
5.12 WETLANDS

In accordance with FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, an EIS must include an investigation of the impacts to wetlands. The purpose of this section is to identify the likely impact on these resources as a result of implementing either the No Action Alternative (Alternative A) or any of the Build Alternatives under detailed evaluation.

The FAA, working with the U.S. Army Corps of Engineers (USACE) and the Illinois Environmental Protection Agency (IEPA) as cooperating agencies, developed a Memorandum of Agreement (MOA)¹ to facilitate the potential issuance of a Section 404 permit and the requisite Section 401 Water Quality Certification. This MOA was developed by the FAA in response to a City request that any required permits or certifications could be decided, coincident with completion of FAA's Record of Decision (ROD).

In accordance with the MOA, the USACE is reviewing and processing a Section 404 permit application and pre-discharge notification per the requirements of the Clean Water Act, as submitted by the City of Chicago Department of Aviation (DOA).² Similarly, IEPA is reviewing anti-degradation (Water Quality Standards) and Section 401 Water Quality Certification information pertaining to potential project-related wetland impacts.³ Further, in accordance with the MOA, all three of these decision-making agencies will use the information developed during this EIS process to reach decisions on project alternatives and related matters as near simultaneously as possible. In furtherance of this goal, the public hearings conducted for this EIS were hosted by the FAA, the USACE, and the IEPA for purposes of meeting these agencies' decision-making requirements. The public hearings met the notification requirements of this EIS, as well as those associated with the Section 404 and Section 401 processes.

5.12.1 Background and Methodology

Applicable Federal and State regulations and Executive Orders pertaining to wetlands, and a summary of the methodology used to analyze potential impacts on these resources, will be described in the following sub-sections.

5.12.1.1 Regulatory Context

Assessment of wetlands impacts is required under Section 404 of the Clean Water Act; Executive Order 11990, *Protection of Wetlands*; FAA Order 5050.4A, *Airport Environmental*

¹ Interagency Coordination Agreement Among U.S. Army Corps of Engineers, Chicago District, Federal Aviation Administration, Chicago Airports District Office, and Illinois Environmental Protection Agency, for Coordination of the O'Hare Airport Modernization Project, Executed May 17, 2004.

² City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, November 2004.

³ A copy of the Individual Permit Application also was provided to IEPA in recognition of the need to obtain a Water Quality Certification from that Agency.

Handbook; and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*. In this regard, wetlands are defined in the Executive Order as:

those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mudflats, and natural ponds.

FAA Order 5050.4A, *Airport Environmental Handbook*, further states that:

the wetland ecosystem includes those areas which affect, or are affected by the wetland itself, e.g., adjacent uplands or regions upstream and downstream.

FAA Order 1050.1E refers to several regulations that must be complied with, including FAA Order DOT 5660.1A, *Preservation of the Nation's Wetlands*, which sets forth DOT policy such that transportation projects should be planned, constructed, and operated so as to assure protection and enhancement of wetlands. The USACE is responsible for making a jurisdictional determination on wetlands, and a Clean Water Act Section 404 permit is required in advance of the placement of dredge or fill material into non-wetland Waters of the United States (WUS), including jurisdictional wetlands. Although a Rivers and Harbors Act Section 10 Permit must be issued by USACE for any project involving obstruction or alteration of navigable water ways, a Section 10 permit would not be required for any of the Build Alternatives because none of the water ways in the vicinity of O'Hare are considered to be navigable waters. Additionally, if any financial assistance will be administered or provided by a State agency, compliance with the Illinois Department of Natural Resources (IDNR) Interagency Wetland Policy Act of 1989 is required.

Executive Order 11990, which applies to both jurisdictional and non-jurisdictional (i.e., isolated) wetlands, requires Federal agencies to find: "(1) that there is no practicable alternative to such [new] construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use." In making this finding, FAA may take into account economic, environmental, and other pertinent factors.

5.12.1.2 Clean Water Act Section 404

Clean Water Act, 33 U.S.C. 1251– 1387 establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives the USEPA the authority to implement pollution control programs, and contains requirements to set and enforce discharge limitations and to set water quality standards for all contaminants in surface waters. Section 404 requires applicants to obtain a permit for placement of dredge or fill material into non-wetland Waters of the United States (WUS), including jurisdictional wetlands, from the USACE or a delegated State agency, as appropriate. In Illinois, the USACE is the Section 404 permit issuance authority.

As required to process an individual Clean Water Act Section 404 permit application, the following information must be satisfactorily provided to the USACE in order to demonstrate the project's compliance with 40 CFR Part 230's *Section 404 (b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material*.

Restrictions on Discharge

No discharge of dredged or fill material shall be permitted if there is any practicable alternative to the proposed discharge which would avoid and/or minimize adverse impact on the aquatic ecosystem, provided that the alternative, if any, with lesser wetlands impacts does not have other over-riding adverse environmental consequences.

Alternatives Evaluation Summary

A thorough evaluation of on- and off-Airport alternatives is discussed in this EIS. Within both the EIS and the Section 404 permit application contexts, alternatives evaluated in detail must be determined to be practicable, in terms of satisfying project purpose and need criteria. In addition, no discharge or dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. Thus, an alternative recommended for implementation must be determined to be practicable or feasible in terms of safety design, engineering considerations, environmental consequences, economics, and other applicable factors, if any. Both the EIS and the Section 404 processes are structured so as to ensure that environmental information is disclosed to the public and agencies before decisions are made regarding project approval.

Avoidance and Minimization

The Clean Water Act also requires that, if a Federal action would affect wetlands and there is no practicable alternative, all practical means should be employed to avoid and/or minimize the wetland impacts due to runoff, construction, sedimentation, land use, or other reason.

In addition to the minimization and avoidance requirements, the Clean Water Act requires the following:

- **No Discharge can be Permitted if it Results in, or Contributes to, Violation of a State Water Quality Standard:** Water Quality Certification under Section 401 of the Clean Water Act, including the requisite anti-degradation finding, must be received from IEPA before any discharge of dredged or fill material into jurisdictional wetlands and/or other Waters of the U.S. occurs.
- **No Discharge can be Permitted if it Violates any Applicable Toxic Effluent Standard or Prohibition under Section 307 of the Clean Water Act:** No such toxic effluent standard or discharge prohibition has ever been promulgated by the USEPA.
- **No Discharge can be Permitted if it Jeopardizes the Continued Existence of a Species Listed as Endangered or Threatened Under the Endangered Species Act of 1973.**
- **No Discharge can be Permitted if it Violates any Requirement Imposed by the Secretary of Commerce to protect a Designated Marine Sanctuary.**
- **No Discharge can be Permitted if it will Cause or Contribute Significant Degradation of the Waters of the U.S.:** IEPA will review any project proposed at O'Hare for conformance to the requirements of 35 Illinois Administrative Code, Section 302, *Water*

Quality Standards, in reaching a determination on Issuance or denial of Section 401 Water Quality Certification. Such certification must be obtained by the City, prior to initiation of any project construction activity.

- **No Discharge can be Permitted Unless Appropriate and Practicable Steps have been Taken to Minimize Potential Adverse Impacts on the Aquatic Ecosystem.**

5.12.1.3 Clean Water Act Section 401

Section 401 requires water quality certification from the applicable State water pollution control agency (i.e., IEPA). The specific requirements associated with the water quality standards by which the IEPA will provide a water quality certification can be found in 35 Illinois Administrative Code, Section 302, *Water Quality Standards*.

5.12.1.4 Thresholds of Significance

According to FAA Order 1050.1E (Appendix A, 18.3), a significant impact occurs if the proposed action would:

- adversely affect the function of a wetland to protect the quality or quantity of municipal water supplies, including sole source, potable water aquifers;
- substantially alter the hydrology needed to sustain the functions and values of the affected wetland or any wetlands to which it is connected;
- substantially reduce the affected wetland's ability to retain floodwaters or storm-associated runoff, thereby threatening public health, safety or welfare (this includes cultural, recreational, and scientific resources important to the public, or property);
- adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically-important timber, food, or fiber resources in the affected or surrounding wetlands;
- promote development of secondary activities or services that would affect the resources mentioned in items (1) through (4) in this section; or
- be inconsistent with applicable State wetland strategies.

FAA Order 1050.1E also states:

An agency having expertise in wetland impacts or resources may indicate that the action has potential significant wetland impacts. The responsible FAA official shall consult with that agency and, as necessary, the [US]FWS [U.S. Fish and Wildlife Service], the Corps of Engineers, EPA, or NRCS [Natural Resource Conservation Service] (if wetlands are on agricultural lands), and State and local natural resource or wildlife agencies to make a determination on severity of wetland impacts.

As a result, the USACE, USFWS, USEPA, and IEPA were extensively consulted with in the preparation of this analysis.⁴

5.12.1.5 Methodologies

A field survey of wetlands (jurisdictional and non-jurisdictional) and non-wetland Waters of the U.S. (WUS) on the Airport was conducted by Harza Engineering (CCT) in 1999. The 1999 survey updated a previous 1995 wetlands delineation of the Airport that included areas outside of the boundary of the Airport.⁵ The final delineation report was produced in February 2000.⁶ The USACE reviewed the February 2000 report and confirmed the results in 2002.⁷ The project development profiles for the Build Alternatives were overlain on the wetland delineation map to identify the specific wetlands that would be directly and indirectly affected by each proposed alternative.

5.12.2 Baseline Conditions

There are numerous wetlands and other WUS at the Airport, as shown on **Exhibit 4.4-2 and 4.4-3 in Chapter 4, Affected Environment**. Wetlands can provide a variety of important benefits, including improved water quality, flood control, and support for wildlife. This section will identify and describe the extent, type, and functional values of the Airport's wetlands.

The wetlands at the Airport can be summarized as many small, individual sites providing relatively few beneficial wetland functions and values (refer to **Section 4.4.3.2, Wetlands and Waters of the U.S.**, and **Appendix N, Biological and Water Resources**, for additional baseline information related to these wetlands). The Airport's wetlands and WUS have been adversely affected by past human activities, including clearing, grading, and other developmental actions. The impacts of past disturbances range from modification of plant communities to creation of new wetland areas, primarily caused by man-made grading changes that blocked original drainage ways or which created isolated depressions.

The principle functions performed by most of the Airport's existing wetlands are time-limited, shallow depressional storage of stormwater and habitat for common wildlife species. Wildlife habitat, especially for birds, presents a clear safety concern with regard to aircraft operations.⁸ Stormwater storage function is limited, relatively short-term storage of small storm events, because the majority of the Airport's wetlands are shallow in depth and isolated from each

⁴ City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, Tab 11, November 2004.

⁵ Chicago O'Hare International Airport, Draft Delineation of Wetland and Floodplain Areas, Harza Environmental Services, November 1999.

⁶ Chicago O'Hare International Airport, Draft Delineation of Wetland and Floodplain Areas, Harza Environmental Services, February 2000.

⁷ Letter from Keith L. Wozniak, Chief, West Section Regulatory Branch, U.S. Army Corps of Engineers to James Considine, City of Chicago Department of Aviation. October 28, 2002. Copies were also provided to USEPA, IEPA, and the U.S. Fish and Wildlife Service.

⁸ Hazardous Wildlife Attractants On or Near Airports, FAA Advisory Circular 150/5200-33A, Federal Aviation Administration, July 27, 2004.

other. In summary, shallow depths and isolation within the ecosystem dictate that only very limited water quality benefits are provided by these wetlands.

Most of the Airport's wetlands are less than one acre in size, and they are scattered throughout the site. Wetland areas over two acres in size are generally on the undeveloped west side of the Airport. Six of the Airport's wetlands are between one and two acres in size. All of the wetlands at the Airport are classified as palustrine.⁹

The Airport wetlands are generally characterized by low native plant species diversity and richness, with only two of the larger wetland areas exhibiting Natural Areas Rating Index (NARI) scores greater than 20, and these scores are primarily due to their size, not the quality of habitat provided. The majority of the palustrine emergent cover type is composed of cattails, common reeds, and purple loosestrife. These plants are invasive species that form monocultures forcing out other species, and resulting in lower species diversity values. **Table 5.12-1** summarizes the wetland areas (128.2 acres) by standard cover types.¹⁰ There are no wetlands that provide unique functions at the Airport.

**TABLE 5.12-1
O'HARE INTERNATIONAL AIRPORT WETLAND AREAS BY COVER TYPE**

Cover Type (USFWS)	Total size (acres)
Palustrine Emergent	105.0
Palustrine Scrub-Shrub	23.0 (a)
Palustrine Open Water	0.2
Total	128.2

Notes: (a) Approximately 21.7 acres of these wetlands were described by Harza as forested wetlands. However, the USACE has indicated that these wetlands do not meet their criteria for forested wetlands and these wetlands have been classified as scrub-shrub wetlands for purposes of analysis.

Source: Chicago O'Hare International Airport Delineation of Wetland and Floodplain Areas, Harza Environmental Services, February 2000. Updated by MWH [CCT], 2004.

Non-wetland WUS acres at, or very near, the Airport consist of stream and drainage ditch channels. **Table 5.12-2** summarizes the WUS areas (27.0 acres) at the Airport. This includes approximately one acre within the proposed southwest acquisition area.

⁹ Classification of Wetlands and Deepwater Habitats of the United States. L. M. Cowardin, V. Carter, F. C. Golet, and E.T. LaRoe. December 1979. (Prepared for Office of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240.)

¹⁰ Classification of Wetlands and Deepwater Habitats of the United States. L. M. Cowardin, V. Carter, F. C. Golet, and E.T. LaRoe. December 1979. (Prepared for Office of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240.)

**TABLE 5.12-2
WATERS OF THE US AREAS AT O'HARE INTERNATIONAL AIRPORT**

Name	Total size (acres)
Bensenville Ditch(a)	3.8
Willow Creek	7.5
Higgins Creek	2.4
Willow-Higgins Creek	7.2
Crystal Creek	1.2
Drainage Ditches	4.9
Total	27.0
Note: (a) Includes 1.0 acre of WUS within the proposed southwest acquisition area	
Source: MWH [CCT], 2004.	

5.12.3 Alternatives Analysis

This section describes the wetland and non-wetland WUS impacts of the alternatives under consideration in a comparative form with the No Action Alternative (Alternative A). Only Construction Phase I is being presented in the Alternatives Analysis since all such impacts under consideration would likely occur during the first phase of airport development for any of the Build Alternatives.

All site preparation work required for major development activities at the Airport would be accomplished in the early years (defined as the first two to three years of construction activity) for any Build Alternative. The extent of site preparation and earthwork early in the construction program is closely related to: construction of high priority improvements, development of widely dispersed contractor facilities, disposal of excess soils, redistribution of existing soil berms, and deployment of a construction sequence that balances efficient construction with maintenance of safe air travel on a fully active airport.

5.12.3.1 Alternative A – No Action

Table 5.12-3 shows the wetlands that would require filling to undertake the No Action Alternative (Alternative A). A total of 23.5 acres would be filled, consisting of 13.5 acres of non-jurisdictional (i.e., isolated) wetlands and 10 acres of jurisdictional wetlands. Ongoing projects, either previously assessed, or with independent utility as identified in Table E-19 in Appendix E, Alternatives, could directly affect existing wetlands through draining, filling, and development of the wetland areas, or indirectly by altering the hydrology of the areas in which the wetlands are located.

5.12.3.2 Alternatives C, D, and G

The three Build Alternatives involve major development at the Airport that would all likely result in similar impacts to the wetlands and non-wetland WUS at the Airport. In this regard, it is important to note that such impacts relate to the amount of construction-related activity to be undertaken at the Airport and not just to the specific Airport locations where facilities would be constructed. As previously noted, due to the lack of open space at the Airport, the demands of

a construction program involving major development of the Airport would require that most, if not all, of the existing wetlands be filled. Basically, these resources would need to be filled as a result of the following:

- an increase in the footprint area of stormwater management facilities;
- the development of new airfield and landside facilities;
- the need to provide adequate construction-related areas for construction spoil storage, parking construction equipment, providing for construction employee parking, locating concrete and asphalt batch plants, and providing for construction haul roads; and
- the need to maintain O'Hare in an open and fully functioning mode throughout the entire construction process.

Included in **Appendix E, Alternatives**, are the proposed airfield layouts of Alternative C (**Exhibit E-17** and **E-18**), Alternative D (**Exhibit E-20** and **E-21**), and Alternative G (**Exhibit E-23** and **E-24**). The site preparation and earthwork required for construction of these Build Alternatives would impact existing wetlands on the Airport. Of the approximate 155.2 acres of wetlands and non-wetland WUS at the Airport, Alternatives C and G would result in the filling of 154.2 acres of wetlands and WUS (see **Table 5.12-3**), at a minimum. Only 1.0 acres of WUS associated with Higgins Creek and Crystal Creek would not be affected by Alternatives C and G.

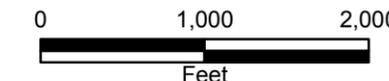
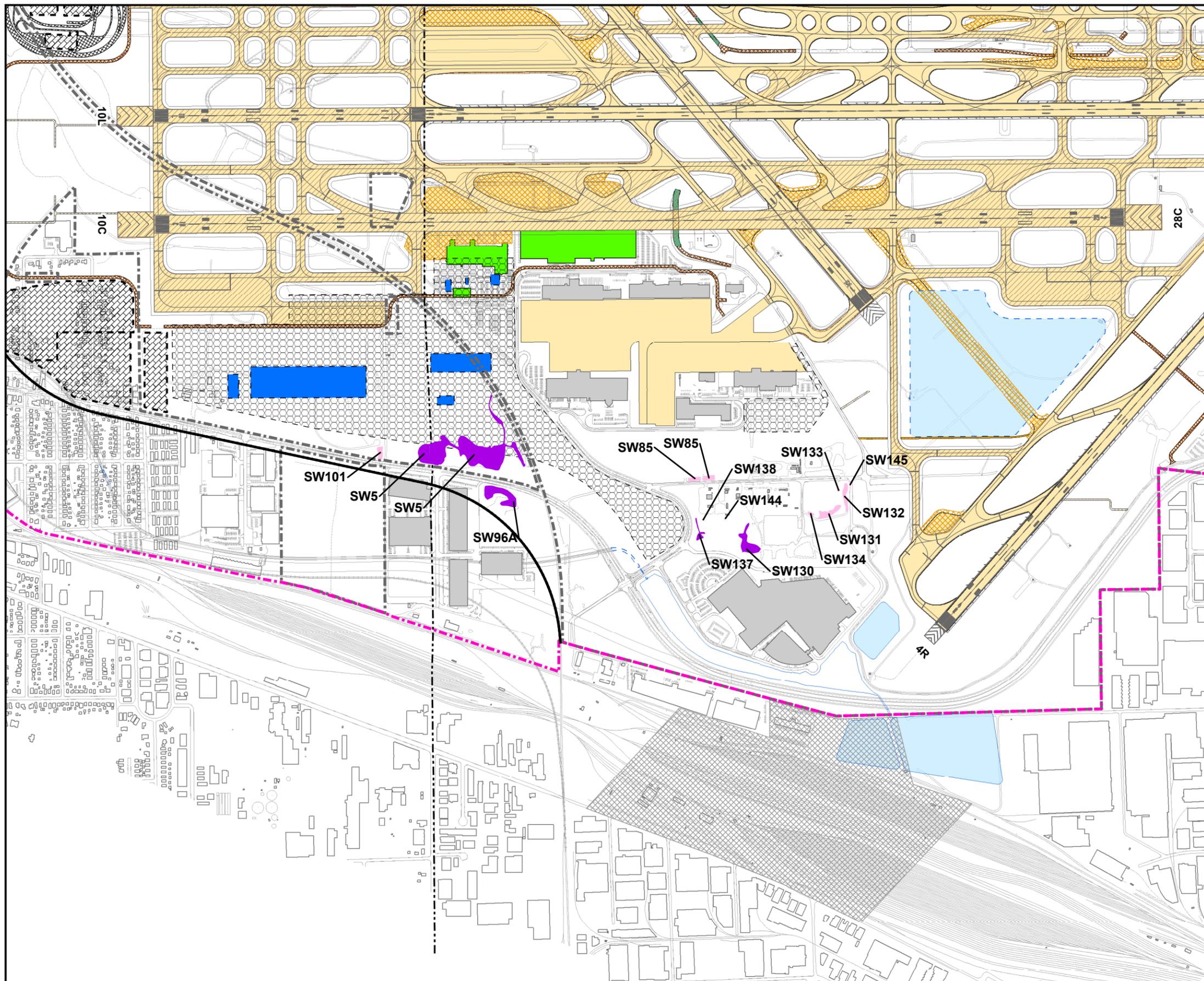
Exhibit 5.12-1 shows the existing wetlands that could potentially be avoided under Alternative D. Of the approximate 155.2 acres of wetlands and WUS at the Airport, Alternative D would result in the filling of 146.6 acres of wetlands and WUS. In addition to avoiding the 1.0 acres of WUS associated with Higgins Creek and Crystal Creek, Alternative D also potentially avoids filling in 6.4 acres of jurisdictional wetlands and 1.25 acres of non-jurisdictional wetlands that would occur under Alternatives C and G. The possible avoidance of these 7.65 acres is because Alternative D does not include the construction of Runway 10R/28L. However, these 7.65 acres of wetlands are expected to dry up over time because these wetlands would be hydrologically disconnected from Bensenville Ditch. Therefore, it is anticipated that Alternative D also would result in the overall loss of 154.2 acres of wetlands and non-wetland WUS (see **Table 5.12-3**).



Chicago
O'Hare
International
Airport

O'Hare Modernization
Environmental Impact Statement

- Non-Jurisdictional Wetlands
- Jurisdictional Wetlands
- Existing Airfield Pavement
- Proposed Airfield Pavement
- Airfield Pavement Demolition
- Existing Airport Building
- Existing Airport Building in AOA to be Relocated
- Relocated Airport Buildings Previously in AOA
- Proposed Aviation Development Areas
- Proposed Surface Parking
- Existing Detention Basin
- Proposed Detention Basin
- Proposed Airport Property Line
- Existing Airport Property Line
- County Line



Potentially Avoided Wetlands
(Alternative D)

► Exhibit 5.12-1

Source: Crawford, Murphy and Tilly, Inc. [TPC] 2004. MWH [CCT], 2003.

**TABLE 5.12-3
WETLAND AND WUS IMPACTS (CONSTRUCTION PHASE I)**

Water Resource Type	Classification	Wetlands & WUS On O'Hare Baseline (2002)	Wetland Fill Requirements (acres)			
			Alternative A (No Action)	Build Alternatives		
				Alternative C	Alternative D	Alternative G
Cook County						
USACE Jurisdictional Wetlands	Jurisdictional	15.4	2.1	15.4	15.4	15.4
WUS – Creeks/Ditches (a)	WUS	27.0	0	26.0	26.0	26.0
In-Channel Wetlands - SW120 and SW121(b)	Jurisdictional	24.8	4.4	24.8	24.8	24.8
Isolated Wetlands	Isolated	14.5	7.0	14.5	14.5	14.5
Isolated Wetlands – Critical	Isolated	N/A	N/A	N/A	N/A	N/A
USEPA – Forested (d)	Jurisdictional	N/A	N/A	N/A	N/A	N/A
USFWS – Forested (e)	Jurisdictional	4.4	3.0	4.4	4.4	4.4
Total (Acres)		86.1	16.5	85.1	85.1	85.1
DuPage County						
USACE Jurisdictional Wetlands	Jurisdictional	11.3	0.5	11.3	11.3	11.3
WUS – Creeks/Ditches	WUS	N/A	N/A	N/A	N/A	N/A
In-Channel Wetlands - SW120 and SW121(b)	Jurisdictional	N/A	N/A	N/A	N/A	N/A
Isolated Wetlands	Isolated	24.9	6.5	24.9	24.9	24.9
Isolated Wetlands – Critical	Isolated	10.7	0	10.7	10.7	10.7
USEPA – Forested (d)	Jurisdictional	22.2	0	22.2	22.2	22.2
USFWS – Forested (e)	Jurisdictional	N/A	N/A	N/A	N/A	N/A
Total (Acres)		69.1	7.0	69.1	69.1	69.1
Total						
USACE Jurisdictional Wetlands	Jurisdictional	26.7	2.6	26.7	26.7	26.7
WUS – Creeks/Ditches (a)	WUS	27.0	0	26.0 (c)	26.0(c)	26.0 (c)
In-Channel Wetlands - SW120 and SW121(b)	Jurisdictional	24.8	4.4	24.8	24.8	24.8
Isolated Wetlands	Isolated	39.4	13.5	39.4	39.4	39.4
Isolated Wetlands – Critical	Isolated	10.7	0	10.7	10.7	10.7
USEPA – Forested (d)	Jurisdictional	22.2	0	22.2	22.2	22.2
USFWS – Forested (e)	Jurisdictional	4.4	3.0	4.4	4.4	4.4
		155.2	23.5	154.2	154.2	154.2

- Notes:
- (a) Includes 1.0 acre of WUS in the potential southwest acquisition area.
 - (b) The USACE has indicated that mitigated Wetland SW120 and Wetland SW121 should be treated as WUS, as these wetlands provide conveyance for WUS (i.e. Bensenville Ditch).
 - (c) Out of the 27.0 acres of WUS on site, 1.0 acres of WUS associated with Higgins Creek and Crystal Creek are not proposed to be affected by any Build Alternative.
 - (d) In comments provided by USEPA on the DEIS, USEPA indicated that wetlands NW28 and SW15 should be mitigated at a higher ratio of 3:1.
 - (e) In comments provided by USFWS on the DEIS, wetlands SE63, NE01, NE05, NE10, NE58, NW37B, NE08, SE64, and SW25 should be mitigated at a higher ratio of 3:1.

Source: City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, November 2004.

When considering the regulatory requirements, the following would be undertaken with each of the Build Alternatives:

- **Impacts to State Water Quality Standards:** Water Quality Certification under Section 401 of the Clean Water Act must be received from IEPA before any discharge of dredged or fill material into jurisdictional wetlands and/or other WUS occurs. Reasonable assurance will be demonstrated by the issuance of the certification by IEPA. An NPDES permit, including appropriate limitations, for controlling stormwater runoff during construction must be issued by IEPA, prior to construction start-up.
- **Toxic Effluent Standard or Prohibition under Section 307 of the Clean Water Act:** No toxic effluent standard or discharge prohibition has ever been promulgated by the USEPA.
- **Impacts to the Continued Existence of a Species Listed as Endangered or Threatened Under the Endangered Species Act of 1973.** In a letter dated December 23, 2002, the USFWS stated that the project is adjacent to a known habitat for the Federally-listed threatened eastern prairie white fringed orchid and the eastern massasauga rattlesnake (candidate species).¹¹ In a letter dated January 6, 2003, the IDNR stated that there was a known occurrence of two State-listed species on or adjacent to Airport property (small sundrops, eastern prairie white fringed orchid).¹² In a letter dated October 22, 2003, IDNR stated that the three aforementioned species are not likely located at O'Hare.¹³ In a letter dated March 16, 2004, the USFWS concurred that the three species are not present at the Airport.¹⁴ Additionally, IDNR has stated that their sign off is in effect until October 2006, at which time a new sign off request would potentially be required.¹⁵
- **Marine Sanctuary Protections.** No marine sanctuaries are located on or adjacent to O'Hare.
- **Impacts/Degradation of the Waters of the U.S.** The majority of the on-site WUS, consisting of portions of Bensenville Ditch, Crystal Creek, Higgins Creek, Willow Creek, and Willow-Higgins Creek, are channelized and the side slopes are eroding actively. Results of surveys completed in 1995 and 2002 showed that all sites examined were of poor water quality, with correspondingly poor habitat values. IEPA will review any project proposed at O'Hare for conformance to the requirements of 35 Illinois Administrative Code, Section 302, *Water Quality Standards*, in reaching a determination on Issuance or denial of Section 401 Water Quality Certification. Such certification must be obtained by the City prior to initiation of any project construction activity.

¹¹ Letter from John Rogner, USFWS, to Peter Mulvaney, Montgomery Watson Harza, December 23, 2002.

¹² Letter from Heather Ryan, IDNR, to Peter Mulvaney, Montgomery Watson Harza, January 6, 2003.

¹³ Letter from Steve Hamer, IDNR, to John Chitty, Montgomery Watson Harza, October 22, 2003.

¹⁴ Letter from Karla Kramer, USFWS, to John Chitty, Montgomery Watson Harza, March 16, 2004.

¹⁵ Letter from Steve Hamer, IDNR, to Michael Boland, City of Chicago Department of Aviation, O'Hare Modernization Program Office, June 20, 2005.

- **Steps Taken to Minimize Potential Adverse Impacts on the Aquatic Ecosystem.** The following steps have been taken to minimize potential adverse impacts on the aquatic ecosystem:¹⁶
 - Site preparation plans will be reviewed and approved by the appropriate Soil and Water Conservation District (SWCD) prior to initiation of construction.
 - Spoil materials which are temporarily stockpiled will be contained by sediment and erosion control devices.
 - Sedimentation basins will be constructed to allow sediment in stormwater runoff to settle prior to off-site discharge.
 - Stormwater management facilities will be designed to meet State and Federal requirements.
 - Best Management Practices (BMPs) will be incorporated into construction instructions. These BMPs are listed in **Appendix Q, Construction**.

5.12.4 Potential Mitigation Measures

The guidelines associated with both the requirements for FAA approval and the USACE Section 404 permit process indicate that satisfactory mitigation must be provided if wetlands and/or non-wetland WUS impacts could occur as a result of project implementation. Mitigation within the context of both the requirements for FAA approval and the USACE Section 404 permit program consists of at least three sequential steps: (1) avoidance of wetlands impacts where feasible; (2) minimization of impacts to the extent feasible; and (3) compensation for those wetlands impacts which cannot be avoided or further minimized. Although avoidance and minimization of project-related wetland impacts is a long-standing and well-understood requirement for all projects that require Federal approval, avoidance and/or minimization options for Alternatives C, D, or G are nonexistent. Therefore, in consultation with FAA, the City of Chicago Department of Aviation (DOA) has developed a conceptual mitigation plan¹⁷ designed to compensate for the loss of wetlands and non-wetland WUS at the Airport. This mitigation strategy also takes into account the policies outlined in FAA Advisory Circular 150/5200-33A, *Hazardous Wildlife Attractants On or Near Airports* (dated July 27, 2004), which discusses requirements concerning the avoidance of hazardous wildlife attractants at Airports.

Wetlands frequently provide attractive habitat for many species of wildlife, and the use of active Airport property, including approach and departure airspace, by wildlife can pose an unacceptable safety threat to aircraft operations. The most common type of aircraft/wildlife interference includes collision with birds, specifically gulls, waterfowl, and raptors.¹⁸ Several

¹⁶ City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, November 2004.

¹⁷ City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, November 2004.

¹⁸ Wildlife Hazard Mitigation Statement-Memorandum of Agreement between the FAA, the U.S. Air Force, the USEPA, the USFWS, and the USDA, July 29, 2003.

species of birds use the Airport on a seasonal or transient basis. Overall, wetlands on or near the Airport increase the likelihood of an aircraft/wildlife collision. FAA recommends the following distances be established between the wildlife attractant and an airport's aircraft movement areas:

- 10,000 feet for jet-serviced airports
- 5,000 feet for propeller-serviced airports
- 5 miles for approach/departure airspaces

Therefore, the mitigation strategy encompasses the policies outlined in FAA Advisory Circular 150/5200-33A.

5.12.4.1 Conceptual Wetlands Mitigation Plan

The City's Conceptual Wetlands Mitigation Plan has been refined in response to comments received by the DOA from the Interagency Mitigation Review Team (MRT) during the Section 404 application review process. The MRT consists of the USACE, USEPA, IEPA, and the USFWS. The original Conceptual Wetlands Mitigation Plan was included within the USACE Section 404 Individual Permit Application.¹⁹ **Table 5.12-4** summarizes wetland and WUS impacts at O'Hare with proposed mitigation ratios as suggested in consultation with the MRT.

¹⁹ City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, November 2004.

**TABLE 5.12-4
PROPOSED WETLAND AND NON-WETLAND WUS MITIGATION CREDITS**

Water Resource Type	Classification	Impact (acres)	Mitigation Ratio	Mitigation Credits	Mitigation Category(a)
USACE Jurisdictional Wetlands (DuPage County)	Jurisdictional	11.3	1.5 : 1.0	17.0	I
USACE Jurisdictional Wetlands (Cook County)	Jurisdictional	15.4	1.5 : 1.0	23.1	II
WUS - Creeks/Ditches (Cook County) (b)(c)	WUS	23.0	5.0 : 1.0	115.0	IV
WUS - Creeks/Ditches (Cook County) (c)	WUS	3.0	1.5 : 1.0	4.5	IV
Isolated Wetlands (DuPage County)	Isolated	24.9	1.5 : 1.0	37.4	I
Isolated Wetlands (Cook County)	Isolated	14.5	1.0 : 1.0 (d)	14.5	III
Isolated – Critical Classification (DuPage County)	Isolated	10.7	3.0 : 1.0	32.1	I
In-Channel Wetlands (SW120 and SW121) (e)	Jurisdictional	24.8	5.0 : 1.0	124.0	IV
USEPA – Forested (DuPage County) (f)	Jurisdictional	22.2	3.0 : 1.0	66.6	I
USFWS – Forested (Cook County) (g)	Jurisdictional	4.4	3.0 : 1.0	13.2	II
Total		154.2	N/A	447.4 (h)	N/A

Notes: (a) Refer to **Section 5.12.4.3, Mitigation Categories**, for a description of the proposed approaches to meet mitigation requirements.

(b) Includes 1.0 acre of WUS in the potential southwest acquisition area.

(c) Mitigation ratios for specific creeks and ditched were reviewed by USACE.

(d) FAA concurrence from Michael MacMullen (FAA) to Carol Wilinski (DOA), dated January 16, 2002, for the 1.0: 1.0 mitigation ratio for the non-jurisdictional (isolated) wetlands associated with the O'Hare Express North Project.

(e) The USACE has indicated that mitigated Wetland SW120 and Wetland SW121 should be treated as WUS, as these wetlands provide conveyance for WUS (i.e., Bensenville Ditch).

(f) In comments provided by USEPA on the DEIS, USEPA indicated that wetlands NW28 and SW15 should be mitigated at a higher ratio of 3:1.

(g) In comments provided by USFWS on the DEIS, wetlands SE63, NE01, NE05, NE10, NE58, NW37B, NE08, SE64, and SW25 should be mitigated at a higher ratio of 3:1.

(h) 447.4 acres of credit are proposed.

Source: City of Chicago Department of Aviation Individual Permit Application to U.S. Army Corps of Engineers, November 2004 (Revised June 23, 2005).

The proposed conceptual wetland mitigation plan is intended to provide compensatory mitigation for wetlands and non-wetland WUS removed from O'Hare. The overall intent is to provide compensatory mitigation, which greatly improves the quality of the provided resources with respect to wildlife utilization, while also offering additional value to interested publics by providing access that is not possible at the Airport.

5.12.4.2 Compensatory Mitigation Site Selection Criteria

Criteria have been established for compensatory mitigation site selection. Sites will only be selected that can provide the necessary wetland mitigation credits that meet FAA's standards, as well as those of the regulatory agencies (i.e., the MRT). In addition, any site selected for mitigation must also be acceptable to that site's owner. Applicable site selection criteria include, but are not necessarily limited to, the following:

- Sites within the Des Plaines River Watershed are preferred.
- Sites with no impediments to immediate design, permitting, and construction are preferred.
- Project sites that conflict with the site selection criteria of the FAA's Advisory Circular 150/5200-33A, *Hazardous Wildlife Attractants On or Near Airports* (dated July 27, 2004) will not be selected.

- Larger sites are preferred to scattered, smaller sites in order to facilitate long term management for a composite of wetlands values.
- Compensatory wetlands will be provided via a mix of creation, restoration, and enhancement. Creation and restoration are preferred to enhancement.
- Sites providing for in-kind replacement for impacted wetlands and/or WUS are preferred.
- Sites supporting a diverse ecosystem with hydrologic connections to other ecosystems are preferred.
- Sites that provide a high plant ground cover and diversity, contain minimal invasive species, and improve the quality of the resource are preferred.
- Sites that have a high likelihood of success are preferred.

5.12.4.3 Mitigation Categories

Approximately 447.4 mitigation credits are proposed for the 154.2 acres of wetland/WUS impacts at O'Hare (see **Table 5.12-4**). The following proposed approach to provide compensatory mitigation includes four mitigation categories, one for DuPage County wetlands (Category 1), a second for USACE regulated Cook County wetlands (Category 2), a third for Cook County isolated wetlands (Category 3), and the fourth for non-wetland WUS (Category 4). The categories are further described below.

Category I

The DOA proposes to provide approximately 153.1 mitigation credits for the loss of 69.1 acres of USACE jurisdictional and isolated wetlands in DuPage County (see **Table 5.12-4**). The conceptual approach is to first pursue development of wetlands mitigation within DuPage County. The selected wetland developer would be responsible for long-term maintenance and monitoring of this mitigation area. The process for the selection and development of the compensatory sites would be developed by the MRT for application to the wetland developer's suggested site(s), in consultation with DOA and FAA, and the details of this process will be set forth in the Section 404 permit. Adequate wetland mitigation is available.

Category II

For the loss of 19.8 acres of USACE jurisdictional wetlands in Cook County, the DOA proposes to provide approximately 36.3 acres of mitigation (see **Table 5.12-4**). The proposal is to provide off-site mitigation through a wetland developer. The wetland developer is to provide the off-site mitigation, concurrent with the Airport's construction process. The wetland developer is to proceed under a contract agreement to be executed with the DOA, and, thereafter, the developer would be responsible for development, maintenance, and monitoring of the compensatory wetlands. The criteria for the selection and development of the compensatory sites was developed by the MRT, in consultation with DOA and FAA, and the details of this process will be set forth in the Section 404 permit. Adequate wetland mitigation is available.

Category III

The DOA is proposing to provide approximately 14.5 acres of mitigation credit for the loss of 14.5 acres of isolated (i.e., non-jurisdictional) wetlands in Cook County. The conceptual approach is to pursue development of wetlands mitigation within the City limits of Chicago. The selected wetland developer would be responsible for long-term maintenance and monitoring of this mitigation area. The process for the selection and development of the compensatory sites was developed by the MRT, in consultation with DOA and FAA, and the details of this process will be set forth in the Section 404 permit. Adequate wetland mitigation is available.

Category IV

The DOA is proposing to provide approximately 243.5 mitigation credits for the loss of 50.8 acres of non-wetland WUS (see **Table 5.12-4**). The majority of non-wetland WUS impacts at O'Hare will be compensated at a 5.0:1 ratio. However, the USACE may allow a minimum 1.5:1 ratio for drainage ditches that provide minimal ecological function and/or have been modified or show no clear origin as a natural stream or tributary. Therefore, DOA proposes to mitigate three acres of man-made/low quality ditches at the 1.5:1 ratio. The remainder of the non-wetland WUS would be mitigated at the 5.0:1 ratio. DOA's proposal is to pursue off-site mitigation through a wetland developer. Dependent upon either the site or the developer selected, either the site owner or the developer would be responsible for long-term maintenance and monitoring of the mitigation area. The criteria for the selection and development of the compensatory sites is being developed by the MRT, in consultation with DOA and FAA, and the details of this process will be set forth in the Section 404 permit. Adequate wetland mitigation is available.

5.12.5 Summary

Compared to the No Action Alternative (Alternative A), the likely impacts to wetlands (both jurisdictional and non-jurisdictional) under Alternatives C, D, or G would be significantly greater due to placement of permanent structures, placement of construction-related equipment, site grading activities, and the placement of construction spoil materials. As compared to Alternatives C and G, Alternative D might theoretically result in the loss of about 7.65 fewer acres of wetlands. However, these 7.65 acres of wetlands would be expected to dry up over time because these wetlands would be hydrologically disconnected from Bensenville Ditch. Therefore, it is likely that all Build Alternatives would result in the loss of 154.2 acres of wetlands.

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