identified wetlands was established. Detailed plant inventories were

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<sup>25</sup> Several criteria are used to determine if a wetland is critical. Wetlands, in addition to those mapped as critical on the DCWI, may be considered critical following site investigation and data analysis.

not completed, and a Floristic Quality Index and native mean C-value were not calculated (Swink and Wilhelm, 1994).

The largest wetland community type impacts associated with Alternatives 203 and 402 would be to emergent wetlands, wetland bottom stormwater management facilities, and wet old fields. Options A and D would affect wet old fields, emergent wetland, an OMP wetland, and wetland bottom stormwater management facilities. Emergent wetlands generally are characterized by the presence of standing water throughout the growing season. They consist of vegetation that prefers standing water for prolonged periods, such as cattails. Wet old fields generally are characterized by moist to saturated soils with standing water for only brief to moderate periods of the growing season. In general, the dominant plant species in wet old fields in the study area was reed canary grass.

Past human disturbances and runoff from the urban environment appear to have adversely affected most of the wetlands near the proposed improvements. In general, most of the field identified wetland sites are dominated by invasive plant species and exhibit low diversity and richness of native plant species. The principal functions performed by most of the wetland sites are stormwater storage, conveyance, and water quality benefits. The wetlands may provide habitat for common and adaptable wildlife. In general, wetlands that would be affected by the alternatives provide limited functional value on an individual basis, but when combined, the wetlands provide overall water quality benefits.

Overall, wetland functions, such as stormwater storage and pollution control, that would be affected as a result of the alternatives 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 BMPs. Wetland mitigation credit will not be generated within detention facilities; however, detention facilities and other BMPs will provide stormwater storage and pollution control. Wetland mitigation will be coordinated with the appropriate regulatory agencies so that impacts (including lost functions and values) are adequately compensated in accordance with applicable federal and state regulations. The preferred method is to purchase wetland credits in a USACE/IDNR-approved mitigation bank. In addition to wetland mitigation, to minimize potential environmental impacts at (and downstream from) the project site, stormwater detention facilities would be provided to compensate for increased impervious area associated with the alternatives. 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. BMPs that control the volume and treat stormwater runoff would be considered in Tier Two environmental studies to reduce pollutant loads to wetlands and other receiving waters, while maintaining the hydrology of the watershed, to the extent possible.

Development within the study area restricts sensitive wildlife species to protected lands, which are primarily located outside and beyond the proposed build alternatives. 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 affected as a result of the alternatives are located primarily in developed areas adjacent to transportation corridors that provide limited wildlife use potential. Most wetland impacts would affect relatively small percentages of larger wetland complexes (mainly edge takes adjacent to roadways) or small isolated wetlands; thus, wildlife habitat impacts associated with the proposed wetland

impacts would be minimal. See subsection 2.6.2, Wildlife, and subsection 4.5, Biological Resources.

As part of the planning process for the proposed transportation improvements, direct impacts to wetlands in special lands (e.g., forest preserves) and ecologically sensitive habitats (including natural areas, nature preserves, known threatened and endangered species sites, etc.) have been avoided or minimized. Wetland impacts will be reviewed in accordance with state and federal regulatory procedures to ensure that they are avoided, minimized, or compensated appropriately, and that there is no overall net loss of the state's wetland acres or functional value because of the project. Appropriate wetland mitigation will be provided, and water quality and quantity BMPs will be implemented as necessary to meet regulatory requirements and to protect the downstream aquatic environment from potential construction, operation, and maintenance impacts associated with the proposed transportation improvements. Therefore, the wetland displacement associated with the alternatives is not expected to have a net negative effect on the larger Des Plaines River Watershed or the region. See subsections 4.2 and 4.12 for discussions on water quality BMPs and mitigation measures, respectively.

### 4.3.3 Threatened and Endangered Species within Wetland Areas

Wetlands supporting federal- or state-listed threatened or endangered species are considered high quality aquatic resources by the USACE and critical wetlands by DuPage County. The higher quality wetland areas typically are unsuitable for fill activities or require higher wetland compensation ratios at the federal, state, or local levels.

Based on information from the IDNR and the Illinois Natural Heritage Database (dated December 12, 2008) and correspondence from the USFWS (dated January 29, 2009), no known threatened or endangered species sites would be directly affected by the proposed build alternatives (see Appendix D). However, USFWS has stated that a moderate to high quality wetland habitat within the study area could support a federal-threatened and state-endangered plant species, the eastern prairie fringed orchid (*Platanthera leucophaea*).

Based on preliminary field reconnaissance, 13 of the identified wetland areas<sup>26</sup> that would be affected by the alternatives could be classified as moderate to high quality based on vegetation or functional values, when compared to the low quality wetlands along the project corridor. Four of the wetland areas are mitigation sites. All but one of the 13 wetland areas are located adjacent to the Elgin O'Hare Expressway or Thorndale Avenue. The remaining wetland is located along the south side of I-90 near Arlington Heights Road (see Appendix H, Exhibit H-1). Quality determinations were not based on detailed plant lists and are subject to change. Additional studies, including a qualitative analysis of wetland functions and values (e.g., floristic composition, wildlife habitat presence, etc.) and the required consultation with IDNR or USFWS would be conducted as part of the Tier Two environmental studies.

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<sup>26</sup> This total includes one wetland bottom stormwater management facility that appears to have been planted with native vegetation, based on preliminary field reconnaissance. Mitigation areas were assumed to be high quality.