

Siting of Wetland Mitigation in Northeast Minnesota

Issues, Recommendations, and Alternatives

From the Interagency Northeast Mitigation Siting Team

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Interagency Northeast Mitigation Siting Team Members:

- Les Lemm, Board of Water and Soil Resources
- Dale Krystosek, Board of Water and Soil Resources
- Doug Norris, Department of Natural Resources, Ecological and Water Resources Division
- Kate Paul/Jennifer Engstrom/Colleen Allen, Dept. of Nat. Resources, Lands and Minerals Division
- Mark Gernes, Pollution Control Agency
- Tom Estabrooks, Pollution Control Agency
- Tim Smith, U.S. Army Corps of Engineers, St. Paul District
- Greg Larson, U. S. Army Corps of Engineers, St. Paul District
- Kerryann Weaver, U.S. Environmental Protection Agency Region 5

The primary authors of this report are Les Lemm, Doug Norris, and Tim Smith.

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Executive Summary

Background and Purpose

Problem Statement: *Ongoing and projected impacts to wetlands in northeast (NE) Minnesota are creating high demand for compensatory wetland mitigation. Due to the high prevalence of wetlands and the relative lack of drained wetlands in NE Minnesota, opportunities to meet the demand through traditional mitigation approaches are limited. Improved coordination of federal and state wetland regulatory programs can more effectively address these unique circumstances.*

In recent years, several large off-site wetland replacement projects were completed that focused attention on the need for better direction and implementation of federal and state mitigation policies. These projects did not contribute to the integrity of the impacted watershed, nor were they located in areas where wetland restoration is a high priority. Some questioned whether agency guidelines had been correctly applied. These projects highlighted the need to address issues associated with wetland mitigation in NE Minnesota. The Interagency Northeast Mitigation Siting Team was established in response to this need.

The mission of this interagency effort is to evaluate and reconcile federal and state wetland replacement siting requirements and make recommendations for how best to achieve high quality wetland replacement consistent with watershed needs, the federal Clean Water Act, and statewide wetland goals, while maintaining the ecological integrity of watersheds in NE Minnesota where impacts are permitted. The interagency team identified several recommendations to better achieve and balance these seemingly competing goals.

Wetland Mitigation Search Criteria

Both state and federal regulatory programs require that project proponents demonstrate they have conducted a thorough, watershed-based alternatives analysis for locating compensatory mitigation. These searches extend further away from the authorized impact only when there are no viable mitigation opportunities available, determined by two primary factors: 1) “practicability” and 2) an increase in function of the replacement wetland adequate to compensate for permitted impacts and address watershed needs. One objective of this report is to add clarity to these two factors. Additional agency guidance may be useful in assisting project proposers and regulatory agencies develop a clear understanding of the application of these two factors to potential mitigation opportunities.

Alternative Options for Compensatory Mitigation within NE Minnesota Watersheds

NE Minnesota has experienced fewer wetland impacts compared to other parts of the State. As such, the potential for generating the number of credits required to meet forecasted demand is constrained by both the limited number of potential sites and the amount of credit that these sites could generate.

Despite the relative lack of “traditional” wetland mitigation opportunities such as restoration, enhancement, and creation, there are actions that can be taken to improve and protect the long-term health of northeastern Minnesota’s aquatic resources. These actions are loosely referred to as “alternative” mitigation options. Some of these options are relatively new, while others are currently allowed but have been rarely used or discouraged. Although there may not always be a net gain in wetland *acres* within the watershed where the impact would occur, these alternative options provide an opportunity to target specific aquatic resource *functions* that would benefit the watershed when traditional wetland mitigation opportunities are otherwise not reasonably available.

The following alternative mitigation options are recommended for NE watersheds:

1. Expanded Use of Preservation. Clarify for applicants and staff that preservation is a viable and accepted mitigation option in NE Minnesota and expand eligibility criteria to allow credit for larger amounts of upland areas that provide habitat connections and/or water quality benefits to aquatic resources.
2. Restoration and/or Protection of Riparian Corridors and Streams. Allow mitigation credit for the preservation or restoration of buffers adjacent to trout streams and other sensitive northeast streams, and for stream restoration projects that include such actions as re-meandering lost channels, stream bank stabilization, and day-lighting buried/piped streams.
3. Hydrology Stabilization. Restoring and stabilizing the natural hydrologic regime of altered waterways can restore the functionality of adjacent or nearby wetlands.
4. Peatland Hydrology Restoration. The hydrologic restoration of partially drained peatlands through strategic ditch blocks can improve the affected peatland and provide downstream water quality and quantity benefits.
5. Approved Watershed Plan Implementation Projects. Allow wetland mitigation credit for the completion of certain approved watershed plan implementation projects as a means to address water quality within NE Minnesota.

Replacement Wetland Siting Criteria

Mitigation located in a different major drainage basin than the impact is permissible under current policy when practicable in-watershed options are not available. In those cases, the link to watershed integrity is lost and there is no clear resource-based rationale for the location of the mitigation. To better serve the public interest, the interagency team recommends that state and federal siting criteria be revised to require mitigation in the following sequential order:

1. On-site or in the same minor watershed as the impact.
2. In the same major watershed as the impact.
3. In the same wetland mitigation service area¹ as the impact.
4. In an area of the state designated as high priority for wetland restoration.
5. In another wetland mitigation service area.

Implementing these criteria will require a prioritization of mitigation service areas and changes to current regulations. Specifically, this report recommends the targeting of mitigation through the establishment of priority areas for wetland restoration based on recognized and approved state planning documents. Based on existing statewide plans, for example, priority areas for wetland mitigation generally correspond to the prairie pothole region of Minnesota. The designation of primary, secondary, and potentially even tertiary mitigation service areas with corresponding replacement ratios can provide incentives for replacement in priority areas.

The steps below describe the recommended sequence for siting mitigation of NE MN wetland impacts through project-specific replacement or the use of bank credits, structured as an *example* that satisfies current replacement ratio requirements. Project proponents can only move down the sequence of steps when it has been demonstrated that adequate mitigation opportunities are not available.

- 1) Pursue mitigation for wetland impacts within the MSA in which the impact is located (primary MSA) at a 1:1 ratio. All actions eligible for credit are available, including alternative options other than the “Approved Watershed Plan Implementation Project” option. If adequate mitigation is not available, proceed to step 2.
- 2) Replace wetland impacts in a high priority area (secondary MSA) at a 1:1 ratio, and within the impacted MSA, implement:
 - a. one or more approved watershed plan implementation projects focused on maintenance or improvement of water quality (according to yet-to-be determined credit allocation procedures);
 - b. any alternative options for mitigation credit equivalent to a 0.5:1 ratio; or
 - c. any combination of a and b.
- 3) Replace wetland impacts in a secondary MSA at a 1.5:1 ratio.
- 4) Replace wetland impacts at an increased ratio in an area of the state not designated as high priority.

Other Recommendations for Program Improvement

The report also includes some procedural recommendations, including 1) the establishment of an inventory of siting analyses and potential mitigation sites evaluated, 2) establishing a “rapid response” interagency review team, and 3) the promotion of private wetland banking.

¹ Instead of “bank service area,” the report utilizes the term “mitigation service area” to clarify that the siting criteria apply to project-specific mitigation as well as banking.

Alternative Mechanisms for Providing Compensatory Mitigation

There are alternative mechanisms for accomplishing mitigation that may be more effective in producing outcomes that maximize public value benefits, particularly in instances when wetland mitigation is allowed in a service area other than where the impacts will occur. The two primary options identified are:

1. Northeast Regional Wetland Mitigation Cooperative (Umbrella Bank). Such a cooperative would consist of a partnership between private entities that focuses on establishing in-advance wetland banking credits.
2. In-Lieu Fee Program. As an alternative to the purchase of banking credits or the establishment of project-specific mitigation, a fee is paid to the entity operating the ILF program (a non-federal public entity or a non-profit organization with expertise in the NE and other priority areas) to be used specifically for obtaining the required mitigation credits.

Next Steps

The next steps are for the agencies to review and prioritize the report's recommendations; pursue changes to statutes, rules, and policies where necessary; obtain funding; and implement selected recommendations. Interagency collaboration, public input, and programmatic consistency will be important for successful implementation.

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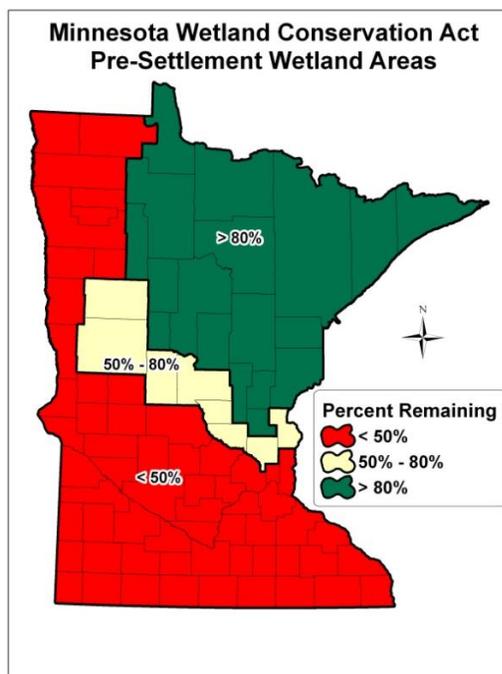
1. Background.

1.1. Problem Statement.

Ongoing and projected impacts to wetlands in northeast (NE) Minnesota are creating high demand for compensatory wetland mitigation. Due to the high prevalence of wetlands and the relative lack of drained wetlands in NE Minnesota, opportunities to meet the demand through traditional mitigation approaches are limited. Improved coordination of federal and state wetland regulatory programs can more effectively address these unique circumstances.

Statewide, Minnesota has lost about half the wetlands that were present prior to European settlement; however the loss has been unequally distributed. Many counties in the southern and western agricultural regions of the state have lost over 90% of their original wetlands, but the NE part of the state still retains most of its abundant pre-settlement wetlands (Figure 1). Wetlands generally comprise from 30% to 80% of the total land area of each of the counties in this region of Minnesota.

Figure 1. Pre-settlement Wetland Areas.



Limited development potential and a high proportion of public land has somewhat constrained wetland loss in NE Minnesota. However, metallic mineral mining has previously eliminated several thousand acres of wetlands and is projected to impact several thousand more acres over the next 30 to 50 years. Mining and transportation related projects have created a significant demand for compensatory wetland mitigation credits, at least partly due to the relatively high abundance of wetlands in the NE. The preferred wetland compensation method is to restore areas that were previously wetland back to their natural condition, but because so few wetlands have been completely drained in the NE region, there are limited opportunities to restore wetlands to offset permitted wetland impacts. The relatively few preferred opportunities that do exist are often complicated by

established drainage rights, effects on upstream landowners, or other technical difficulties. In addition, the overall abundance of both wetlands and public lands can contribute to socio-economic resistance to large wetland restoration projects within the region.

Another challenge to wetland mitigation in NE Minnesota relates to the mitigation process. In general, it is the responsibility of permit applicants to find and develop compensatory mitigation for their proposed impacts. Most permit applicants are not proficient at this task (although some have the

wherewithal to hire consultants having such expertise). This problem is eased somewhat in other parts of the state by the ready availability of banked wetland credits for sale. But fewer wetland banks have been developed in NE Minnesota, often necessitating increased effort by applicants to search for mitigation opportunities, and in some cases ultimately leading to suboptimal mitigation projects.

In recent years, several large wetland replacement projects were completed that focused attention on the need for better direction and implementation of federal and state mitigation policies. Specifically, these projects entailed restoration of large tracts of drained or partially drained wetlands in a different major drainage basin than where the impacts occurred, but in a landscape that already contains a high proportion of wetlands. Thus, these projects did not contribute to supporting the integrity of the impacted watershed, nor were they located in an area where wetland restoration is a high priority, either on a watershed, drainage basin, or statewide basis. Some questioned whether agency guidelines had been correctly applied. These projects highlight the need to address issues associated with wetland mitigation in NE Minnesota.

For the purposes of this analysis, “NE Minnesota” is considered to be existing wetland bank service areas (BSA) 1 and 2 (Figure 2). The BSAs illustrated in Figure 2 are recognized by both the St. Paul District Corps of Engineers for Clean Water Act Section 404 program administration, and by state and local governments under the Minnesota Wetland Conservation Act. In this report, the concept of “mitigation service areas” (MSAs) is introduced to include both banking and project-specific mitigation.

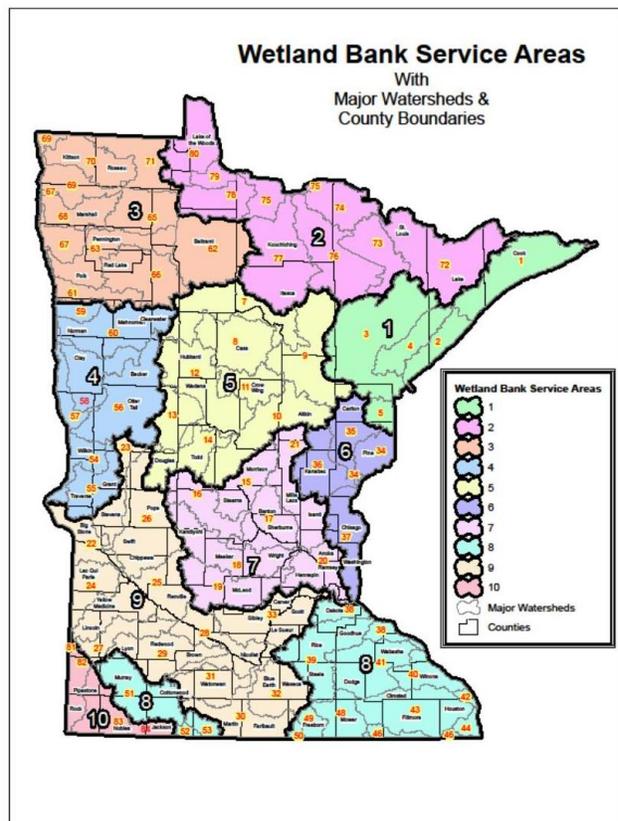
Figure 2. Wetland Bank Service Areas in Minnesota.

1.2. Projected Future Impacts.

According to the DNR Division of Lands and Minerals, metallic mineral mining projects in NE Minnesota are projected to impact an estimated 4,100 acres of wetland over the next 20 years. Of this amount, 1,250 acres already have compensatory mitigation in process or approved. This leaves approximately 2,850 acres needing wetland replacement. Based on past demand, BWSR expects wetland replacement needs associated with transportation and development projects in NE Minnesota to average approximately 120 acres per year (2,400 total). The total demand for wetland mitigation in NE Minnesota over the next 20 years is roughly estimated at approximately 5,250 acres.

1.3. Existing Law and Policy.

Impacts to wetlands in Minnesota are regulated



under both state and federal law as shown in Table 1. Minnesota and federal wetland regulatory programs incorporate a concept of “no-net-loss” of wetlands. All of the regulatory programs require that impacts to wetlands be avoided or minimized to the extent practical, and that unavoidable losses be offset by replacing lost wetland function. Each of the programs stipulate, through statute, rule, or guidance, the types of projects that can provide compensatory credit and the allowable location for compensatory mitigation projects, relative to the impact location.

Table 1. State and federal wetland regulations.

Regulatory Program	Jurisdiction Over	Administered By	Oversight
Minnesota Public Waters Permit Program (PWPP)	Wetlands identified on Public Waters Inventory (PWI) maps (a relatively small proportion of the state’s wetlands)	Minnesota Department of Natural Resources (DNR)	Minnesota Department of Natural Resources
Minnesota Wetland Conservation Act (WCA)	All wetlands in Minnesota not identified on PWI maps, although some activities are exempt from replacement requirements	Local governments (counties, cities, watershed districts, soil and water conservation districts) DNR, for mining projects that require a Permit to Mine	Minnesota Board of Water and Soil Resources (BWSR)
Federal Clean Water Act (CWA) Section 404	Waters of the U.S.	U.S. Army Corps of Engineers, St. Paul District	U.S. Environmental Protection Agency
Federal CWA Section 401	Waters of the State	Minnesota Pollution Control Agency	Minnesota Pollution Control Agency
State Pollution Control and Related Water Quality Regulations	Waters of the State	Minnesota Pollution Control Agency	U.S. Environmental Protection Agency (for CWA jurisdictional waters)

1.3.1. State and Federal Wetland Mitigation Programs and Siting Criteria.

The Federal Clean Water Act (CWA) requires a watershed-based approach to siting compensatory mitigation that is prescribed in federal regulations (33 CFR 325 and 332; 40 CFR 230), in particular the 2008 federal mitigation rule. The St. Paul District has issued guidance for compensatory mitigation in Minnesota for impacts authorized under Section 404 of the CWA². The location of wetland replacement projects under the Minnesota Wetland Conservation Act (WCA), and the Public Waters Permit Program

² U.S. Army Corps of Engineers, St. Paul District. 2009. St. Paul District Policy for Wetland Compensatory Mitigation in Minnesota. 83pp.

(PWPP) which generally must follow WCA standards, is dictated by a mix of watershed-based criteria and administrative boundaries such as counties and pre-settlement wetland zones (Figure 1 and see Minn. Stat. 103G.222, Subd. 3, Wetland Replacement Siting).

In general, all of the programs exhibit a preference for locating compensatory mitigation projects as close as possible to the impact site within the same watershed, under the assumption that nearby replacement is more likely to compensate for the lost wetland functions and more effectively address watershed needs. This assumption is clearly met if appropriate hydrological and landscape conditions are present on-site or nearby that have the potential to result in high quality replacement. However, experience nationwide has shown that this is not often the case, with the frequent result of poor quality replacement wetlands. Consequently, the regulations and agency guidance allow for sequentially expanding the area available for siting wetland replacement to provide greater opportunity to develop high quality projects.

For wetland impacts that occur in NE Minnesota, replacement must follow the respective regulatory programs' sequential siting preferences. However, if practicable opportunities to provide adequate mitigation are not available, the replacement can ultimately be located anywhere in the state under both state and federal regulations. However, as an incentive to find and develop nearby replacement, the amount of required wetland replacement (mitigation ratio) generally increases for replacement projects in a different bank service area than where the impact occurs.

In addition to criteria determining the allowable location of wetland replacement projects, the regulatory programs also identify the types of activities that can generate replacement credit. These activities include restoring completely or partly drained wetlands, creating wetlands by excavation or flooding, enhancing degraded wetlands, and preserving high quality wetlands that are under direct threat of loss or impact. The amount of wetland replacement credit varies depending on the type of replacement activity. For example, fully restoring an acre of completely drained wetland yields up to one acre of replacement credit (1:1 ratio or 100%), while preserving eight acres of at-risk wetland yields only one acre of replacement credit (8:1 ratio or 12.5%). State and federal programs are similar in their crediting ratios, but some differences exist.

Both state and federal regulatory programs prefer the use of banked wetland credits to replace wetland impacts as opposed to project-specific wetland replacement. Banked credits are established in advance of the permitted impact, have been certified as functional wetlands, and often better address landscape and watershed needs. Restored and (especially) created wetlands may take many years to become fully functional and using banked credits for replacement avoids the developmental time lag that is often inherent in project-specific replacement projects. The State Wetland Bank is administered by BWSR and, in addition to gains in efficiency, quality, and certainty, provides a consistent and accurate method for credit accounting in accordance with state and federal no-net-loss goals. Reduced replacement ratios are provided in the regulations as an incentive to use banked (or in-advance) replacement credits. Ten wetland bank service areas, based on major drainage basins, have been established in Minnesota and form the basis for where wetland bank credits can be used and associated replacement ratios (Figure 2).

State and federal programs also have a general preference for replacing wetland impacts with “in-kind” credits, i.e., wetlands of the same type as that impacted or of a type most likely to replace the lost wetland functions. The preference for in-kind replacement is reflected in the mitigation ratios.

1.3.2. Other Relevant Regulatory Requirements.

In addition to the primary state and federal wetland regulations (WCA and CWA), other environmental regulatory requirements can play a role in approving wetland impacts and associated mitigation, as well as the minimization and mitigation of negative impacts to natural resources beyond only wetlands. State water quality rules contain standards for wetland protection and mitigation and are implemented by the Minnesota Pollution Control Agency (MPCA) through various mechanisms, including CWA Section 401 water quality certification and permits under the National Pollutant Discharge Elimination System (NPDES) and State Disposal System. Water quality standards are also implemented on a watershed basis through Total Maximum Daily Load (TMDL) projects administered by the MPCA to address impaired waters. For mining projects, which are a major contributor to wetland impacts in NE Minnesota, the DNR’s permit to mine includes reclamation requirements. The end result of compliance with these requirements can be relevant to the needs of the watershed and priorities for wetland functional replacement.

1.3.2.1. NPDES Permitting Program and State Water Quality Standards.

The Minnesota Pollution Control Agency (MPCA) has delegation authority from the U.S. Environmental Protection Agency to implement permitting actions under the National Pollution Discharge Elimination System Permits (NPDES) as authorized under the Federal Water Pollution Control Act (Clean Water Act of 1976) and State Disposal System (SDS) permits authorized under Minn. Stat. 115.04. NPDES/SDS permits must be obtained prior to discharge of any point source of pollutants into Waters of the State (including wetlands). Several MPCA programs implement NPDES/SDS permitting. These include: municipal and industrial dischargers and stormwater discharges (not including normal agricultural practices discharges which are exempted under the Clean Water Act). All of these NPDES/SDS permitting programs protect surface and ground water and apply state water quality standards (Minn. Rules Ch. 7050). In addition to state water quality standards several rules specify practices and procedures for specific NPDES/SDS programs. These authorities include:

- Minn. Rules Ch. 7001 permitting and certification general procedural rule
- Minn. Rules Ch. 7052 Lake Superior Basin water quality standards
- Minn. R. Ch. 7053 State Waters Discharge Restrictions
- Minn. Rules Ch. 7077 Wastewater and Storm Water Treatment Assistance
- Minn. Rules Ch. 7090 Storm Water Regulatory procedures and permitting program

Minn. Rules Ch. 7050 include general wetland mitigation requirements for any project that would cause permanent physical alteration of wetlands occurring from fill, drainage, excavation or inundation. In addition, Chapters 7050 and 7052 include antidegradation provisions which maintain and protect existing uses and prohibit unnecessary degradation of high quality waters. Wetland mitigation and

antidegradation provisions are applied through MPCA control document actions including NPDES/SDS permits and 401 water quality certifications.

Mining and other industrial facilities must comply with stormwater and industrial permitting requirements. Industrial permits regulate release of pollutants to surface waters. NPDES/SDS industrial permit conditions specify treatment requirements and effluent limits for mine operations and also specify monitoring requirements to demonstrate compliance with state water quality standards (Minn. Rules Ch. 7050) to demonstrate downstream water protection.

Wetland mitigation is necessary to compensate for loss of wetland designated uses in addition to NPDES permitting conditions and controls. These actions, in combination, are each needed to assure watershed water quality protection.

1.3.2.2. Mining Site Reclamation Requirements.

The Minnesota Mineland Reclamation Act was passed in 1969. In 1980, rules were promulgated by the DNR that directed the means by which a Permit to Mine could be issued for iron ore and taconite mining operations. These rules were followed in 1985 with rules for the mining of peat, and in 1993, with rules for the mining of non-ferrous metallic minerals. The Mineland Reclamation Act provides regulatory authority for reclamation of areas subject to mining, such as open pits, waste rock and surface material stockpiles, tailings basins, buildings and equipment, and infrastructure no longer needed for any other use. It also requires site stabilization, revegetation of disturbed ground, and mitigation of impacted wetlands.

Permitting authority for most activities related to mining operations is delegated to the DNR Division of Lands and Minerals. This includes the entire period of operation from mine planning, construction, operation, and reclamation through final closure. Permit requirements for ferrous, peat, and nonferrous mines are described in the Mineland Reclamation Rules Chapters 6130, 6131, and 6132 respectively.

Specifically relevant to mining in NE Minnesota, MN Rule 6130.2200 (see <https://www.revisor.leg.state.mn.us/rules/?id=6130>) includes the following requirements related to the management of runoff from mining areas:

Mining areas shall be managed so that watershed modifications are minimized. Runoff from these areas shall be discharged without injury to life, property, and natural resources. Upon deactivation, any runoff from drainage areas altered by mining shall be discharged into receiving waters within the same watershed as existed before mining. When conditions do not allow discharge into the premining watershed, runoff shall be discharged at locations, and in volumes and rates which can be accepted by the receiving waters without injury to life, property, and natural resources.

The purpose and policy of the mineland reclamation rules (MN Rules Chapter 6130.0200) includes the preservation of natural resources, including water quality and wetlands. The rules include requirements

related to water quality and quantity. Successful reclamation of mining sites requires agency coordination and cooperation to meet established standards for water quality, site stability, vegetation, and wetland mitigation.

For more information on mining site reclamation, contact the DNR Division of Lands & Minerals or see the DNR website at: http://www.dnr.state.mn.us/lands_minerals/mineland_reclamation/index.html.

1.3.3. Nonregulatory Considerations.

Several strategic plans have been produced in Minnesota that can provide direction for decisions relating to the location of wetland compensatory mitigation. These include:

- Minnesota Wetlands Conservation Plan (1997) – Provides statewide and regional management strategies, including identifying regions where wetland restoration is the primary management focus.
- Minnesota Statewide Conservation and Protection Plan (2008) – Provides wetland restoration recommendations, including geographic target areas.
- MnDNR Long Range Duck Recovery Plan (2006) – Provides targets for wetland restoration, including geographic recommendations and local scale grassland/wetland composition guidance.
- Minnesota Prairie Conservation Plan (2011) - Identifies specific areas within the prairie region of Minnesota as high priority for wetland/grassland restoration.
- Wetland Conservation Act Rules – Identify all major watersheds with a majority of their land area contained within counties that have lost 50 percent or more of their presettlement wetland base as high-priority regions for preservation, enhancement, restoration, and establishment of wetlands.³ Local water management plans may also identify high priority areas.

In addition, the Minnesota Clean Water Legacy Act (CWLA) provides state agencies the authority, direction, and resources to protect, restore, and preserve Minnesota's water resources in order to maintain water quality standards as required by the section 303(d) of the Clean Water Act.

2. Mission of the Interagency Team.

In November 2011, the leaders of the Board of Water and Soil Resources, the Department of Natural Resources, and the U.S. Army Corps of Engineers St. Paul District Regulatory Branch met to discuss the issue of wetland replacement in northeast Minnesota. The outcome of this meeting was an agreement to pursue an interagency effort to achieve greater function and benefits from wetland replacement sites that satisfied the requirements of the State Wetland Conservation Act, the DNR's permit to mine program, and the federal Clean Water Act. Following this meeting, an interagency team was established to evaluate the issue, identify and develop alternative solutions, and provide recommendations back to agency leaders that would represent a coordinated and comprehensive approach to issues associated with wetland replacement in northeastern Minnesota. The team included the following State and

³ MN Rules Chapter 8420.0835.

Federal agencies: Board of Water and Soil Resources, Department of Natural Resources Lands and Minerals, Department of Natural Resources Ecological and Water Resources, Minnesota Pollution Control Agency, U.S. Environmental Protection Agency Region 5⁴, U.S. Fish and Wildlife Service⁵, and the U.S. Army Corps of Engineers St. Paul District. The workgroup first convened in March of 2012 and has worked progressively since that time to develop the recommendations contained in this report.

The mission of this interagency effort is to evaluate and reconcile federal and state wetland replacement siting requirements and make recommendations for how best to achieve high quality wetland replacement consistent with watershed needs and statewide wetland goals, while maintaining the ecological integrity of watersheds in NE Minnesota where impacts are permitted. Specifically, this effort addresses the following issues to varying degrees:

- When conducting a search for potential mitigation opportunities, what criteria should be evaluated to identify acceptable⁶ wetland mitigation sites? More specifically, what information should be included in an applicant's evaluation of practicable mitigation sites?
- What level of effort is expected of applicants for each proposed impact to identify acceptable replacement opportunities within each locational step of the siting requirements (minor watershed, major watershed, county, bank service area, etc.)?
- Are there other, nontraditional options available in the region for compensating for wetland impacts?
- How can compensatory mitigation, using both traditional and non-traditional methods, be used to ensure the integrity of the watersheds where authorized impacts occur?
- If a lack of practicable mitigation sites leads to out-of-watershed replacement, where should it be located to best contribute to statewide wetland goals? How do we identify high priority areas for locating mitigation and how do we guide it to those locations?
- Are there administrative/procedural improvements that would lead to more effective and efficient decision-making and better overall compensatory mitigation?
- What changes, if any, to state law or rules and/or St. Paul District Guidance are needed?

The interagency team acknowledges that there may be other concerns outside of the scope of this effort that could benefit from further analysis, but the team's current work is limited to the above issues relating to compensatory mitigation.

3. Guiding Principles.

The agencies agree that continuing the status-quo is an unacceptable outcome for the mitigation of large-scale wetland impacts in NE Minnesota. In general, policies should be supported that improve:

⁴ Staff from the U.S. Environmental Protection Agency were not able to participate directly in all of the workgroup's meetings but provided input to the workgroup throughout the process.

⁵ The U.S. Fish and Wildlife Service was an invited participant but due to staffing limitations was unable to provide regular input to the workgroup.

⁶ In this document the agencies have defined "acceptable" to mean mitigation that adequately replaces the wetland functions lost as a result of the approved/authorized impacts.

1. the clarity of information and expectations for project proponents;
2. communication and coordination between agencies regarding the requirements of regulatory programs;
3. the targeting and focus of mitigation to maximize overall aquatic resource benefits, including projects that may or may not be focused solely on wetlands; and
4. the effectiveness of implementation and compliance.

In developing recommendations to address the general policy goals listed above, the agencies identified several guiding principles that can be used as a framework for developing solutions. In general, the agencies agree that:

- The Team's efforts will only address compensatory mitigation and will not affect other regulatory requirements such as the need to first avoid and minimize wetland impacts.
- Wetland replacement within the watershed of impact is required under the federal mitigation rule and state statute whenever practicable alternatives are available that offset the aquatic resource functions lost as a result of a permitted activity.
- Mitigation opportunities in NE Minnesota are limited by the amount of public land, the extent of aquatic resources that remain from the pre-settlement era, and the limited amount of credit that could potentially be generated from restoration, enhancement, or preservation.
- When practicable opportunities are not available in the bank service area that adequately compensate for wetland impacts, then compensatory mitigation should be pursued in priority areas as identified by the resource agencies.
- Mitigation of impacts to water quality functions must occur within the watershed, and may be accomplished through various mechanisms not limited to wetland mitigation.
- Mitigation site selection is fundamental to obtaining restorable, sustainable wetlands that provide functional benefits adequate to offset the aquatic resource functions lost as a result of a permitted activity.

4. Recommendations.

The Interagency Team has developed several recommendations for addressing the issues associated with compensating for wetland impacts in NE Minnesota. These recommendations focus on: 1) describing and clarifying the evaluation factors for stepping through the wetland replacement siting sequence (i.e., what qualifies as an approvable replacement project and when can applicants move to the next step in the siting sequence); 2) expanding the options available for mitigation in NE Minnesota; 3) revising the wetland replacement siting criteria for impacts in NE Minnesota when it is not practicable to accomplish all of the replacement in NE Minnesota; and 4) developing new or revised procedures or mechanisms for implementation that will assist applicants while achieving better environmental outcomes.

The recommendations are described in detail in the remainder of this section. The recommendations are organized to roughly correspond to the order in which a project proponent would follow when formulating a mitigation plan and not in order of importance. For example, Section 4.1 provides recommendations associated with the site search process, while Sections 4.2 and 4.3 address later stages of the mitigation formulation process (alternative options for generating credits and siting criteria, which can affect replacement ratios, respectively).

4.1. Wetland Mitigation Search Criteria.

State and federal regulatory programs each require that project proponents demonstrate they have conducted a thorough alternatives analysis for locating compensatory mitigation. This process is commonly referred to as “sequencing” since it involves a series of geographic searches that must be undertaken by the project proponent as part of the decision-making process for locating compensatory mitigation. Replacement siting sequencing should not be confused with the “avoid – minimize – replace” sequencing process for gaining approval of proposed wetland impacts, which will remain a requirement. The geographic searches are typically watershed based and extend further away from the watershed of the authorized impact only as the project proponent determines, with supporting documentation, that there are no viable opportunities for compensatory mitigation available within that search area. The St. Paul District defined the sequencing process for the Section 404 program on Figure 2 of their March 9, 2012 public notice. The sequencing process under the Wetland Conservation Act is contained in statute and rule.

The state and federal wetland replacement siting sequencing processes are based on the widely accepted watershed approach and are generally a straightforward application of this process. However, identifying the point at which the project sponsor can move to the next step in the search process and evaluate opportunities in a larger geographic search area is an aspect of the siting sequencing process that warrants further clarification. This is particularly troublesome in NE Minnesota where a project proponent could quickly move through several steps of the sequencing process because there are no available bank credits and very limited opportunities for project-specific mitigation (also referred to as permittee responsible mitigation). The decision to allow an expanded search area relies on two primary factors, “practicability” and the anticipated quality of the replacement wetland as far as compensating for permitted impacts and addressing watershed and/or State watershed priorities.

4.1.1. Practicability

Both the state and federal programs refer to the documentation threshold in the sequencing process as a practicability analysis. The agencies share the definition of “practicable” from the Clean Water Act Section 404(b)(1) Guidelines (Guidelines): “available and capable of being done after taking into consideration cost, logistics, and existing technology in light of the overall project purpose.” This definition was developed primarily for the evaluation of alternatives during the review of permit applications but has also been incorporated into the process for identifying mitigation sites. Recognizing

the importance of practicability to the sequencing process in NE Minnesota, the interagency team attempted to clarify the application of this term to the mitigation process.

Cost considerations. The level of analysis required for determining which mitigation alternatives are practicable will vary depending on the type of project proposed. The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project. Generally, as the scope/cost of the project increases, the level of analysis should also increase. To the extent the agencies have obtained, or have access to, information on the costs associated with similar types and amounts of mitigation, such information may be considered when making a determination of what constitutes an unreasonable expense. For example, information on average prices for bank credits is readily available to the agencies and could be used as a general measure of practicability from a cost standpoint. Additional insight on a cost threshold is provided in the preamble to the Guidelines, “[i]f an alleged alternative is unreasonably expensive to the applicant, the alternative is not 'practicable.'" [Guidelines Preamble, "Economic Factors," 45 Federal Register 85343 (December 24, 1980)]. It is important to emphasize, however, that it is not a particular applicant's financial standing that is the primary consideration for determining practicability, but rather characteristics of the project and what constitutes a reasonable expense for these projects that are most relevant to practicability determinations.

Existing Technology. Although not specifically defined in either the state or federal programs, the Interagency team has defined existing technology in the context of mitigation sites to be institutional knowledge, methodology, and construction equipment necessary to restore, create, or enhance wetlands. Examples of technology in this context include: local/regional expertise, ditch plugs and abandonment, invasive species control, water management, native seed mixes, and sphagnum bog restoration. This definition does not, however, preclude the use of new and innovative technologies and techniques to improve wetland function and sustainability.

Logistics. This factor encompasses all the engineering, planning, legal, and procedural requirements that must be addressed in order to construct a mitigation site. In Minnesota, often encountered logistical constraints include public drainage law, local permitting requirements, flood easements, physical access for construction, timing, and equipment availability. In addition, many good potential mitigation sites have landowners that are simply not interested in such projects. Logistical constraints that cannot be overcome by the project proponent could render a potential site not practicable.

The efforts of the team have clarified some of the complexities associated with the sequencing process. However, additional coordination is needed to further define how the agencies will evaluate sequencing analyses from project proponents. It is also important to provide this information to the public and communicate the documentation requirements for the sequencing process. The recommendation described in Section 4.4.1, “Inventory of Siting Analyses and Potential Mitigation Sites Evaluated” is also aimed at addressing this issue.

Recommendation:

1. Pursue further clarification on sequencing criteria including joint agency guidance on practicability determinations. Additional clarification should build on the analysis completed by the interagency team.

Action Items

1. Review previously completed sequencing reports (in combination with the development of the inventory recommended in Section 4.4.1) and, if applicable, further refine practicability criteria and sequencing requirements.
2. Review agency sequencing guidance and publish updates as necessary.

4.1.2. Quality of Replacement Wetland

In addition to the practicability factors discussed above, the anticipated quality of replacement wetlands is also evaluated by the regulatory agencies in siting sequence decisions. “Quality” can mean different things to different people. However, in the context of wetland mitigation, the definition of “quality” includes a comparison of functional benefits provided prior to and after completion of the project. Both state and federal regulations require that replacement wetlands become, at minimum, fully functional wetlands that are likely to persist indefinitely and that there be sufficient gain in functions to compensate for the permitted impacts. Credit allocation ratios are commonly used as rough surrogates for functional gain.

However, additional factors also enter into the analysis of replacement wetland quality, including the ability to take advantage of natural hydrogeomorphic features, likelihood of takeover by invasive plants, minimizing impacts on existing natural habitats or features, and the extent to which the replacement wetland addresses watershed needs, such as water quality improvement, fish and wildlife habitat, water storage, or recreational/educational opportunities. A wetland restored in one watershed may provide a greater increase in functional benefits and better address watershed needs, thus providing greater value, than a wetland restored in another watershed. Different watersheds have different conditions, have experienced different degrees of development or degradation, and have different needs and potential. As such, “quality” considerations can include locational factors under a watershed approach.

Quality considerations are not completely independent from the practicability factors above, but all else being (relatively) equal, a replacement project that promises to result in a high quality wetland is likely to be favored over one with lesser prospects, even if it is located in an expanded search area under the siting sequence. In this context, quality is additional justification for the prioritization of secondary mitigation service areas.

Recommendation:

1. Improve clarity and consistency among agencies and applicants regarding what constitutes a high quality replacement wetland that is adequate to replace wetlands lost to permitted impacts under current regulations.

Action Items:

1. Develop decision-support procedures for using existing tools and information to better predict functional gain and aid in assessing site suitability.
2. Seek funding to establish long-term monitoring of existing high quality wetlands to provide specific baseline data. Assemble and summarize existing available information as appropriate.

4.2. Alternative Options for Compensatory Mitigation within NE Minnesota Watersheds.

In general, the agencies agree that restoration is the preferred method for generating credit to offset permitted wetland impacts. Restoration typically involves the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a degraded aquatic resource. Restoration activities result in a gain in wetland function and, in many cases, a gain in wetland area (see 33 CFR 332.2 for definitions of re-establishment and rehabilitation). In Minnesota, wetland restoration is often associated with re-establishing natural hydrology in areas that were previously drained.

While there are many opportunities for wetland restoration on a statewide basis, NE Minnesota is somewhat constrained because this region has experienced less drainage compared to other portions of the State. There are some areas in the northeast where large scale drainage efforts were attempted, but these areas were only partially drained (at best) and still meet the wetland criteria established in the Corps manual and regional supplement. The limited number of drainage systems that are relatively effective typically involve drainage rights conferred under Minnesota Drainage Law (MN Stat. § 103E), which often reduces the likelihood that restoration is achievable. In addition, much of NE Minnesota is currently in public ownership, where existing wetlands are already have some level of protection. There simply are not many opportunities for wetland restoration at the scale or credit potential required to offset the potential impacts of anticipated projects.

Despite the relative lack of “traditional” wetland mitigation opportunities such as restoration, enhancement, and creation, the agencies agree that there are actions that can be taken to improve and protect the long-term health of northeastern Minnesota’s aquatic resources. These actions are loosely referred to as “alternative mitigation options.” Some of these options are new to the wetland mitigation discussion in Minnesota while others are allowed under current policies but may be rarely used or discouraged since, when evaluated independently, they may not appear to support a no-net-loss approach to compensatory wetland mitigation or they focus exclusively on specific functions. Although there may not always be a net gain in wetland *acres* within the watershed where the impact would occur, these alternative options provide an opportunity to target specific aquatic resource *functions* that would benefit the watershed when traditional wetland mitigation opportunities are otherwise not reasonably available.

All of the alternative options described below share a similar goal: the restoration and/or protection of natural pre-settlement conditions, with an emphasis on projects that directly or indirectly benefit water

quality functions in watersheds. When evaluated as a component of a comprehensive mitigation package that takes into account the watershed approach, the no net loss approach, and other agency policies and guidance, the agencies agree these alternative options can be acceptable and beneficial mitigation measures that would generate credit. As such, the agencies should explore the potential for targeting broader, alternative options for in-watershed mitigation in NE Minnesota.

While the actions below should be considered, the allocation of compensatory wetland mitigation credit in amounts commensurate with the functional gains provided by each activity will be vital. Accurately correlating functional gains with credit allocation is essential to meeting the goals of State and Federal wetland protection laws. It is assumed that, should these recommendations be pursued, the responsible agencies will determine the appropriate credit allocations for the chosen alternative actions.

4.2.1. Expanded Use of Preservation.

The preservation of important wetlands in NE Minnesota for mitigation credit is currently allowed under both WCA and the St. Paul District mitigation policy. However, preservation is not commonly thought of as a “traditional” mitigation option and is often looked upon as the least preferable alternative. Given the fact that relatively few good restoration opportunities exist in the northeast and that many important, diverse, and even pristine wetlands exist, preservation is an appropriate and important mitigation option.

Upland areas adjacent or connected to wetlands and other water resources are also vital to maintaining the habitat and water quality functions of those resources. Allowing mitigation credit for the preservation of both important wetlands and upland is an essential part of protecting the long-term health of watersheds in the northeast. Priority areas for protection include the upstream reaches of watersheds and riparian areas where a demonstrable threat has been identified.

For example, there is a demonstrable threat to some lake and river fringe wetlands in the northeast from riparian development. Unregulated activities occurring on adjacent upland areas negatively affect wetlands and other aquatic resources, without providing compensatory mitigation. Protecting some of these quality shorelines or adjacent wetland habitats through easement or acquisition should be a priority. Mitigation credit should be allowed for such activities.

Note that the recommendations contained in this section pertain to expanding the use and applicability of preservation, not the amount of credit allocated. Credit allocation for preservation is necessarily low to ensure the long term replacement of wetland function and to minimize the loss of wetland area.

Recommendations:

1. Clarify for applicants and staff that preservation is a viable and accepted mitigation option in NE Minnesota in accordance with current eligibility and credit allocation criteria.
2. Consider expanding eligibility criteria to allow credit for larger amounts of upland areas that provide habitat connections and/or water quality benefits to aquatic resources, particularly in upstream reaches of watersheds and riparian areas.

3. Include in future inventory efforts the identification of areas important for watershed function and integrity that may be candidates for preservation.

Action Items:

1. Modify MN Rule 8420.0526 to allow the allocation of mitigation credit for the preservation of additional upland acres and riparian areas in NE Minnesota. Review the St. Paul District Policy and determine if modifications are needed.
2. Review and update State and Federal guidance on the use of preservation for consistency where necessary.

4.2.2. Restoration and/or Protection of Riparian Corridors and Streams.

Similar to the rationale for preservation outlined above, buffers adjacent to streams provide wildlife and fisheries habitat, reduce thermal pollution, protect water quality, and improve long-term sustainability of the stream resource. The establishment and/or preservation of buffers adjacent to important streams and their tributaries should be allowed wetland mitigation credit, even when they are not directly associated with a wetland restoration project.

In addition, many natural streams have been straightened and channelized, altering the hydrologic and habitat characteristics of the stream itself and adjacent areas, including wetlands. Such altered stream channels are also typically more “flashy” and less stable, affecting the water quality and fluctuation of downstream aquatic resources. Restoring these altered streams back to a natural condition can provide multiple benefits to the watershed, including restoration of the natural hydrologic regime to existing wetlands adjacent to the stream channel.

Recommendations:

1. Allow mitigation credit for the preservation of buffers adjacent to trout streams and other important or sensitive northeast streams.
2. Allow mitigation credit for the restoration of buffers through reforestation activities that improve shading, habitat, or water quality of trout streams and other important or sensitive northeast streams, including impaired streams with an established TMDL.
3. Allow mitigation credit for stream restoration projects that include such actions as re-meandering lost channels, stream bank stabilization, and day-lighting buried/piped streams.

Action Items:

1. The agencies should collaborate to establish specific criteria to implement the above recommendations, including the amount of mitigation credit to allocate to such actions.
2. Modify MN Rule 8420.0526 and St. Paul District Mitigation Policy as needed to allow mitigation credit in NE Minnesota for the preservation and establishment of stream buffers, and for stream channel restoration and protection activities, in accordance with the agencies’ established criteria.

3. Develop consistent programmatic guidance for implementation of the credit allocation mechanisms described in Rule/Policy.

4.2.3. Stabilization of Natural Hydrology.

In some cases, the hydrology of existing wetlands and streams can be indirectly impacted by other activities. For example, ditching, stream channelization, or other hydrologic modifications can change the hydrologic regime of adjacent or nearby wetlands in addition to the resource directly affected. As a result, aquatic systems often experience more dramatic water level fluctuations or reduced hydrologic persistence. Restoration of the natural hydrologic regime can restore functionality and stabilize the hydrology of existing nearby wetlands. In such instances, compensatory mitigation credits may be generated through the stabilization of natural hydrology. It is important to be clear that the intent of this recommendation is not to build dams and impoundments or to change natural hydrology fluctuations of non-degraded wetlands, but rather to restore and stabilize unnatural fluctuations in degraded wetlands caused by human activities.

Stabilization of hydrology alone best fits “enhancement” as a type of compensation credit under the Clean Water Act. The Corps’ St. Paul District Mitigation Policy defines enhancement as activities that heighten, intensify, or improve a specific function of an existing wetland. Generally, up to 3:1 (33%) wetland credit can be earned from enhancement activities, with the actual amount of credit allocated based on the extent of functional gain to the existing wetland.

Under the Wetland Conservation Act, stabilization of hydrology could fit the “restoration of partially drained or filled wetland areas” action eligible for credit, which typically allows credit for up to 50% of the wetland area restored. According to the current WCA Rule, replacement credit can be allocated for activities that restore both the natural hydrology regime and native, noninvasive vegetation of wetlands that have been degraded by prior drainage, filling, or a diversion of the natural watershed. In some instances, stabilization of hydrology could potentially also be allocated credit under the “restoration and protection of exceptional natural resource value” (ENRV) action. See BWSR ENRV Guidance at www.bwsr.state.mn/wetlands.

Portions of enhancement projects sometimes include areas that have been drained, such as the margins of a wetland where the outlet has been lowered. Under both federal and state rules, up to 1:1 (100%) credit can be allocated for the restoration of areas that have been completely drained. The stabilization of hydrology could potentially be one component of a larger restoration project. Projects comprised of one or more means of compensation credit are common and the resultant credit amount is based on the types of credit and their respective contribution to overall improvement of wetland function.

While credit may be allocated for the stabilization of natural hydrology as described above, it may not be commonly understood among agency staff and project proponents. In addition, such projects would tend to be complex and appropriate credit allocation difficult.

Recommendation:

1. Provide clarification that the stabilization of natural hydrology is eligible for compensatory mitigation credit under both State and Federal policy, and may be particularly relevant in northeast watersheds.

Action Item:

1. Review existing agency guidance for changes or additions, and develop new guidance as needed.

4.2.4. Peatland Hydrology Restoration.

Significant regions of Minnesota's vast peatland wetlands in northern MN, typically bog type peatlands, were ditched late in the nineteenth and early twentieth centuries, mostly in an attempt to convert these areas to agricultural uses. In part, due to the absorbent and high moisture retentive characteristics of peat, drainage was typically not successful and resulted in minimal drainage effectiveness. Today, the majority of the partially drained peatlands are still wetland. Primarily due to the relative ineffectiveness of these past drainage efforts, peatland restoration is typically not thought of as a traditional wetland mitigation opportunity. However, though past ditching did not effectively convert these peatlands to non-wetland, it is likely the drainage had significant effects on peat quality, water quality, and peatland hydrology in many instances. Past drainage also may have affected the carbon sequestration function of many peatlands. The restoration of peatland hydrology through strategic ditch blocks can improve the affected peatland and provide downstream water quality and quantity benefits.

Similar to the stabilization of hydrology described above, peatland hydrology restoration best fits "enhancement" as a type of compensation credit under the Clean Water Act, and the "restoration of partially drained or filled wetland areas" or "Exceptional Natural Resource Value" actions eligible for credit are the most fitting under WCA. However, due to the ineffectiveness of past drainage efforts and the general state of disrepair of the remaining drainage systems, the hydrologic effects on peatlands can be subtle and even unrecognizable without detailed study. As such, peatland restoration is not often thought of in the context of generating compensatory wetland mitigation credits.

As with other actions eligible for credit, the amount of credit allocated must match the functional benefits gained from the action. In the case of peatland restoration, the effectiveness of the drainage system and its influence on adjacent peatlands should be considered in the agencies' determination of appropriate credit allocation amounts. In addition, agencies and project proponents should be aware that land ownership (often State), the existence of public drainage systems (MN Stat. 103E), and other factors can often complicate peatland restoration options.

Recommendation:

1. Provide clarification that the restoration of peatland hydrology through strategic ditch blocks is eligible for compensatory wetland mitigation credit, and that it may be particularly relevant in NE Minnesota.

Action Item:

1. Pursue a functional evaluation of drained peatlands on a larger, watershed context to estimate the potential benefits from available restoration actions.
2. Review existing agency guidance for changes or additions, and develop new guidance as needed. The guidance should address the process for assessing peatland restoration potential, restoration techniques, credit allocation, and issues relating to ownership and drainage rights.

4.2.5. Approved Watershed Plan Implementation Projects.

The ultimate goal of the watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation options and sites. In cases where an approved watershed plan is available, the agencies will determine whether implementation of the plan, or select components of the plan, is appropriate for use in meeting mitigation requirements for authorized impacts. The plan must have been developed to strategically address management of aquatic resources within a defined watershed area and must also identify specific implementation projects that benefit the overall ecological functioning of aquatic resources. Plans that contain only general statements about watershed needs and opportunities will be of limited value when formulating mitigation plans in a permitting framework.

Examples of potentially acceptable watershed plans developed by regulatory and non-regulatory programs include Total Maximum Daily Load (TMDL) implementation plans, Watershed Restoration and Protection Strategies,⁷ resource management plans, basin plans, local water plans, and habitat conservation or improvement plans that identify specific implementation activities to improve the quantity and/or quality of aquatic resources. Actions that may not be specifically contained in the plan, but have been identified by the government entity responsible for implementing the plan as consistent with the plan's goals and objectives can be considered as well. Watershed plan implementation actions receiving wetland mitigation credit must be completed entirely with non-public funds.

Recommendation:

1. Allow compensatory wetland mitigation credit for the completion of certain approved watershed plan implementation projects.

Action Items:

1. Evaluate current State and Federal policies for potential amendments necessary to allow the allocation of wetland mitigation credit and to promote effective wetland planning efforts via existing planning mechanisms.
2. Pursue policy changes (if needed) and develop corresponding guidance for implementation and credit allocation.
3. Identify and evaluate watershed plans in BSAs 1 and 2, and compile a list of agency approved plans.

⁷ Minn. Stat. § 114D.15, Subd. 13.

4. From the list of approved plans, identify specific measures that could be used as components of a compensatory mitigation package for authorized impacts in BSAs 1 and 2.

4.3. Replacement Wetland Siting Criteria.

The goal of compensatory mitigation is to replace the functions and values lost from unavoidable wetland impacts, particularly on a watershed basis. Current state and federal replacement siting criteria incorporate a sequential preference for locating wetland replacement based on increasingly large watershed units. However, for impacts in NE Minnesota, mitigation located in a different major drainage basin than the impact is ultimately permissible under current policy if practicable in-watershed replacement options are not available. In those cases, the link to watershed integrity is lost and there is currently no clear resource-based rationale for the location of the replacement. To better serve the public interest, the interagency team recommends that state and federal wetland replacement siting criteria for NE Minnesota be revised to require replacement in the following sequential order:

1. On-site or in the same minor watershed as the impact.
2. In the same major watershed as the impact.
3. In the same wetland mitigation service area as the impact.
4. In an area of the state that has been designated as high priority for wetland restoration.*
5. In another wetland mitigation service area.

*The agencies will base their designation on accepted resource-based conservation or restoration plans and related information as appropriate. For example, some existing plans, listed in Section 1.3.3 of this report, have identified the prairie pothole region of Minnesota as a general high priority region. Additional or more specific areas may be recognized as high priority for restoration as other plans are reviewed and accepted by the agencies.

Currently, both the State and Federal programs utilize bank service areas and ratios as a surrogate for functional replacement of permitted impacts. Under the proposal in this report, if there were no practicable mitigation opportunities within the bank service area where the impact occurred, the project sponsor would have alternative options available for the mitigation action and location. For clarification, the report also recommends using the term “mitigation service area” (MSA) to include both forms of mitigation available to project proponents: project-specific or permittee-responsible mitigation and mitigation banking. MSAs are equivalent to the bank service area boundaries currently recognized by the agencies.

The conceptual framework described in this report utilizes current replacement ratios. However, expanded mitigation actions would be available within the NE area (see Section 4.2) as options to primarily address water quality functions lost as a result of the permitted activity. The varied mitigation options combined with current replacement ratios would provide incentives for siting mitigation in priority areas and maintaining watershed integrity in NE Minnesota. Additional targeting of priority areas could be accomplished through ratio incentives alone, a specific search-sequence requirement, or a combination of both.

Achievement of the resource and public value benefits necessary to adequately replace wetlands impacted in NE Minnesota will require a prioritization of mitigation service areas and a change in the current siting criteria and incentives. Specifically, this report recommends the targeting of mitigation through the establishment of primary and secondary service areas. The primary service area is the service area in which the impact is located, while secondary service areas will correspond to the State's priorities as outlined in recognized and approved state planning documents. Each category can be assigned a corresponding replacement ratio which will provide a greater incentive for replacement in priority areas. The regulatory agencies will need to determine MSA priorities, however, a variety of existing state-wide natural resource or wetland plans have identified high priority areas of the state for wetland restoration (Section 1.3.3). These areas generally coincide with the prairie pothole region of Minnesota. Additional, tertiary, or alternative secondary service areas could be determined based on current BSAs, major watersheds, ecoregions, historic wetland loss, current conditions, and/or other such criteria or combinations of criteria. Establishment of such areas should be based on a sound resource-based rationale and developed through interagency coordination and agreement for consistency.

The recommended approach for implementing the prioritization concept within NE Minnesota is provided below. It is applicable to both project-specific replacement and the purchase of bank credits. Project proponents can only move down the sequence of steps when it has been demonstrated that adequate mitigation opportunities are not available. As described here, this *example* generally uses current search criteria and ratios but includes the concepts of secondary MSAs and alternative options for mitigation credit.

- 1) Pursue mitigation for wetland impacts within the MSA in which the impact is located (primary MSA) at 1:1 ratio. All actions eligible for credit are available, including alternative actions, except the "Approved Watershed Plan Implementation Project" option (see Section 4.2.5). If adequate mitigation is not available, proceed to step 2.
- 2) Replace wetland impacts in a high priority area (secondary MSA) at a 1:1 ratio, and within the impacted MSA, implement:
 - a. one or more approved watershed plan implementation projects focused on maintenance or improvement of water quality (according to yet-to-be determined credit allocation procedures);
 - b. any alternative options for mitigation credit equivalent to a 0.5:1 ratio; or
 - c. any combination of a and b.
- 3) Replace wetland impacts in a secondary MSA at a 1.5:1 ratio.
- 4) Replace wetland impacts at an increased ratio in an area of the state not designated as high priority.

Completion of the details may benefit from further discussion, stakeholder input, and consideration by the agencies as appropriate. These details may include the utilization of ratios as incentives to replace in priority areas; more specific targeting of priority areas for mitigation; whether or not, or under what circumstances, mitigation could be allowed outside of the primary or secondary service areas; and/or other implementation options. However, consistency between WCA and the CWA is essential.

Alternatively, if an In-Lieu Fee program is established, it can provide another option for achieving the goals discussed in this report (see Section 5.2). As discussed here, an ILF program would implement the same (or similar) siting sequence as identified above.

4.4. Other Recommendations for Program Improvement.

4.4.1. Inventory of Siting Analyses and Potential Mitigation Sites Evaluated.

In general, state and federal wetland regulatory programs require applicants to first search for mitigation sites close to the impact site before allowing the mitigation to move farther away, outside major watershed or bank service area boundaries. Given the relatively small amount of mitigation opportunities in northeastern watersheds, sites that are “possible” but not feasible to restore may be considered in multiple mitigation proposals. Reviewing the same sites is a waste of time and resources for applicants, and does nothing to encourage the discovery of quality sites that may in fact be feasible.

Improving the tracking of sites considered can help applicants focus their search efforts and can help provide justification for out-of-watershed mitigation when feasible opportunities are not available locally. It can also identify quality sites that may not be feasible only because of current landowner interest or timing – these sites can be considered again as their availability can change. Information requirements would be very basic – consistent with the early scoping phase of mitigation project review – but sufficient to track whether it is a good site or not, why it may not be feasible or practicable, and which sites can be “crossed off the list” vs. those that could warrant future consideration. The information can be obtained through actual scoping reviews, permit application submittals, and separate inventory efforts.

This inventory will help applicants in their search for wetland mitigation sites and agencies in determining the availability of potential mitigation sites within specific watersheds.

Recommendation:

1. Establish an electronic database and repository to archive siting search documents and to maintain a running inventory of potential wetland mitigation sites that have undergone some initial scoping review in the northeast, including basic relevant information on each.

Note: This recommendation is similar to one of the recommendations from the *Northeast Minnesota Wetland Mitigation Inventory & Assessment Report*, which recommended the establishment of a “wetland mitigation opportunity registry” in which landowners could advertise their property and interest in wetland mitigation. The primary difference is that this recommendation takes an additional step – where the inventory is not just a registry of “possible” sites based primarily on landowner interest, but a database of information on the quality, feasibility, and practicability of possible sites.

Action Items:

1. Develop a framework for the database and its usage, including establishment and operating cost estimates. Explore options to utilize or expand existing systems, such as the DNR online permitting platform or the BWSR wetland banking map tool.
2. Determine agency responsibilities and pursue funding for establishment of the database.

4.4.2. “Rapid Response” Interagency Review Team.

Changes are needed to the current project review process to obtain higher quality wetland mitigation. The establishment and utilization of a “Rapid Response” Interagency Review Team (Team) would facilitate the following:

- Early agency review of potential mitigation sites, resulting in early feedback to project sponsors prior to investing significant resources (time and money) in the site.
- Improved consistency and agency coordination through simultaneous multi-agency review.
- Increased clarity and consistency of agency positions on site suitability and adequacy to replace lost wetlands.

In essence, the team would implement an interagency scoping process for large mitigation proposals. The submittal of basic information regarding a potential mitigation site will initiate a review of the site by the Team. This review will help the project sponsor identify project opportunities, issues, and potential problems, and will result in findings and recommendations regarding overall suitability of the project site for wetland mitigation consistent with State and Federal rules.

The project sponsor will receive a copy of the interagency findings and recommendations that result from the scoping process. The findings and recommendations do not constitute final approval of a wetland mitigation project or guarantee success should the project sponsor continue with application process. However, early review and input as part of this scoping process will allow a potential project sponsor to make an informed decision on the suitability of the site and whether to continue with the application process prior to a substantial investment of time and resources.

The following assumptions must hold true for the Team scoping process to be successful:

- There is general agreement among agencies as to what constitutes acceptable wetland mitigation.
- Each Team member has the authority to develop findings and provide timely feedback on behalf of their agency.
- Mining companies and other large project sponsors will participate in the early scoping process and heed the resulting agency feedback.
- All mitigation projects must meet the minimum standards of state and federal rule.

The scoping process is already in place for the review of potential wetland mitigation sites under WCA. See the “Replacement Wetland Scoping Document” on the BWSR website at:

<http://www.bwsr.state.mn.us/wetlands/wetlandbanking/forms.html>. Scoping is even more important given the magnitude of wetland mitigation projects associated with mining in the northeast, and the Team can utilize the existing form and process. In addition to existing circumstances, the Team approach could be utilized under alternative mitigation structures or mechanisms as described below.

Recommendation:

1. Establish and utilize a “Rapid Response” Interagency Review Team for the early scoping of potential mitigation sites as described above.

Action Item:

1. Establish the Team structure and operating procedures via interagency agreement.
2. Identify and pursue funding for implementation.

4.4.3. Promote Private Wetland Banking.

Wetland banking is an effective, efficient, and transparent mechanism to provide mitigation for projects that affect wetlands, both large and small in scope. Banking is, and should continue to be, a priority for mitigation. However, there are many variables that affect whether or not a particular site meets wetland mitigation standards and is worthy of allocating mitigation credits. These variables, and the procedures involved with establishing a wetland bank, can be very complicated and unknown to the vast majority of landowners. In fact, wetland banking itself is largely an unknown to landowners. Changes to the current approach to wetland banking could help increase the number of quality mitigation banks available in the northeast.

Recommendations:

1. Improve the availability of information regarding wetland banking, particularly in the northeast.
2. Promote and utilize local watershed planning efforts.
3. Utilize agency and local government expertise to proactively inventory and assess potential mitigation sites and promote banking.

Action Items:

1. Publish a public notice about the statewide demand for wetland mitigation credit that includes the current availability of credits in each BSA along with general information of historic credit needs, as well as the availability of other mitigation credit options in the northeast (see recommended alternative mitigation options in Section 4.2). Provide this same information directly to local governments in NE Minnesota.
2. Promote the integration of wetland planning, particularly the inventory and prioritization of mitigation opportunities, into local water planning efforts in Minnesota.
3. Consider pursuing a State agency position, through new funding or the reallocation of existing staff duties, to focus on the inventory and assessment of potential wetland mitigation sites and the promotion of wetland banking. This position, the inventory of mitigation sites described in

Section 4.4.1, and the “Rapid Response” Interagency Review Team described in Section 4.4.2 can be mutually beneficial. The position could also be helpful to identify options for non-traditional mitigation and to coordinate with other local and regional planning efforts (e.g. TMDL plans).

5. Alternative Mechanisms for Providing Compensatory Mitigation.

The recommendations in Section 4 will increase available information, provide additional options for project sponsors, improve the project review process, and provide greater benefits to Minnesota resources. However, alternative mechanisms or processes for accomplishing mitigation may be more effective in producing outcomes that maximize statewide public value, particularly for instances when wetland mitigation is allowed to leave the Mitigation Service Area of impact. An alternative implementation mechanism can also aid in the targeting of in-watershed water quality improvement projects. Absent an effective mechanism, many of the current challenges of the status quo will remain. Establishment of the mechanism is a long term initiative, but an essential part of the solution nonetheless.

The implementation mechanism should involve the establishment of a third party mitigation option. The third party entity could be responsible for balancing the needs of local watersheds with statewide interests while satisfying state and federal regulatory requirements. Regulatory agency oversight would be required during the development and implementation of these mechanisms as required by rule and since they would have broad geographic scope.

Some advantages of an alternative mitigation mechanism include:

- Greater ability to take advantage of priority mitigation opportunities as they arise (timing is an extremely important factor in potential project feasibility).
- Balance in-watershed mitigation and protection activities with wetland restoration elsewhere (i.e. balance watershed needs with statewide priorities).
- Improved targeting of watersheds and mitigation activities when leaving the bank service area.
- Provide greater certainty to project sponsors, allowing projects to continue when mitigation is uncertain or not available.
- Higher quality mitigation due to improved planning timeframes and framework, consolidation of multiple impacts into larger wetland complexes, and coordination with other conservation programs and goals.

Two primary options for a third party mitigation mechanism are described below. An alternative implementation mechanism would be a compliment to many of the recommendations contained in this report.

5.1. Northeast Regional Wetland Mitigation Cooperative (Umbrella Bank) Option.

The Northeast Minnesota Wetland Mitigation Inventory & Assessment Report (NE Report) recommended the establishment of a Northeast Regional Wetland Mitigation Cooperative. The final report for Executive Order 12-04 also identified a Cooperative as one option to consider for addressing concerns with wetland mitigation in northeast MN. According to the NE Report, the primary goals envisioned for a Wetland Mitigation Cooperative were to develop a program to:

- 1. Establish and ensure a self-sustaining, positive balance of wetland mitigation credits for use in northeastern Minnesota.*
- 2. Establish wetland bank credits based on priorities for location and wetland type derived from an evaluation of historic wetland resources, opportunities within the various watersheds, impaired waters, significant natural resources, and other factors.*
- 3. Establish wetland bank credits that have multiple ecological and societal benefits, including water quality protection/improvement, wildlife habitat, flood control, fisheries habitat protection, carbon sequestration, and biodiversity.*

According to the NE Report, it was envisioned that the Cooperative be managed by a public entity with oversight from an interagency committee. However, the actual structure of such a Cooperative could range from a single public entity to an agreement between multiple private interests. The report also identified two primary hurdles to the establishment of such a Cooperative. These hurdles are still relevant today:

- 1. Identification of a public organization to manage the cooperative.*
- 2. Initial funding to develop mitigation bank credits.*

As described here, the Cooperative would focus on establishing in-advance wetland banking credits, primarily in northeast watersheds. For the Cooperative approach to be a viable option, it would need to be structured similar to a true cooperative rather than a publicly managed and funded entity as recommended in the NE Report. The Cooperative could operate as a partnership between mining interests and/or other private entities with wetland mitigation needs in northeast Minnesota, with direction and guidance provided by an interagency wetland mitigation committee. Structured as such, the Cooperative could not operate as an In-Lieu Fee program (see below). The responsibility and initiative to establish the Cooperative would lie with the identified private entities. A cooperative consisting of non-governmental organizations unaffiliated with project proponents and focusing on northeast watersheds could possibly be an alternative structure, however.

5.2. In-Lieu-Fee Program Option.

An “In-Lieu Fee” (ILF) wetland mitigation program differs from traditional wetland banking in that the mitigation is often established after the impacts occur. The process for identifying and approving wetland impacts remains unchanged. However, as an alternative to the purchase of banking credits or

the establishment of project-specific mitigation, a fee is paid to the entity operating the ILF program to be used specifically for obtaining the required mitigation.

The Federal Rule that took effect in 2008 (33 CFR Parts 325 and 332, Compensatory Mitigation for Losses of Aquatic Resources) provided a consistent process for establishing an ILF program for mitigation under Section 404 of the Clean Water Act. The parameters of an individual ILF program are defined in an ILF Instrument – an agreement between the U.S. Army Corps of Engineers and the entity administering the ILF program. Such parameters will include the service area of the program, the process and goals for establishing mitigation projects, the process for setting fee amounts, and numerous other considerations.

In 2012, legislative amendments to the Wetland Conservation Act included modifications to MN Stat. § 103G.2242 Subd. 3. The new language clarified BWSR's authority pertaining to wetland banking, and included the following specific to ILF programs: "The board may establish, sponsor, or administer a wetland banking program, which may include provisions allowing monetary payment to the wetland bank for impacts to wetlands on agricultural land, for impacts that occur in greater than 80 percent areas, and for public road projects."

Given the goal of balancing the needs of NE watersheds with statewide resource priorities, a statewide ILF program should be a serious consideration. Such a program could be operated by a non-federal public entity or a non-profit organization with expertise in the NE and other priority areas. As recommended here, the ILF program would serve projects that impact wetlands in the NE region. However, the program could be expanded to other specified service areas or statewide.

6. Stakeholder Input.

The concepts developed by the Interagency Team were previously shared with invited stakeholders to obtain feedback and direction. The Team agreed that it was important to solicit public input on the ideas and concepts that had been developed, prior to finalizing the report and associated recommendations.

An extensive list of stakeholders was developed and used for meeting notification and invitations. This list included the list of groups and organizations that BWSR used to solicit participation in the process to comply with Governor's Executive Order 12-04, as well as additional contacts suggested by the Team. Stakeholder input meetings were held in St. Paul on November 20, 2013, and in Chisholm on January 15, 2014. The stakeholder meetings consisted of a presentation on the concepts developed by the Team, an opportunity for participants to identify opportunities, challenges, and questions for each concept, and a question and answer period with members of the Team. Each agency with staff representation on the Team also participated in the stakeholder meetings.

In addition to the two stakeholder meetings, the Interagency Team also accepted written or email comments on the draft recommendations from November 20th, 2013 to January 31st, 2014. Following the close of the comment period, the Team reviewed and evaluated the stakeholder input and finished their work in drafting this report. Where appropriate, input from the stakeholders was used to shape

the contents of the interagency report. In general, while there was some apprehension, both verbal and written feedback on the concepts and direction developed by the Team was largely positive. A summary of written stakeholder comments is provided separate from this report.

As described in Section 7, Next Steps, additional opportunities for public input will be available associated with the implementation process for specific recommendations.

7. Next Steps.

This report presents analysis and recommendations of staff, not necessarily the position of the agencies. However, the agencies are encouraged to consider the report's recommendations and pursue their implementation as appropriate. Many of the recommendations contained in this report will require changes to Wetland Conservation Act Statutes or Rules, the St. Paul District Mitigation Policy, and/or associated agency guidance. Each agency is responsible for determining and pursuing the necessary changes, however, the agencies should coordinate such efforts to ensure consistency.

The Interagency Team recommends that the agencies collaborate to explore and consider implementing the recommendations included in this report, as well as other options that may achieve the agencies' wetland mitigation goals. Specifically, further collaboration is needed on the following:

1. the prioritization and planning for the implementation of report recommendations;
2. consistent credit allocation methods and amounts for chosen alternative mitigation options;
3. the establishment of high priority areas for wetland restoration (secondary service areas);
and
4. the establishment of alternative implementation mechanisms or other initiatives that may be pursued.

The intent of this report is to provide direction and chart a course for further changes that will better achieve the State's desired outcomes. As mentioned above, the mechanism by which chosen Team recommendations are implemented will vary from statute, rule, policy, guidance, or administrative procedures. All substantial changes (statute, rule, policy) will include opportunities for additional public input through the appropriate process associated with that particular mechanism. It is also in these processes that many of the implementation details will be developed and vetted. Given the expertise and in-the-field experience of local governments relating to the implementation of State wetland regulations, obtaining local staff participation and input will be particularly important.

This report is focused primarily on the *siting* of wetland mitigation in NE Minnesota, and does not address all issues related to wetland impacts in the NE and associated mitigation. Apart from which report recommendations or implementation mechanisms are pursued, the following goals should be considered as part of the overall strategy for improving wetland mitigation in the NE and statewide:

- Clarity of expectations for implementing agencies and applicants.
- Consistency in the application of regulatory standards regardless of the agency, program, implementation mechanism, or applicant/type of project.

- Accuracy in the allocation and tracking of mitigation credits to ensure that the functions gained are sustainable and adequate to replace wetlands lost to approved impacts.
- Transparency in process, decision-making, credit accounting, and program outcomes.