

## PART B: WETLAND BANK PLAN SUPPLEMENT

### APPENDIX 1: DESIGN AND CONSTRUCTION PLAN REQUIREMENTS

**NOTE: IN ACCORDANCE WITH M.S. 326.02, IT IS UNLAWFUL FOR ANY PERSON TO PRACTICE, OR OFFER TO PRACTICE, PROFESSIONAL ENGINEERING SERVICES UNLES SUCH PERSON IS QUALIFIED BY LICENSURE OR CERTIFICATION.**

Refer to the "[Minnesota Wetland Restoration Guide](#)" and NRCS "[Conservation Practice Standard 657 – Wetland Restoration](#)" for guidance and assistance in completing this appendix.

1. **DEFINITION OF EXISTING CONDITIONS:** Provide information defining the existing site conditions, including but not limited to:
  - a) A copy of a U.S. Geological Survey 7.5-minute quadrangle sheet(s), or other appropriate map showing the location of the proposed bank site and the delineated drainage area(s) that provide surface and/or subsurface runoff into the proposed wetland area(s);
  - b) Topographic base map(s) of the project area (as required in Part A of the application);
  - c) Information about drainage history in the project area. Include maps of drainage systems where applicable.
  - d) Identification of any existing easements within and adjacent to the project area (e.g. road, pipeline, power line, drainage, communication, or access easements);
  - e) Information about current land use in the project area and its watershed; and
  - f) Information regarding soils in the project area, including a copy of a soils map from a published County Soil Survey, with the associated symbols legend and scale. If the project involves a created wetland, include any additional soils information necessary to determine the capability of the site to produce and maintain wetland characteristics.
2. **DESIGN REPORT:**
  - a) Provide a detailed description of the proposed work to be performed for each wetland area to be restored or created;
  - b) Discuss the capability of the site to produce and maintain wetland characteristics (credits) related to drainage area, wetland area, soils and topography;
  - c) Information about locations, methods and results of any subsurface investigations and analysis performed for the project site;
  - d) Discuss the hydrologic and hydraulic analyses conducted to define existing site conditions and to design the proposed wetland bank project. With the exception of those wetland sites being restored through vegetative means only, all wetland bank projects must evaluate hydrology and hydraulics and report the following:
    - i. Methods of analysis, values used for pertinent variables and computed peak flows and water surface elevations for the 2-year, 10-year, 25-year and 100-year, 24-hour runoff events, and associated wetland storage volumes;
    - ii. Hydraulic design of existing and proposed water control structures;
    - iii. Discussion of both upstream and downstream impacts; and
  - e) Provide an estimate of costs to implement the construction component of the proposed wetland bank project.
3. **CONSTRUCTION PLANS AND SPECIFICATIONS:** The construction plans and specifications should define the kind, scope, quantity and specifications of construction to be accomplished for the wetland bank project. The construction plans may either be hand drawn or computer generated, so long as they present all necessary information clearly, accurately and in adequate detail. The construction plans and specifications shall include, but not be limited to:
  - a) Plan view drawing(s) (i.e. plan map(s)) of the wetland bank project site, drawn to scale, identifying existing topographic conditions and proposed modifications for all construction elements. The plan map(s) are a critical component of a wetland bank application. Good quality plan map(s) enable efficient bank application review. Poor quality plan map(s) can result in project delays and increased costs, or otherwise jeopardize the project. Typically, the existing conditions base map and associated information required in item 1.b. above should be used as a base for the construction plan map(s). The construction plan map(s) must also include:
    - i. A project location map;
    - ii. Detailed layout and plan dimensions of all proposed construction elements;
    - iii. Topography of any adjacent lands that could be affected by the project;
    - iv. Location of an access route and/or easement from a public road, if needed.
  - b) Profile and detail drawing(s) of all proposed construction elements, such as dikes, channels, water control structures, subsurface tile modifications, etc., including dimensions, elevations and grades, as applicable;
  - c) Construction notes on plans, as needed, to help ensure complete and accurate interpretation of the drawings and to supplement the construction specifications; and
  - d) Construction materials and methods specifications.
4. **CONSTRUCTION INSPECTION AND CERTIFICATION PLAN:** Attach a "*Construction Inspection and Certification Plan*" that includes the names, roles and qualifications of inspector(s) and certifying individual(s), as well as the categories of construction work to be inspected and timing/frequency of inspection.

*When necessary, per Minnesota Statutes § 326.02, all plan sheets, specifications, hydraulic analyses/design reports, and drawings must be dated and signed by the preparer.*

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## APPENDIX 2: VEGETATION ESTABLISHMENT AND MANAGEMENT PLAN REQUIREMENTS

1. **SITE PREPARATION:** Describe in detail how the site will be prepared for seeding or planting. The site preparation description should include sections specific to the following:
  - a) Soil and seedbed preparation plans (e.g. disking, raking, clearing or grubbing, mowing, cutting, etc.);
  - b) Invasive or exotic species control methods employed prior to planting or seeding (e.g. herbicide application, controlled burn, etc.); and
  - c) Schedule of site preparation activities.
 Refer to "[Guidelines For Restoring And Managing Native Wetland Vegetation](#)" for additional site preparation information

2. **SEED MIXES AND PLANT MATERIALS:** Include information about all seed mixes or plant materials to be used for the project. This description should include information about the seed and/or plant supplier and the origin of the plant materials to be used. Seed and plant materials should be selected specifically for the plant community zones identified in the wetland plan and should be representative of a native, non-invasive community typical of the area. It is recommended that origin certified (Minnesota Yellow Tag) seed be used whenever possible for wetland bank projects. Refer to "[Guidelines For Restoring And Managing Native Wetland Vegetation](#)" publication located on the BWSR web site for additional information about the BWSR recommended seed mixes.

**(NOTE: RETAIN ALL SEED TAGS PROVIDED BY THE SUPPLIER)**

The seed mixes included in "[Guidelines For Restoring And Managing Native Wetland Vegetation](#)" have been formulated specifically for wetland banking purposes and are highly recommended by BWSR, but not required. The BWSR recommended mixes contain a diverse association of grasses, forbs, and other species of varying successional stages; and when installed correctly they have a high likelihood for successful establishment. It is recognized that the BWSR recommended seed mixes may not work in every situation; however, the mixes were formulated to be applicable in most regions of the state. It is also recognized that seed supply and availability is variable and that substitutions may be necessary. When substitutions are necessary, or when modifications to the BWSR recommended seed mixes are needed, care should be taken to assure that a substituted species has similar characteristics to the replaced species (i.e. same indicator status, growth form, and successional stage).

3. **SEEDING/PLANTING ZONE MAP:** Include a Seeding/Planting Zone Map. The seeding/planting zone map should clearly show where the various materials will be planted on the bank site, and be labeled consistent with the planting zones identified in Table 1. The base for this map can be either an air photo (of sufficient scale to show detail) or the topographic map requested in Appendix I of this Part B. Label the map "[Seeding/Planting Zone Map](#)". See an example of a Seeding/Planting Zone Map at [www.bwsr.state.mn.us/wetlands/wcamanual/index.html](http://www.bwsr.state.mn.us/wetlands/wcamanual/index.html).
4. **SEEDING/PLANTING METHODS:** For each seeding/planting zone and for each seed mix used, describe how the materials will be planted (e.g. hand planted, native seed drill, broadcast, hydroseeding, etc.) and at what rate the materials will be planted (e.g. 5 plants per square foot, 15 pounds PLS per acre, 175 PLS seeds per square foot, etc.). Summarize the seeding/planting information in a table similar to Table 1 below.

Because the seed of many common wetland species are from two to five times smaller than seed used in upland plantings, broadcasting wetland seed with smaller equipment or hand-held equipment is often recommended. Mulching may also need to be included as part of a planting plan. Refer to "[Guidelines For Restoring And Managing Native Wetland Vegetation](#)" for additional information about seed and plant materials as well as planting methods.

**Table 1: Vegetation Establishment and Management Plan Summary.**

Planting Zone <sup>1</sup>	Area Planted (acres)	Seed/Plant Mix <sup>2</sup>	Seeding/Planting Method <sup>3</sup>	Seed/Plant Rate <sup>4</sup> (PLS seeds/ft <sup>2</sup> )
1				
2				
3				
4				
5				

Example

<sup>1</sup> Show planting zones on a seeding and planting zone plan and include in Appendix 2.  
<sup>2</sup> Include additional details about the seed/plant mixes in Appendix 2.  
<sup>3</sup> Describe the planting method to be used (e.g. Truax drill, broadcast seeding, hand planting, etc.).  
<sup>4</sup> Record seeding rate in PLS seeds/ft<sup>2</sup> to eliminate variation in weight due to cleaning methods.

5. **VEGETATION MAINTENANCE:** Identify maintenance and aftercare activities planned for the initial five (5) years of the project (e.g. mowing, herbicide application, etc.). Include an inspection schedule and identify specific items to be monitored as well as a contingency plan for any corrective measures that may be required during the five-year monitoring period. Refer to "[Guidelines For Restoring And Managing Native Wetland Vegetation](#)" for additional information about vegetation maintenance and site management.
6. **SCHEDULE OF ACTIVITIES:** Include a schedule of activities for the seeding, planting, and maintenance practices identified above. The schedule of activities can refer to a month or season if necessary.

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## APPENDIX 3: SUMMARY OF EXISTING WETLANDS AND CREDITS EXPECTED

1. **WETLAND DELINEATION:** If existing wetlands were identified on the bank site in Part A of this application, a formal wetland delineation must be completed on the bank site. Any and all existing wetlands on the bank site must be delineated in accordance with the Corps of Engineers 1987 Wetland Delineation Manual prior to receiving approval of the wetland bank plan application. Include the following information when a formal wetland delineation is required:
  - a) Wetland delineator name and company/affiliation;
  - b) Date the wetland delineation field work was completed and;
  - c) All relevant wetland delineation information, including:
    - i. Delineation report;
    - ii. Wetland determination report;
    - iii. Analysis of cropping history, and;
    - iv. Other information necessary.

The delineated wetland boundary must be marked in the field, reviewed and approved by the LGU, and surveyed for inclusion on site plans.
2. **EXISTING WETLAND MAP:** Include a map showing the precise location of all existing delineated wetlands on the project site. The delineated wetland boundary must be marked in the field and surveyed for inclusion on a copy of the topographic base map requested in Appendix I of this part. Label the sheet “*Existing Wetland Map*”. See an example of an Existing Wetland Map at [www.bwsr.state.mn.us/wetlands/wcamanual/index.html](http://www.bwsr.state.mn.us/wetlands/wcamanual/index.html).
3. **WETLAND CREDIT AREAS:** Using the “*Existing Wetland Map*” as the base map, include a drawing or map showing all proposed wetland credit areas on the bank site. Each action eligible for credit area (see part A) should be identified as a separate credit sub-group and labeled consistent with the credit sub-groups and acres listed in item 4 of this appendix. Label the sheet “*Wetland Credit Areas*”. See an example of a Wetland Credit Area Map at [www.bwsr.state.mn.us/wetlands/wcamanual/index.html](http://www.bwsr.state.mn.us/wetlands/wcamanual/index.html).
4. **SUMMARY TABLE:** Include a summary table of the anticipated wetland bank credits as shown below. Summarize the seeding/planting information in a table similar to Table 2 below.

**Table 2: Estimated Credits Resulting from the Proposed Project.**

Credit Sub-Group <sup>1</sup>	Credit Type (NWC or PVC)	Credit Area (Acres)	Wetland Type <sup>2</sup>	Wetland Plant Community Type <sup>3</sup>	Action Eligible for Credit <sup>4</sup>
A.					
B.					
C.					
D.					
E.					
Totals:					

<sup>1</sup> A separate credit sub-group shall be established for each wetland or wetland area that has different wetland characteristics.  
<sup>2</sup> Circular 39 type: 1, 1L, 2, 3, 4, 5, 6, 7, 8, U for upland buffer.  
<sup>3</sup> Wetland Plant Community Type is found in “*Wetland Plants and Plant Communities of Minnesota & Wisconsin*” Second Edition, by Eggers & Reed.  
<sup>4</sup> Reference appropriate subpart section from M.R. 8420.0541 (See item 9 from Part A: Wetland Bank Scoping Document)

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### APPENDIX 4: MONITORING PLAN REQUIREMENTS

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1. **MONITORING REQUIREMENTS:** Minnesota Rules Chapter 8420.0750 Subpart 2, and 8420.0600 to 8420.0630 requires that the applicant shall monitor the easement site after wetland credits are deposited into the State Wetland Bank. The monitoring shall be done on an annual basis and shall continue for a period of five (5) years after deposit, or until the Technical Evaluation Panel (TEP) concludes that the banked wetland area is fully functional. The LGU may, by written notification, extend the annual monitoring period up to an additional five (5) years.
  2. **MONITORING PLAN:** A monitoring plan shall be prepared and included with the Wetland Bank Plan Application. The monitoring plan shall state the goals and objectives of the wetland bank project; summarize how those goals and objectives will be achieved; and how they will be measured. If specific performance standards are linked to credit allocation, the monitoring plan shall also identify these performance standards and summarize how they will be achieved and documented. The monitoring plan shall identify both a schedule for the collection of information, and dates by which each monitoring report shall be submitted to the LGU and BWSR. Applicants may include additional information in the monitoring reports, but in no case may applicants reduce the monitoring requirements. The LGU may require additional information or observations be made and included in the monitoring reports. A sample monitoring plan can be found on the BWSR wetland web site at [www.bwsr.state.mn.us/wetlands/wetlandbanking/](http://www.bwsr.state.mn.us/wetlands/wetlandbanking/).
  3. **ANNUAL MONITORING REPORT:** The applicant/landowner (or successors) will be required to present monitoring results to the LGU and BWSR (note: per M.R. 8420.0750, Subp. 2) in the form of an annual monitoring report. The submittal of these annual monitoring reports is required for future deposit of any additional bank credits. The applicant/landowner (or successors) may contract with a private party or the LGU to conduct the monitoring and prepare the annual reports on their behalf. The LGU may order corrective actions or require an amended plan based on the site inspections and monitoring reports. A sample monitoring report can be found at [www.bwsr.state.mn.us/wetlands/wetlandbanking/](http://www.bwsr.state.mn.us/wetlands/wetlandbanking/). Each annual monitoring report shall include the following information and any other site-specific information identified by the local government unit, including information related to future credit approvals and performance standards:
    - a) A comparison of the as-built project plan versus the plan approved with the application (first annual plan only) and rational for any significant changes;
    - b) A description of the project location, size, and current wetland types (Cowardin classification) compared to planned wetland type (goal);
    - c) Hydrology measurements: seasonal water level elevations or areal coverage measurements during the period April through October;
    - d) A map of plant communities within the boundaries of the banking site, including hydrologic indicators observed;
    - e) A description of actual wetland and upland management activities completed during the past year and activities planned for the upcoming year;
    - f) Color photographs of the project area taken anytime during the growing season; and
    - g) Other information as require by the WCA LGU, including corrective measures or specific performance standards.
  4. **FUTURE MONITORING:** The applicant/landowner (or successor) will be responsible to maintain the wetland bank site in accordance with the terms and conditions of the easement prepared by and conveyed to the State. In addition, the State and/or its agents will regularly inspect the easement area to ensure that the banked wetland continues to substantially meet the specifications in the approved bank plan. As a result of these regular inspections, the State may prescribe corrective measures that must be taken by the applicant/landowner, or LGU, to bring the bank project back into compliance with the banking rule and the state's easement.
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