Appendix A11 – 12 Components of Mitigation Plan Example May 12, 2014

**Compensatory Wetland Mitigation Plan; Hwy 46 near Enderlin;**

**January 9, 2014**

12 required components of 33 CFR 332: *Compensatory Mitigation for Losses to Aquatic Resources:* (some language has been modified but see 33CFR332.4c for original)

1. **Objectives.**

The objective is to create two shallow, seasonal palustrine emergent (PEM) wetlands consisting of a prevalence of herbaceous hydrophytic vegetation. The size of the mitigation areas are 0.51 acre adjacent to the existing 21 acre PEMA wetland 5 and 0.33 acre adjacent to the existing 3.64 acre PEMC wetland 13. The created wetlands will compensate for unavoidable impacts to 0.15 acres of NWI labeled PEMA wetlands (drainage to an unnamed tributary of the Maple River) and 0.51 acres of NWI labeled PEMC (wetland basin which outlets into the Maple River) occurring on highway 46 near Enderlin. The created wetlands will be constructed within the NDDOT right of way along US Highway 46; as such the proposed mitigation is at a 2:1 ratio, with the exception of impacts that will be mitigated at the same wetland impacted which is a 1:1 ratio. *Please see Table 1*. The created wetlands will offset the unavoidable loss of aquatic resource functions, values, and account for a temporal loss of these functions/values of the wetland impacted.

1. **Site selection.**

The NDDOT has confirmed that there is adequate hydrology and space to create on-site and in-kind wetland mitigation within NDDOT permanent ROW. Per the Mitigation Rule, onsite and in-kind mitigation is typically the most preferred permittee responsible form of mitigation. The created wetland areas will be sustained through storm water runoff and spring snow melt runoff. NRCS Web Soil Survey generally indicates soil characteristics at the site near wetland 13 consist of poorly drained soils with a 0-1 percent slope with fine-loamy till soils with a 0-18” water table suitable to creating wetlands. However, onsite wetland delineation indicates upland soils that would be somewhat poorly to well drain.

NRCS Web Soil Survey generally indicates soil characteristics at the site near wetland 5 consists of poorly drained soils with 0-1 percent slope with fine-loamy alluvium soils with a 0-18” depth to water table suitable for wetland creation. However, onsite wetland delineation indicates upland soils that would be somewhat poorly to well drain. In addition, wetland 5 is supported by a dam north of HWY 46 impounding water on top of the hydric soil. This existing enhancement will ensure sufficient hydrology to support an additional 0.57 acres of wetland creation adjacent to wetland 5.

All impacts and mitigation are within the Red River Basin RSA.

1. **Site protection instrument.**

The mitigation site is located within the NDDOT's permanent ROW. The mitigation site will be protected in perpetuity. In the event of highway abandonment, the terms of the permit and mitigation will be transferred to the receiving property owner.

1. **Baseline information.**

An on-site wetland determination was conducted. The mitigation site vegetation is above the existing adjacent wetland and dominated by upland vegetation typical on NDDOT ROW. The area does not have a cropping history. The upland area will be converted to wetland with hydrology driven by spring snowmelt and storm water runoff. .

1. **Determination of credits.**

Credit ratios were determined using the *Wetland Mitigation Banking in North Dakota – Interagency Guidance for Mitigation Bank* document. Of the .68 acres of permanent impact, 0.66 require mitigation. 0.18 acres of permanent wetland impacts will be mitigated at a 2:1 ratio (at wetland 5) and 0.48 acres will be mitigated at a 1:1 (at wetlands 5 and 13) to offset 0.66 acres of permanent impacts requiring mitigation identified as wetlands 5 and 13.

**Table 1: Wetland Credit Ratios and Credit Calculation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | | |  |  |
| **Adjacent Wetland Number** | **Permanent Wetland Impact (acre)** | **Wetland Classification** | **Mitigation Type** | **Acre-Credit Ratio** | **Acres Created** |
| 5 | 0.15 | PEMA | Creation | 1:1 | 0.15 |
| 13 | 0.51 | PEMC | Creation | 1:1 | 0.33 |
|  |  |  |  | 2:1 | 0.36 |
|  |  |  |  | **Totals** | **0.84** |

1. **Mitigation work plan.**

Six created wetland parcels will be constructed by excavating and grading a variable depth up to 1.5 feet maximum depth depressional area adjacent to the existing wetlands 5 and totaling 0.84 acres. The areas will be graded with a gradual transition from the 1.5 foot depth to the existing grade and contours of the adjacent uplands surrounding the mitigation site. Wetland soils are from permanently impacted areas may be used at the creation site with the final grade matching the existing wetland. If wetland soil is not available, the following wetland seed mix will be used:



All disturbed areas will be seeded with upland warm and cool season grasses the typically occur these soils. Existing seeds and root matter in the donor wetland topsoil will vegetate the creation areas. If wetland topsoil from the donor wetland is stockpiled more than 30 days the contractor will seed the creation with the above wetland seed mix. BMPs will be installed to prevent erosion and sedimentation within the site. All BMPs will be removed from the mitigation site upon the establishment of vegetative cover. After completion of the mitigation site designated photo points will be developed. Monitoring reports will be provided yearly until success criteria are met. As-built plans will be submitted to the USACE only if changes in the design plan occur.

1. **Maintenance plan.**

The site will be maintained along with the adjacent road right of way. This section of highway is mowed periodically from the edge of pavement to the toe slope of the road grade by NDDOT maintenance staff. The balance of the right of way may be hayed by the adjacent landowner. No haying restrictions will be placed on this site. Noxious weeds will be controlled by NDDOT staff or a certified pesticide applicator. The site will be maintained to meet the success criteria outlined in the performance standards.

1. **Performance Standards**

Wetland – Success criteria will be met when the hydrology exists at the site for sufficient time periods to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Performance standards are met when the mitigation meets wetland criteria for hydrology and hydrophytic vegetation as defined in the 1987 Corps of Engineers Wetland Delineation Manual and Great Plains Regional Supplement (Version 2.0).

Buffer – No buffer credits are proposed due to ROW restrictions at this location; however, all disturbed terrestrial areas will be reestablished with permanent native grass cover, as described in the mitigation work plan above. No buffer performance standards are necessary.

1. **Monitoring requirements.**

|  |  |  |
| --- | --- | --- |
| Impacted Wetland No. | Impact Requiring Mitigation (acre) | Mitigation (acre) |
| 5 | 0.15 | 0.51 |
| 13 | 0.51 | 0.33 |
| TOTAL | 0.66 | 0.84 |

1. **Performance standard:** The 0.84 acre mitigation area must successfully meet wetland criteria, as defined in the *1987 Corps of Engineers Wetland Delineation Manual* and *Great Plains Regional Supplement (Version 2.0).*
2. **Monitoring Requirements:** The NDDOT shall submit a mitigation monitoring report to the NDRO at the end of each of the first three growing seasons occurring immediately following construction of the mitigation site and a final report following the end of the fifth growing season. Onsite monitoring shall be conducted from June 15th to the end of the growing season. This requirement may be waived, extended or modified depending on the success of wetland development. The monitoring reports shall include the following:
3. Corps of Engineers Permit Number (NWO-2006-60322-BIS).
4. Name and contact information of permittee, point of contact and consultant (if one is used), as well as the dates the inspection(s) was conducted.
5. Directions to the mitigation/project site.
6. Log or timeline reflecting the construction and development of the compensatory wetland mitigation, including the completion date for construction of all mitigation, remedial actions (if any), plantings, monitoring dates, etc., as well as the date the site meets full success criteria (meeting all performance standards).
7. Photographic and narrative summary of the mitigation site’s development, specifically including the following:
8. Photographs of the mitigation site prior to construction, encompassing the entire mitigation area.
9. Photographs and narrative summary of the mitigation site’s progress and development into meeting wetland criteria as identified in the Great Plains Regional Supplement to the 1987 Manual.
10. Photographs taken from a minimum of two fixed points and directions for each wetland mitigation area. Photo location and points must be sufficiently spaced to provide visual depiction of the entire site’s development.
11. Photograph(s) and description(s) of problem areas, if any are identified.
12. Recommendations for any additional corrective or remedial actions (if needed).
13. A wetland delineation map identifying proposed wetland mitigation boundary and actual wetland boundary.
14. Monitoring requirements may be waived by the NDRO once performance standards are met or a determination is made that the site adequately offsets the authorized impacts.
15. **Reports shall be sent to:** North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota, 58504.
16. **Long-term management plan.**

The NDDOT will continue to management the site with noxious weed control, periodic mowing, and litter removal along with the adjacent road right of way. Repairs will be to the original construction specification. The NDDOT will inform the USACE if any corrective measures are needed.

1. **Adaptive management plan.**

The NDDOT will continue to management the site with noxious weed control, periodic mowing to reduce litter accumulation, and repair of any structures to original construction specification. The NDDOT will inform the USACE of any adaptive management needs

1. **Financial assurances.**

The NDDOT receives an allocation from the North Dakota Legislature on biennium basis for road development and maintenance. Historically the NDDOT has allocated $0.5 million annually for wetland mitigation development, management and monitoring.