

There are 77 private water supply wells within 200 feet of the project corridor and six community water supply wells within 400 feet of the project corridor. Additionally, 24 wells are identified to be within the project corridor that are likely remnant records of wells that no longer exist because they are mapped as being within existing pavement areas of the Elgin-O'Hare Expressway or other past improvements. Wells that are identified as being functional within the construction limits of the Build Alternative would be abandoned in accordance with state regulations.

The project would not create any new potential "routes" for groundwater pollution or any new potential "sources" of groundwater pollution as defined in the Illinois Environmental Protection Act (415 ILCS 5/3, et seq.). Accordingly, the project is not subject to compliance with the minimum setback requirements for CWS wells or other potable water supply wells as set forth in 415 ILCS 5/14, et seq. This project does not pose a potential primary or secondary source, or a potential route, for pollution as defined in the Illinois Environmental Protection Act.

No measurable change in available groundwater supply is expected due to the Build Alternative. The additional impervious area associated with the project would represent a small reduction in potential recharge area that would be offset by construction of the stormwater management facilities and other stormwater best management practices.

3.11.3 Measures to Minimize Harm and Mitigation

To minimize potential changes in groundwater quality, a comprehensive soil erosion and sediment control plan will be implemented by IDOT and/or the Illinois Tollway during construction, which would minimize degradation of surface waters. Additionally, post-construction best management practices, such as bioswales, infiltration basins, native vegetation, filter strips, and stormwater management facilities, would be installed where practical and feasible to collect, detain, and filter stormwater runoff to minimize potential surface and groundwater degradation (see subsection 3.10). The post-construction best management practices would be installed with all stormwater management facilities and surface drainageways. The best management practices would focus on capturing and retaining potential contaminants to prevent them from exiting the project corridor as surface or groundwater flow. In particular, at the three locations where shallow aquifer wells are used for potable water, the types of best management practices to be implemented will be carefully considered to minimize infiltration while maximizing the filtering of runoff (see Appendix E). The potential for groundwater infiltration is limited due to the clayey soils; therefore, it is expected that the potential for groundwater migration of contaminants will be minimal.

3.12 Floodplains

3.12.1 Affected Environment

Floodplains within the project corridor typically consist of open areas but may also contain roadways or developments. Floodplains are extensions of waterways where water rises and expands into additional storage areas. Within vegetated areas, floodplains provide an opportunity for infiltration and water quality treatment through filtering of nutrients, sediment, and impurities.

Based on Illinois Administrative Code, Title 17 (Conservation), floodplain and floodway are defined as follows:

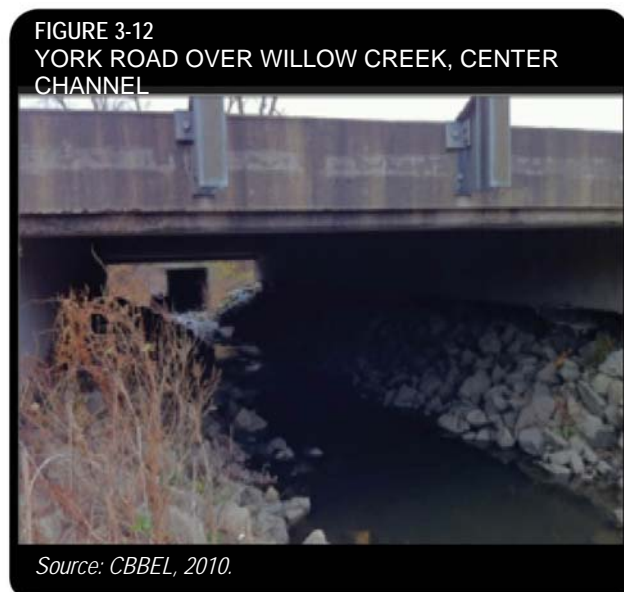
- *Floodplain or Regulatory Floodplain* is defined as that land adjacent to a body of water with ground surface elevation at and below the 100-year frequency flood elevation.
- *Floodway or Regulatory Floodway* is defined as the channel and that portion of the floodplain adjacent to a stream or watercourse that is needed to store and convey the anticipated future 100-year frequency flood discharge with no more than a 0.1-foot increase in flood stage, and no more than a 0.1 percent increase in velocities due to the loss of flood conveyance and storage.

3.12.1.1 Floodplains and Floodways

According to the National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRMs) produced by the Federal Emergency Management Agency (FEMA), the proposed project corridor includes eight base floodplains and six regulatory floodways (see Exhibit 3-16 and Table 3-40). The project corridor spans DuPage County and Cook County and lies in the governing drainage districts of DuPage County Stormwater Management and the MWRDGC.

Some flood-prone areas also exist in the Franklin Park/I-294 industrial area, the southwest quadrant of the intersection of Roselle Road and existing Elgin-O'Hare Expressway, IL 64 (North Avenue) at I-290 and I-294, east of Plum Grove Road south of the existing Elgin-O'Hare Expressway, Thorndale Avenue over the Devon Avenue Tributary in Itasca, IL 83 (Busse Road) and Bryn Mawr Avenue south of Thorndale Avenue, and Irving Park Road west of Seymour Avenue on the south side of O'Hare Airport. As part of the Location Drainage Study, IDOT has engaged in separate drainage investigations of these areas to identify and propose possible solutions to chronic flooding issues.

In the vicinity of the proposed Elgin-O'Hare Expressway and West Bypass system interchange, York Road is supported by a bridge over the Willow Creek and Willow Creek South Tributary floodplains (see Figure 3-12). The bridge extends 1,200 feet northward from a location 2,400 feet north of the intersection of York Road and Thorndale Avenue.



The following three irregular trapezoidal structures are under this bridge:

- 30 feet (top width) by 6 feet (height) by 6 feet (bottom width)
- 40 feet (top width) by 8.4 feet (height) by 6 feet (bottom width)
- 31 feet (top width) by 5.2 feet (height) by 10 feet (bottom width)

The effective waterway opening of the bridge trapezoidal structures would not be impacted by the proposed EO-WB project improvements.

Within the project corridor along Higgins Creek at the northwest corner of OMP, the MWRDGC maintains the Touhy Avenue Reservoir. This reservoir consists of two deep ponds (or “cells”) working in tandem to help control flood flows along Higgins Creek through the use of spillways and a pump station that pumps water detained in the cells back to Higgins Creek after flood waters recede. This reservoir releases runoff at a monitored rate toward O’Hare Airport. The storage capacity of this reservoir would not be impacted as a result of the EO-WB project improvements.

TABLE 3-40
Designated 100-Year Floodplains within the Project Corridor

Water Resource ^a	County	Floodplain Area in Project Corridor (acres) ^b	Floodway Identified
Addison Creek	Cook	2.25	Yes
Bensenville Drainage Ditch	DuPage	4.03	Yes
Higgins Creek	Cook	13.41	Yes
Higgins Creek Tributary A	Cook	5.87	Yes
Meacham Creek	DuPage	9.12	No
Salt Creek	DuPage	23.35	Yes
Willow Creek	DuPage	1.98	No
Willow Creek South/North Tributaries	DuPage	16.30	Yes

^a All streams and associated 100-year floodplains lie within the Des Plaines River drainage basin (HUC 07120004). This table lists FEMA-named streams and tributaries with mapped floodplain in the project corridor.
^b Area is based on GIS calculation of digitized published FEMA floodplain data.

The floodway consists of the stream channel and adjacent areas that carry flood flows. Six regulatory floodways (involving multiple waterway crossings) are included within the project corridor (see Table 3-40) – Addison Creek, Bensenville Drainage Ditch, Higgins Creek, Higgins Creek Tributary A, Salt Creek, and Willow Creek South Tributary. The extent of floodway limits were identified from FIRM maps published by FEMA. New bridges or culverts to be constructed in a designated floodway would not result in an increase of upstream flood stages more than 0.1 foot over the existing conditions for all flood events up to and including the 100-year frequency event.

3.12.1.2 Natural and Beneficial Floodplain Values

Beneficial values of floodplains include, but are not limited to, the moderation of floods, water quality, groundwater recharge, fish and wildlife habitat, open space, and recreational value. All of the floodplains for this project are located in urban areas. Although some floodplain areas are confined within the banks of the creeks, other floodplain areas (that is, Willow Creek South Tributary and Bensenville Drainage Ditch) contain homes or other structures that experience repeated flood damage.

3.12.1.3 Flood Buyout Properties

Although there are areas of chronic flooding within and surrounding the project corridor, there are currently no properties, communities, local agencies, or counties participating in a FEMA Hazard Mitigation Grant Program (HMGP) or flood-prone property buyout program.

3.12.2 Environmental Consequences

The floodplain encroachment evaluation was conducted in accordance with EO 11988 “Floodplain Management,” the “Assessment and Documentation of Flood Plain Encroachment” as contained in the *BDE Manual* (IDOT, 2011), “Floodplain Encroachments” in the *Illinois Drainage Manual* (IDOT, 2004), Illinois Administrative Code 3708 “Floodway Construction in Northeastern Illinois,” and Illinois Administrative Code 3700 “Construction in Floodways of Rivers, Lakes, and Streams.” Guidance from the DuPage County Stormwater Management Division, MWRDGC, and the various local municipalities was applied in determining floodplain impacts and compensatory storage requirements because the local or county ordinances are more restrictive than IDOT and Illinois Tollway requirements.

3.12.2.1 Floodplains and Floodways

Potential floodplain encroachments were first identified by overlaying proposed roadway locations onto FIRMs published by FEMA. Normal, 10-year, and 100-year water surface elevations, which were developed in Existing Conditions Hydraulic Reports, were used in further analysis to calculate the amount of roadway fill in the floodplain. The floodplain fill volumes were then separated by county, Cook or DuPage, to quantify compensatory storage volumes required by each respective local stormwater ordinance. Within Cook County, the Addison Creek crossing is located in the City of Northlake, and the Higgins Creek crossings are located in the City of Des Plaines. The City of Northlake, City of Des Plaines, and DuPage County require a compensatory storage volume ratio of 1.5:1. Therefore, all floodplain fill volumes within the project corridor must be compensated for at a ratio of 1.5:1 or greater, if feasible. Floodplain encroachments and mitigation measures are discussed below. Table 3-41 briefly describes and quantifies the proposed fill within the FEMA-mapped floodplains in the project corridor. Consequently, Table 3-41 also defines the required storage volume necessary to compensate for fill placed in the floodplain (also see subsection 3.12.3). Potential floodplain compensatory storage sites are depicted in Appendix E.

TABLE 3-41
Proposed 100-Year Floodplain Impact Summary

Waterway	Location and Description	Normal to 10 Years		10 Years to 100 Years	
		Fill Volume (acre-feet)	Required Storage (acre-feet)	Fill Volume (acre-feet)	Required Storage (acre-feet)
Addison Creek	At I-294 and Northwest Avenue. Two-cell 10-foot (span) x 9.5-foot (rise) concrete box culvert at I-294 to be extended.	0.60	0.90	0.66	0.99

Waterway	Location and Description	Normal to 10 Years		10 Years to 100 Years	
		Fill Volume (acre-feet)	Required Storage (acre-feet)	Fill Volume (acre-feet)	Required Storage (acre-feet)
Bensenville Drainage Ditch	At West Bypass corridor. Install a new culvert or extend existing railroad culvert to the east. ^a	0.00	0.00	0.37	0.56
Higgins Creek	At West Bypass corridor over Touhy Avenue Reservoir. ^b	No impact	No impact	No impact	No impact
Higgins Creek	At Touhy Avenue. Two-cell, 13.5-foot (span) x 8-foot (rise) concrete box culvert to remain.	No impact	No impact	No impact	No impact
Higgins Creek	At I-90. Two 2-span, concrete beam bridges with center pier to be widened in-kind; construct two new bridges over the creek to the north and south of I-90 for ramps (similar construction to existing I-90 bridges).	0.59	0.89	2.13	3.20
Higgins Creek	At Elmhurst Road. Single 25-foot concrete slab bridge to be widened in-kind; Proposed westbound I-90 ramp at Elmhurst Road.	0.42	0.63	1.78	2.67
Higgins Creek Tributary A	At I-90. Two-cell, 9-foot (span) x 5.75-foot (rise) concrete box culvert to be modified as necessary.	2.24	3.36	5.66	8.49
Meacham Creek	At Elgin O'Hare corridor. 10-foot (span) x 8-foot (rise) concrete box culvert to be modified as necessary.	0.05	0.08	0.16	0.24
Salt Creek	At Elgin O'Hare corridor. Existing two-span, prestressed concrete beam bridge with center pier in creek to remain for frontage road. Construct two new bridges for mainline (proposed mainline bridges will not have piers in creek).	6.33	9.50	11.65	17.48
Willow Creek	At West Bypass corridor. Install new culverts and/or extend existing drainage structures (3) from the railroad to beneath proposed West Bypass embankment.	3.30	4.95	4.70	7.05
Willow Creek South/North Tributaries	At York Road. Three trapezoidal channels under a bridge at York Road to remain.	No impact	No impact	No impact	No impact

TABLE 3-41
Proposed 100-Year Floodplain Impact Summary

Waterway	Location and Description	Normal to 10 Years		10 Years to 100 Years	
		Fill Volume (acre-feet)	Required Storage (acre-feet)	Fill Volume (acre-feet)	Required Storage (acre-feet)
Willow Creek South Tributary	At Thorndale Avenue. Two-cell, 10-foot (span) x 4-foot (rise) concrete box culvert to be removed, replaced and realigned. Existing channel between Thorndale Avenue and York Road would be realigned.	8.80	13.20	8.70	13.05

^a Work proposed below the 10-year floodplain elevation would not result in floodplain fill.

^b In addition, an embankment for the West Bypass/ I-90 interchange will partially fill Cell 2 of the Touhy Avenue Reservoir. This would require 171 acre-feet of floodplain fill in the reservoir, which would be compensated by construction of a new cell just south of Cell 1.

Table 3-42 summarizes floodplain encroachment type (e.g., longitudinal or transverse) and the assessment category of each floodplain crossing. There are no significant floodplain encroachments proposed under the Build Alternative (i.e., Category 6 significant floodplain encroachments are defined in the IDOT Drainage Manual).

Transverse encroachments occur when the roadway is roughly perpendicular to the floodplain (similar to the proposed bridge crossing of the Elgin O'Hare corridor over Salt Creek). The proposed improvements would result in 12 transverse floodplain encroachments and eight transverse floodway encroachments. The potential transverse encroachments are generally associated with proposed pavement widening that increases embankment fill in the floodplain and causes culvert extension and bridge widening. Some potential transverse encroachments are due to the proposed construction of new roadway. For instance, the proposed West Bypass corridor would involve a transverse encroachment over the Bensenville Drainage Ditch and Willow Creek where there is no encroachment in the existing condition.

TABLE 3-42
Proposed 100-Year Floodplain and Regulatory Floodway Encroachment Summary

Waterway	Crossing Location	Floodplain Encroachment	Floodway Encroachment	Assessment Category ^a
Addison Creek	At I-294 and Northwest Avenue	Transverse	Transverse	3
Bensenville Drainage Ditch	At West Bypass corridor	Transverse	Transverse	3,4,5
Higgins Creek	At Touhy Avenue	Transverse	Transverse	2,3
Higgins Creek	At Touhy Avenue Reservoir	Transverse/ Longitudinal	No encroachment	2,3
Higgins Creek	At I-90	Transverse/ Longitudinal	Transverse	3,5

TABLE 3-42
Proposed 100-Year Floodplain and Regulatory Floodway Encroachment Summary

Waterway	Crossing Location	Floodplain Encroachment	Floodway Encroachment	Assessment Category ^a
Higgins Creek	At Elmhurst Road	Transverse/ Longitudinal	Transverse/ Longitudinal	3
Higgins Creek Tributary A	At I-90	Transverse/ Longitudinal	Transverse/ Longitudinal	3
Meacham Creek	At Elgin O'Hare corridor	Transverse	No encroachment	3
Salt Creek	At Elgin O'Hare corridor	Transverse	Transverse	3,5
Willow Creek	At West Bypass corridor	Transverse	No encroachment	3,4,5
Willow Creek South/ North Tributaries	At York Road	Transverse	No encroachment	2
Willow Creek South Tributary	At Elgin O'Hare corridor	Transverse	Transverse	5

^a Assessment categories are from IDOT's *BDE Manual* (2011): Chapter 26, Section 26-7, Floodplain Encroachments; and IDOT's *Illinois Drainage Manual* (2004): Chapter 3 Floodplain Encroachments, Section 3-005 Categories.

Assessment categories range from 1 to 6. Categories relevant to the proposed EO-WB project improvements are described below:

- Category 2 represents projects that would not replace or modify any drainage structures.
- Category 3 represents projects involving modification to existing drainage structures.
- Category 4 represents projects involving replacement of existing drainage structures on existing alignment.
- Category 5 represents projects on new alignment.

Longitudinal encroachments occur where the roadway runs parallel to the floodplain. The proposed improvements would result in four longitudinal floodplain and two longitudinal floodway encroachments. One longitudinal encroachment is located at I-90 at Higgins Creek Tributary A; it would be the result of both roadway widening and the creation of a ramp to provide access from eastbound I-90 to southbound Elmhurst Road. Upstream of the crossing (south side of I-90), Higgins Creek Tributary A runs parallel to I-90. The addition of pavement and embankment slope causes a longitudinal encroachment on the Higgins Creek Tributary A floodplain and floodway.

Downstream of the confluence of Higgins Creek Tributary A and Higgins Creek, and immediately west of Elmhurst Road, is another longitudinal floodplain and floodway encroachment. A diverging diamond-style interchange is proposed at this location. The proposed ramp directing traffic from southbound Elmhurst Road to westbound I-90 would encroach longitudinally on the Higgins Creek floodplain and floodway. It is estimated that the improvement at this location may introduce 2.66 acre-feet of fill between the normal flow elevation and 10-year flood elevation, and 7.44 acre-feet of fill between the 10- and 100-year flood elevations.

A third longitudinal encroachment of the Higgins Creek floodplain is located immediately upstream of its crossing under I-90 (north side of I-90), east of Elmhurst Road. Ramps connecting the West Bypass to I-90 increase the roadway width and impact the Higgins Creek floodplain at this location. Only transverse encroachments impact the Higgins Creek floodway at this location.

The fourth longitudinal encroachment of the Higgins Creek floodplain is located at the Touhy Avenue Reservoir. West Bypass ramps over the reservoir will require an embankment within a portion of Cell 2 (see subsection 3.12.3). A floodway is not associated with the reservoir cell.

All structures crossing floodplain areas will be sized to allow a minimum of three feet between the roadway edge of pavement and the 50-year headwater elevation. Bridges would be sized to have a minimum of two feet of clearance between the low-beam elevation and 50-year natural water elevation. Additionally, the 500-year flood stage will not overtop the roadway edge of pavement.

Regulatory floodway encroachments are anticipated at eight waterway crossings in the project corridor (some waterways have more than one crossing) (see Table 3-42). Proposed structures would comply with the 17 Illinois Administrative Code - Part 3708 rules for Bridge and Culvert Reconstruction or Modification, which may involve determining the feasibility of reducing the created head to 0.1 foot over the natural elevation for floods up to and including the 100-year event, if the existing structure is a source of flood damage. If the structure is not a source of flood damage, the proposed structures would not increase the flood profile by more than 0.1 foot above existing conditions up to and including the 100-year storm event. A permit for floodway construction in Northeastern Illinois would be secured from IDNR-OWR prior to any work within the floodway or locations with one square mile or greater of tributary area without a defined floodway; Table 3-43 summarizes the floodway impacts.

TABLE 3-43
Proposed 100-Year Floodway Impact Summary

Waterway	Location and Description	Normal to 10 Years		10 Years to 100 Years	
		Fill Volume (acre-feet)	Required Storage (acre-feet)	Fill Volume (acre-feet)	Required Storage (acre-feet)
Addison Creek	At I-294 and Northwest Avenue. Two-cell 10-foot (span) x 9.5-foot (rise) concrete box culvert at I-294 to be modified as necessary.	0.11	0.11	0.07	0.07
Bensenville Drainage Ditch	At West Bypass corridor. Install a new culvert or extend existing railroad culvert to the east.	0.00	0.00	0.37	0.37
Higgins Creek	At Touhy Avenue. Two-cell, 13.5-foot (span) x 8-foot (rise) concrete box culvert to remain.	No impact	No impact	No impact	No impact

**TABLE 3-43
Proposed 100-Year Floodway Impact Summary**

Waterway	Location and Description	Normal to 10 Years		10 Years to 100 Years	
		Fill Volume (acre-feet)	Required Storage (acre-feet)	Fill Volume (acre-feet)	Required Storage (acre-feet)
Higgins Creek	At I-90. Two 2-span, concrete beam bridges with center pier to be widened in-kind; construct two new bridges over the creek to the north and south of I-90 for ramps (similar construction to existing I-90 bridges).	0.01	0.01	0.01	0.01
Higgins Creek	At Elmhurst Road. Single 25-foot concrete slab bridge to be widened in-kind; Proposed westbound I-90 ramp at Elmhurst Road.	0.30	0.30	0.50	0.50
Higgins Creek Tributary A	At I-90. Two-cell, 9-foot (span) x 5.75-foot (rise) concrete box culvert to be replaced with a two-cell, 12-foot (span) x 9-foot (rise) concrete box culvert.	0.98	0.98	5.23	5.23
Salt Creek	At Elgin O'Hare corridor. Two-span, prestressed concrete beam bridge with center pier in creek to remain for frontage road. Construct two new bridges for mainline (proposed mainline bridges will not have piers in creek).	1.94	1.94	0.80	0.80
Willow Creek South Tributary	At Thorndale Avenue. Three-cell, 10-foot (span) x 4-foot (rise) concrete box culvert to be removed, replaced and realigned. Existing channel between Thorndale Avenue and York Road would be realigned.	8.80	8.80	8.70	8.70

Note: The Build Alternative would result in eight transverse and two longitudinal floodway encroachments (see Table 3-42).

Willow Creek South Tributary would be slightly shifted as part of the Build Alternative. The existing creek and its associated floodway and floodplain would be shifted west of the existing location along York Road. The new creek alignment would better accommodate proposed detention and compensatory storage locations northwest of the proposed interchange of the Elgin O'Hare and West Bypass corridors. Due to the proximity of the proposed interchange ramps to the adjacent runways at O'Hare Airport, the elevation of the ramps would be kept to a minimum. To accommodate the ramp designs, a portion of the realigned creek would be enclosed in a box culvert under the interchange ramps. As necessary, flow would be maintained during construction and realignment; erosion and sediment controls would be used to minimize downstream impacts.

3.12.2.2 Coordination

Throughout Tier Two, the Drainage Working Group (DWG), made up of consultant team members, IDOT Hydraulics staff members, and Illinois Tollway representatives, will continue to complete extensive coordination with local municipalities, the FAA, DuPage County Stormwater Management, and MWRDGC. This coordination occurs as an effort to gain more knowledge of specific drainage issues occurring within the local communities to refine the proposed drainage designs.

Specifically, in the Village of Franklin Park, a drainage investigation was commissioned to propose solutions to a chronic flooding problem in the roughly 430-acre Franklin Park I-294 Industrial Area. A lack of detention storage, the poor condition of existing storm sewers, and a high tailwater condition at the outlet to Silver Creek contribute to the recurring flooding of this area. Recommendations for proposed solutions to alleviate these drainage deficiencies are included in the draft drainage investigation report, which is under review by IDOT and the Illinois Tollway. Upon concurrence by IDOT and the Illinois Tollway, the drainage investigation report will be provided to the Village of Franklin Park.

Similarly, drainage investigations were commissioned in the City of Northlake and City of Elmhurst to propose solutions to a chronic flooding problem at the North Avenue underpasses at I-294 and I-290. A lack of detention storage and limited-capacity storm sewers contribute to recurring flooding of the North Avenue low spots and surrounding area. Recommendations for proposed solutions to alleviate some of these deficiencies are provided in a hydraulic report, *“North Avenue at I-290/I-294 Drainage Investigation”* (CBBEL, 2011).

3.12.3 Measures to Minimize Harm and Mitigation

It is expected that all encroachment assessment categories (see Table 3-42) will be avoided or mitigated. In subsequent phases of design, notices published in the news media would indicate that such floodplain encroachments are being considered. All potential floodplain encroachments will also be identified during the presentation hearings or meetings.

The proposed system interchange where the Elgin-O’Hare Expressway meets the West Bypass impacts a portion of the Willow Creek South Tributary floodplain. Currently, the Willow Creek South Tributary flows alongside and parallel to York Road. The existing channel would be relocated to the west to accommodate York Road widening. The creek relocation would tie back into the existing channel approximately 500 feet south of Supreme Drive, and the three trapezoidal crossings under York Road would be maintained.

At Higgins Creek in the northwest quadrant of the intersection of Elmhurst Road and I-90, a potential exists for longitudinal floodplain encroachment from a proposed ramp. Floodplain impacts will be minimized in this area with the use of retaining walls. Additionally, along Higgins Creek, the proposed West Bypass North Connection interchange to I-90 would impact the Touhy Avenue Reservoir. Ramps serving I-90 and the West Bypass (Ramps X1, X2, X5, and X8) are proposed to sit on an embankment that would be constructed in Cell 2 of the reservoir, reducing the overall watershed flood storage volume and impacting the function of the reservoir during the construction phase. Through coordination, MWRDGC has requested that any flood storage that is lost due to the embankment be compensated at a 1:1 ratio, and a plan of action to accommodate flood storage during the construction phase must be crafted. MWRDGC has advised that full capacity of both cells is required during the entire

construction phase. It is anticipated that a new 171 acre-feet compensatory storage cell will be constructed prior to the construction of the Touhy Avenue Reservoir embankment to maintain function of the reservoir. Alternative techniques for construction or structural support will be explored to effectively maintain upstream and downstream flood stages. Hydraulic modeling is required to factor in cofferdam installation, dewatering, and compensatory storage volume for each stage of the reservoir construction, and to demonstrate that upstream and downstream properties have no adverse impacts. Compensatory storage would be provided for all regulatory floodplain impacts, as necessary. In DuPage County, fill in the floodplain is compensated for incrementally at a ratio of 1.5:1. In Cook County, fill in the floodplain is compensated for at a ratio of 1:1, except for unincorporated areas and communities with stricter ordinances, which are compensated for at 1.5:1. Local ordinances, such as those for the City of Des Plaines and City of Northlake, govern because they are stricter than county requirements (see Table 3-41). Potential compensatory storage locations are depicted in Appendix E.

3.12.3.1 O'Hare Airport and FAA Guidelines

Where waterways (Higgins Creek, Willow Creek, and Bensenville Drainage Ditch) exit the project limits and discharge onto O'Hare Airport, it is the intent of the project not to increase flow rates or flood stage elevations. Incremental compensatory storage would be provided adjacent to the project corridor streams to accommodate flood-stage storage lost to roadway fill that would be placed in the floodplain. Combined with proposed detention sites, the creeks would be able to flow onto O'Hare Airport without increasing the flow rates or elevation of the water surface.

To establish a baseline for the creeks that flow onto O'Hare Airport, the hydraulic analysis was built from HEC-RAS hydraulic models representing the future condition of the OMP, which is currently under construction. Approved hydraulic models for the OMP were used as a starting point. The realignment and relocation of runways, the enclosure of Willow Creek in long box culverts, and the realignment of the Bensenville Drainage Ditch occurring during the construction of the OMP have been considered in the development of the existing conditions.

The EO-WB project is located within defined wildlife hazard separation distances of O'Hare Airport and Schaumburg Regional Airport (see Exhibit 3-15). Therefore, proposed detention and compensatory storage sites would be designed, when practical and feasible, to minimize potential wildlife attractants within the project corridor near the airports. Having open water or wetlands on or near airport property can substantially increase the likelihood of aircraft/wildlife collisions. In July 2003, a MOA between federal resource agencies⁵⁷ was signed to acknowledge their respective missions in protecting aviation from wildlife hazards. Using guidance provided by the FAA AC No. 150/5200-33B, *Hazardous Wildlife Attractants on or near Airports*, stormwater management facilities that do not draw down within 48 hours after the design storm event would use physical barriers, such as wire grids, pillows, or netting, to prevent access of hazardous wildlife to open-water areas, as necessary (see subsection 3.10.3.2 for additional information).

Proposed compensatory storage and detention sites to aid in flood control and to offset floodplain storage loss for Willow Creek and Bensenville Drainage Ditch lie within future

⁵⁷ The resource agencies included FAA, U.S. Air Force, USACE, USEPA, USFWS, and the USDA–Wildlife Services.

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.

