



## 6.6 Wetland Mitigation

Wetland mitigation is based on requirements set forth in Section 404 of the Clean Water Act (33 USC 1344). In 1991, the IDNR, USFWS, and INDOT signed a Memorandum of Understanding (MOU) that established standard mitigation ratios for impacts to wetland resources. While not signatory to the agreement, the USACE and IDEM typically follow the MOU for those wetland impacts that fall under federal jurisdiction. The agreed mitigation ratios of 2:1 for emergent wetlands, 3:1 for scrub/shrub wetlands, and 3:1 to 4:1 for forested wetlands are still used as guidance for regulatory determination of a permit applicant's request for wetland mitigation. The USACE and IDEM may require more or less impact acreage depending on the quality, location, size, function, and value of the wetland. For those isolated wetland impacts that fall under the IDEM Isolated Wetlands Regulatory Program, mitigation ratios will depend on the Class of wetland impact, timing of mitigation, and location of mitigation site.

Compensatory mitigation for disturbances to natural resources is the final alternative that should be considered when a project is planned. The sequence to follow during project planning is 1) avoidance of disturbance, 2) minimization of disturbance, and 3) where these two alternatives do not dispose of the issue, compensatory mitigation for the loss of natural resources will be required.

Compensatory wetland mitigation for transportation projects traditionally requires restoration of wetland conditions at an off-site location that is currently not identified as a wetland by USCOE standards. Performance standards for wetland mitigation and monitoring have been proposed by the Detroit District Corps of Engineers in a document titled Detroit District U.S. Army Corps of Engineers Mitigation Guidelines and Requirements dated June 2004. According to these guidelines and requirements, site construction should be followed by three to ten years of monitoring (depending on wetland type) to ensure the wetland's proper development.

Based on wetland delineations for Preferred Alternative G-Es, this project is anticipated to impact approximately 29.93 acres of wetlands. Of these, 13.21 acres are forested wetlands, 1.45 acres are scrub/shrub wetlands, and 15.27 acres are emergent wetlands.

In a jurisdictional determination letter dated February 24, 2005 (Appendix C) the USACE identifies which impact sites are considered "waters of the United States," thus falling under federal jurisdiction. Of the total wetland acreage impacted, 25.51 acres fall under federal jurisdiction. This includes 12.18 acres of emergent wetlands, 0.58 acres of scrub/shrub wetlands, and 12.75 acres of forested wetlands. The replacement of wetlands that fall under federal (USACE) jurisdiction will follow INDOT's MOU dated January 28, 1991 (Appendix H). The MOU was developed to ensure that compensatory wetlands would be appropriately designed, acquired, and constructed in such a manner as to ensure no net loss of this valuable habitat. Wetland mitigation for this project includes the following replacement ratios: 2:1 for emergent wetlands, 3:1 for scrub/shrub wetlands, 4:1 for forested wetlands, and 1:1 for aquatic bed wetlands and farmed wetlands. These ratios are recommendations and actual mitigation ratios will be decided upon during permitting. Federal jurisdictional wetland mitigation will require approximately 77.10 acres.

The remaining 4.42 acres do not fall under federal jurisdiction. This includes 3.09 acres of emergent wetlands, 0.87 acres of scrub/shrub wetlands, and 0.46 acres of forested wetlands. These sites will likely fall under state jurisdiction under the IDEM Isolated Wetlands Regulatory Program. As part of this program, isolated wetlands are grouped into one of three Classes based upon wetland quality. Class III isolated wetlands are generally of higher quality and Class I wetlands of lower quality, while Class II wetlands fall somewhere in the middle. Different wetland classes require different mitigation requirements. Prior to permitting each isolated wetland will be appropriately classified.



A total of 22.10 acres (25% of required wetland acreage) will be needed for buffers around wetland mitigation sites. Consideration will be given to tree plantings as part of wetland mitigation buffers. Additional acres will be required for access easements (ingress and egress) to the mitigation sites for construction and monitoring.

Wetland impacts are within two 8-digit watersheds, the Kankakee (07120001) and the St. Joseph (04050001). Approximately 24.75 acres of wetland impacts are within the Kankakee watershed and 5.18 acres are within the St. Joseph watershed. Table 6.6.6 shows the different wetland types impacted and required mitigation in each watershed for federal jurisdictional wetlands. Table 6.6.7 shows the different wetland types impacted and required mitigation (based on “worst-case” scenario) for isolated wetlands.

Wetland impact types, mitigation ratios, and mitigation requirements for Preferred Alternative G-Es are listed in Tables 6.6.6 and 6.6.7 for federal jurisdictional and isolated wetlands in each watershed.

Table 6.6.6. Habitat types, Impacts, Mitigation Ratios, and Mitigation Required for Federal Jurisdictional Wetland Impacts for the US 31 Plymouth to South Bend Preferred Alternative G-Es.			
Habitat Type	Impacts (Acres)	Mitigation Ratio	Mitigation Required (Acres)
<b>Kankakee Watershed (07120001)</b>			
Forested Wetlands	12.32	4:1	49.28
Scrub/Shrub Wetlands	0.56	3:1	1.68
Emergent Wetlands	7.79	2:1	15.58
Wetland Buffers	-----	---	16.64
<b>Watershed Total</b>	<b>20.67</b>	<b>---</b>	<b>83.18</b>
<b>St. Joseph Watershed (07120001)</b>			
Forested Wetlands	0.43	4:1	1.72
Scrub/Shrub Wetlands	0.02	3:1	0.06
Emergent Wetlands	4.39	2:1	8.78
Wetland Buffers	-----	---	2.64
<b>Watershed Total</b>	<b>4.84</b>	<b>---</b>	<b>13.20</b>
<b>TOTAL</b>			
	<b>25.51</b>	<b>---</b>	<b>96.38</b>



Table 6.6.7. Habitat types, Impacts, Mitigation Ratios, and Mitigation Required for Isolated Wetland Impacts for the US 31 Plymouth to South Bend Preferred Alternative G-Es.			
Habitat Type	Impacts (Acres)	Mitigation Ratio	Mitigation Required (Acres)
<b>Kankakee Watershed (07120001)</b>			
Forested Wetlands	0.46	3:1	1.38
Scrub/Shrub Wetlands	0.75	2.5:1	1.88
Emergent Wetlands	2.87	2.5:1	7.18
Wetland Buffers	-----	---	2.61
<b>Watershed Total</b>	<b>4.08</b>	<b>---</b>	<b>13.05</b>
<b>St. Joseph Watershed (07120001)</b>			
Forested Wetlands	0	3:1	0
Scrub/Shrub Wetlands	0.12	2.5:1	0.30
Emergent Wetlands	0.22	2.5:1	0.55
Wetland Buffers	-----	---	0.21
<b>Watershed Total</b>	<b>0.34</b>	<b>---</b>	<b>1.06</b>
<b>TOTAL</b>	<b>4.42</b>	<b>---</b>	<b>14.11</b>

A Conceptual Wetland Mitigation Plan was developed for this project and can be found in Appendix N. This mitigation plan is conceptual and compensatory for probable wetland losses resulting from Preferred Alternative G-Es. This plan lists general site locations where mitigation could take place. These sites include: Potato Creek State Park, Flat Lake Watershed, Lake of the Woods Watershed, Lakeville Lakes Watershed, Catfish/Wharton Lakes Area, Place Trail Marsh Area, Marker & Grimes Ditches Area, and the St. Patrick’s County Park Area. There are conceptual sites located in both the Kankakee and St. Joseph watersheds. In many cases there is a community interest in the protection and/or enhancement of the watershed.

Reasons for expected success of the wetland mitigation sites include the occurrence of unique and high quality habitats in the areas near these mitigation sites. Mitigation sites are to extend outward from such environmentally productive sites. These sites will also involve the restoration of areas that were historically wetlands, rather than the creation of wetlands from upland areas. The likelihood of success in these areas is greater because proper hydrology is more likely to be achieved and a seed bank of wetland species may also be present. A more detailed mitigation and monitoring report will be developed as the project proceeds.

Property used for US 31 wetland mitigation will be protected from future development and land use change indefinitely. This protection will be ensured by purchase of fee simple title to the property, or a perpetual conservation easement restricting any alteration of the wetland. Interagency agreements will also be pursued to provide for future management of the mitigation sites following successful wetland establishment. Continued coordination with review agencies will assure that the wetland mitigation sites are suitable and that they are located in areas which assure the greatest potential for successful wetland habitat development.