



**US Army Corps
of Engineers**®
St. Paul District

DRAFT MEMORANDUM

Date: 29 May 2013

Subject: *Application of the Federal Mitigation Rule and St. Paul District Policy Guidance on Compensatory Mitigation - Compensation Ratios for Loss of Wetlands/Aquatic Resources*

I. Introduction

The *St. Paul District Policy for Wetland Compensatory Mitigation in Minnesota* (2009) [District Policy] applies three factors to determine compensation ratios: in-place vs. out-of-place, in-kind vs. out-of-kind, and in-advance vs. not in-advance. The temporal loss issue is addressed by the in-advance vs. not-in-advance factor. The Federal Mitigation Rule states that compensation ratios of greater than 1:1 can be applied to account for factors including temporal loss and the difficulty of restoring or establishing certain wetlands/aquatic resources (332.3 (f)). This statement was incorporated into the St. Paul District Policy (page 23).

II. In-Advance Incentive per St. Paul District Policy

Compensatory mitigation must account for the temporal losses of wetland/aquatic resource functions associated with authorized impacts. Temporal losses can be minimized if compensation sites are established in advance of authorized impacts, which is typically the case for mitigation banking. In rare cases, permittee-responsible compensation could also establish compensation sites in advance of authorized impacts.

A reduction in the compensation ratio of 0.25 can be applied if a permittee-responsible compensation site establishes wetland hydrology and initial vegetation in advance of authorized impacts. At a minimum, the site must have wetland hydrology and hydrophytic vegetation established at least one full growing season (May-October) prior to the authorized discharge of dredged/fill materials (pages 14, 24). Further, the compensation site must meet the success criteria/performance standards applicable at that development stage of the site (page 14).

The intent of the minimum requirement that the compensation site must have wetland hydrology and hydrophytic vegetation established at least one growing season in advance is to confirm: (1) that the site is providing wetland functions in advance of authorized impacts; and (2) a reasonable assurance that the compensation site is on the correct trajectory for success. Success is defined by the performance standards developed for each compensation site. Great variability exists for establishing various wetlands/aquatic resources and the performance standards reflect this. The minimum of a single growing season can be sufficient for emergent, aquatic vegetation to colonize a shallow marsh restoration site and provide habitat, water quality functions, etc. At the opposite end of the spectrum are compensation sites involving restoration of forested wetlands, which may require 8 to 10 growing seasons to determine if hydrology and woody seedlings/shrubs/saplings indicate that the site is on the correct trajectory for success. It is true

that woody seedlings/shrubs/saplings would not provide the same habitat and other functions as a mature forested wetland, but the intent of the “in-advance” incentive per the St. Paul District Policy would be met.

Use of the 0.25 incentive for “in-advance” by permittee-responsible compensation has been so rare that St. Paul District has not developed a break-out of minimum requirements and timeframes by wetland type. Given the current review of large-scale mining projects and associated permittee-responsible compensation, there is now a need to do so. The timeframes listed by Table 1 represent the best case scenario (e.g., no substantial setbacks or corrective actions needed to establish target hydrology and initial vegetation). These timeframes are based on field observations of compensatory mitigation sites in Minnesota and Wisconsin during the past 35 years.

TABLE 1
Minimum Number of Growing Seasons Needed to Determine if a Compensation Site has Met the Requirements for the In-Advance Incentive

Seasonally Flooded Basin: 1 Growing Season
Shallow Marsh: 1 Growing Season
Sedge Meadow: 3 Growing Seasons
Open Bog: 3 to 5 Growing Seasons
Alder Thicket/Shrub-Carr: 5 Growing Seasons
Coniferous Bog: 8 to 10 Growing Seasons
Hardwood and Coniferous Swamps: 8 to 10 Growing Seasons

III. Compensation Ratios for Difficult-to-Replace, Rare and/or Exceptional Wetlands per the Federal Mitigation Rule and St. Paul District Policy

The Federal Mitigation Rule states that “difficult to replace” wetlands/aquatic resources includes bogs and forested wetlands (323.3(e)(3) and Preamble, page 19633). The majority of wetlands that would be impacted by the proposed NorthMet project are “difficult-to-replace” – coniferous bog, open bog, coniferous swamp and hardwood swamp.

St. Paul District Policy also states that compensation ratios can be raised on a case-by-case basis if the impacted wetland/aquatic resource provides rare or exceptional functions including plant communities that rate “exceptional” using MnRAM, or have a high rating using a Floristic Quality Assessment (FQA) (page 24). Most of the wetlands that would be impacted by the NorthMet project are of pre-European settlement condition and rate at the highest FQA levels for those plant communities in Minnesota. MnRAM vegetative diversity/integrity ratings would be “exceptional” for these pre-European settlement condition wetlands.

Therefore, the District Engineer may determine that a higher compensation ratio is required to offset losses of wetlands that are difficult to replace and/or provide an exceptional level of functions. For simplicity, these wetlands will be referred to as “high quality wetlands” in the following discussions.

District Policy states a base compensation ratio of 1.5:1, and a minimum of 1:1, with a provision for a case-by-case determination of higher ratios to account for factors including difficult to replace, rare and/or exceptional wetlands/aquatic resources. For low to moderate quality wetlands, the 1.5:1 base ratio would apply in accordance with District guidance. For impacts to high quality wetlands, the Corps may require additional compensation in accordance with District Policy. A value of 0.25 was assigned by the District Policy to each of the factors applied for determining compensation ratios. Given this precedent, it would be consistent to assign a value of +0.25 for difficult to replace wetlands, and +0.25 for wetlands

that have exceptional functional levels, to the base ratio of 1.5:1. Therefore, the base compensation ratio in these cases would start at 2:1. Compensation that is in-kind, in-place and/or in-advance could reduce this ratio in 0.25 increments.

IV. Analysis for NorthMet PSDEIS

To qualify for the 0.25 in-advance incentive, the proposed compensation by PolyMet for the NorthMet project would need to be established and meeting performance standards for hydrology and initial vegetation as shown by Table 1. Temporal loss of functions associated with forested wetland types would still be significant in any scenario (i.e., it will take 30 to 50 years for a non-forested compensation site to replace the functions of a forested wetland). But, as stated previously, the intent of the Policy's "in-advance" incentive would be met. This is no different than what is applied to mitigation banking sites. Credits consisting of forested wetlands can be fully released in as little as 10 years provided that performance standards are met.

Compensation proposed at the Zim Site would be expected to meet both in-kind (-0.25) and in-place (-0.25) incentives thereby reducing the compensation ratio for high-quality wetland impacts from 2:1 to 1.5:1. If in-advance, the ratio would be further reduced to 1.25:1. For low to moderate-quality wetlands, the recommended base ratio of 1.5:1, as proposed in the PSDEIS, would be required and could be reduced to 1.25:1 if in-kind and 1:1 if also in-advance.

Compensation proposed at the Hinckley and Aitkin Sites would be expected to meet in-kind resulting in a compensation ratio for high-quality wetland impacts of 1.75:1, and if in-advance, the ratio would be reduced to 1.5:1. For low to moderate-quality wetlands, the recommended base ratio of 1.5:1, as proposed in the PSDEIS, would be required and could be reduced to 1.25:1 if in-kind and 1:1 if also in-advance.

District guidance on compensatory mitigation emphasizes a functional approach to offset proposed project impacts be considered. While bogs and forested wetlands are characterized as difficult to replace, the proposed compensation sites for the NorthMet project are likely to achieve in-kind compensation to offset functional losses. The proposed mitigation sites were selected based on availability and the high likelihood of meeting performance criteria.

V. USEPA Comments on Compensation Ratios

USEPA recommended a compensation ratio of 2:1 or 3:1 to offset adverse impacts given the degree of temporal losses of wetland functions and scope of the losses (approximately 917 acres of direct impacts).

Temporal losses of wetland functions are addressed by the in-advance factor described above.

District Policy does not address the scale issue raised by USEPA. It is acknowledged that the proposed NorthMet project is a large scale impact that demands a comprehensive approach to offset those impacts.

No suitable quantitative wetland functional assessment method for northeast Minnesota exists to calculate the acres/wetland type/timeframe necessary for compensatory mitigation to offset proposed impacts. Lacking such a method, we employ an acreage surrogate as discussed above. A base ratio of 2:1, for high-quality wetlands as described in IV above, would be consistent with USEPA's recommendation of at least a 2:1 compensation ratio. However, District Policy would allow for the compensation ratio to be reduced if it is in-kind, in-place and/or in-advance. Allowing for these incentives to reduce the base compensation ratio is integral to our policy. While USEPA has identified the scale of impacts and temporal loss of

functions as factors in their recommendation of a 2:1 or 3:1 compensation ratio, there is no scientific data to say what ratio is most accurate or appropriate.

If, however, large scale wetland losses in the Great Lakes Basin are not compensated for within that basin, a final ratio of 2:1 to 3:1 as recommended by USEPA could be warranted.

VI. Statement for NorthMet PSDEIS

St. Paul District has not made a final determination of the compensation ratios that would be required. Base compensation ratios would be either 2:1 or 1.5:1 depending on the location, quality of the wetland, wetland type, and timeframe of the compensation. A decision on whether proposed compensation would qualify for the 0.25 incentive for in-advance requires additional information including: (1) development of performance standards that would specify the hydrology and initial vegetation to be established; and (2) number of growing seasons that wetland compensation sites would be established in advance of authorized impacts.

In conclusion, the compensatory mitigation ratios proposed in the PSDEIS for the NorthMet project were based on recommended guidance. They assumed successful outcomes for the proposed compensatory mitigation sites. However, to address concerns expressed by USEPA, the base compensation ratios could be increased to 2:1 for impacts to high-quality, difficult to replace, bog and forested wetlands. For impacts to low and moderate quality wetlands, a base ratio of 1.5:1, as proposed in the PSDEIS, would be applied. Incentives to reduce the recommended base ratios would be considered at the time of permitting. District guidance on recommended compensation ratios takes these incentives into account. The final decision on compensatory mitigation ratios will be determined at the time of the permit decision based on current District guidance.