

FRESHWATER WETLANDS REGULATION GUIDELINES ON COMPENSATORY MITIGATION

I. PURPOSE

The Freshwater Wetlands Act (ECL Article 24) recognizes that wetlands provide a variety of functions and benefits important to the people and environment of New York. The Act requires that wetlands be preserved, protected and conserved "consistent with the general welfare and beneficial economic, social and agricultural development of the state".

We are expected to protect wetlands and accommodate beneficial development that may impact them through our regulatory program. Mitigation of project impacts gives us the opportunity to resolve this apparent paradox.

This memorandum provides general guidance to Department staff on mitigation as part of the freshwater wetlands regulatory program. The general principles expressed are also applicable to other regulatory programs addressing wetland impacts, such as protection of waters, pursuant to ECL Article 15.

We cannot prescribe a "cookbook" approach to mitigation that will cover every possible case. The State's wetlands are too diverse and the range of projects with a potential impact on wetlands is too great. Mitigation for each project must be decided on the basis of the character of a particular wetland, the nature of the project's impacts and the opportunities to avoid or offset these impacts. The guidance provided here offers a framework for project-specific decisions.

The Department's Freshwater Wetlands Enforcement Guidance Memorandum must be consulted when mitigation is part of an Article 24 enforcement action. Mitigation in an enforcement context is distinctly different from mitigation as part of the permitting process. Illegally altered wetlands must be restored to their condition prior to the violation unless the violator can show that it is not technically feasible or that the restoration will result in greater damage. Only then can alternatives to restoration be considered.

II. WHAT IS MITIGATION?

Mitigation in the broadest sense is all those actions taken to counter adverse effects of a project.

To meet the standards in 6 NYCRR 663 and receive a freshwater wetland permit, an applicant **must:**

- first demonstrate that impacts to the wetland cannot be avoided entirely

AND

◦ then demonstrate that unavoidable losses or impacts on the functions or benefits of the wetland have been minimized

AND

- finally, fully compensate for (replace) any remaining loss of wetland acreage and function **unless** it can be shown that the losses are inconsequential or that, on balance, economic or social need for the project outweighs the losses.

The degree of balancing required is commensurate with the classification of the affected wetland and the severity of the remaining impacts. The higher the class or the greater the impact, the greater the burden of proving over-riding need so as to avoid having to fully compensate for unavoidable impacts.

This guidance memorandum deals with compensatory measures an applicant may wish to take to offset project impacts **that cannot be avoided or further minimized** in order to qualify for a permit. The aim is to fully replace wetland acreage and all functions and benefits lost as a result of the project.

The science of restoring, creating or enhancing wetlands in a mitigation context is evolving. We should be cautious about permitting a wetland to be altered on the expectation that losses can be fully compensated. Priority must be placed on avoiding impacts given the uncertainties associated with compensation.

Compensatory mitigation is by definition undertaken to offset unavoidable impacts to a wetland as a result of a specific project. Proposals for wetlands restoration, creation or enhancement are not acceptable as mitigation if the effort is being undertaken as part of a separate program to restore or create wetlands, such as the Fish and Wildlife Service's Partners in Wildlife Program or the Soil Conservation Service's Wetlands Reserve Program. The object of these programs is to **increase** wetlands; a mitigation wetland is designed to **replace** lost wetland acreage and functions. Using a non-regulatory wetland restoration or creation project as regulatory mitigation will result in a net loss of wetland acreage and functions. Neither should converted wetlands simply being abandoned be acceptable as mitigation unless additional efforts are specifically taken to restore hydrology and/or vegetation, and reversion to wetland would not have occurred in the foreseeable future without human intervention.

Permanent protection of an existing wetland by dedication, easement or fee title

acquisition does not in itself constitute compensatory mitigation. Wetland acreage and functions or benefits unavoidable lost as a result of a project are not being replaced, as required by 6 NYCRR 663.

III. WHEN DO THESE GUIDELINES APPLY?

The Department has an active conservation program aimed at publicly and privately owned wetlands. Some of this effort focuses on restoring degraded or lost wetland habitat. This mitigation guidance applies to wetland creation, restoration, and enhancement conducted in a regulatory context only. It is not intended to guide management efforts, although the same principles apply.

Activities within 100 feet of a regulated wetland are also regulated if they impinge upon or otherwise substantially effect the wetland. Compensatory mitigation for activities in these regulated adjacent areas is considered in the context of replacement of the **wetland** functions and benefits being lost or impaired.

Compensatory mitigation as part of the regulatory process must be related to the impacts of a project. Applicants cannot be required to provide mitigation for losses not related to their project. Temporary disturbances, where pre-construction conditions are essentially restored, for example when laying a pipeline, do not require **compensatory** mitigation since there is no permanent loss. However, impacts to the wetland still must be first avoided and then minimized as with any other project, and efforts to reduce disturbances during construction, such as erosion control, will still be required.

The Freshwater Wetlands Enforcement Guidance Memorandum takes precedence over this guidance in Department enforcement actions affecting wetlands regulated by Article 24.

The U.S. Army Corps of Engineers may have concurrent jurisdiction over a wetland potentially affected by a project. A city, town, village or county may also have assumed Article 24 jurisdiction or adopted its own regulatory program.

Applicants should be advised to consult with all regulatory parties early in the project design stage to assure that proposed mitigation measures meet all applicable standards and so that consistent terms and conditions can be developed for the local, state and federal permits.

The Adirondack Park Agency administers the Freshwater Wetlands Act within the Adirondack Park pursuant to its own rules and regulations.

IV. GUIDELINES

1. Priority requirements are to first avoid and then minimize project impacts.

Compensatory mitigation is only used when it can offset project impacts that cannot be

avoided entirely or reduced any further.

2. Compensatory mitigation should preferably be "in-kind".

In-kind mitigation means replacing a wetland that is being altered with a wetland of the same type -- for example replacing emergent marsh with emergent marsh. Functions and benefits of the replacement wetland are assumed to be generally the same as those of the wetland being replaced.

Replacement with the same wetland type maintains the amount of that type in some geographical context. It is the most conservative approach when project impacts have not been or cannot be fully assessed.

Replacement with a different type -- for example replacing forested wetlands with emergent marsh is considered "out-of-kind"; it is acceptable in limited circumstances. It is not always possible to replace some types of wetland, such as bogs or mature red maple swamps. It is not always **desirable** to replace a wetland type. For example, the wetland type being lost may be predominant regionally. **Successful** replacement with a different, less common type can increase regional biological diversity. It may also better contribute to other regional conservation goals.

The reasons for choosing out-of-kind replacement should be documented as part of the permitting process.

Whether in-kind or out-of-kind, the proposed mitigation must provide substantially the same or more benefits than will be lost through the proposed activity [6 NYCRR 663.5 (g)].

Trade-off of one significant function for another must be avoided. For example, flood control could be provided without replacing lost wildlife habitat, but should not be allowed. The full array of lost functions and benefits should be replaced as closely as possible, consistent with the requirements of Part 663.

3. Compensatory mitigation preferably should be "on-site".

On-site mitigation is mitigation undertaken within or contiguous to the wetland impacted by a project. It does not necessarily have to be within the same site boundaries as the project, but it must involve the same wetland.

On-site mitigation helps maintain the size and integrity of the wetland being affected by the project. Directly linking the mitigation to the larger wetland ecosystem being impacted usually provides better assurance that lost functions and benefits are replaced.

Off-site mitigation is mitigation that is not within or contiguous to the impacted wetland. It

may be within the project site boundaries, on adjacent property, elsewhere in the watershed or within some larger political, ecological or geographic area.

Off-site mitigation is acceptable in some circumstances. On-site mitigation may not always be **possible** or **desirable**. For example, the configuration or physical limitations of a site may preclude on-site compensation or the site may be contaminated.

However, the benefits being provided by some wetland functions are site-dependent; others are not. Mitigation off-site does not compensate for loss of a function that is site-dependent but is not replaced on-site. If compensation for such a loss is necessary to meet permit standards in 6 NYCRR 663, a permit should be denied.

If a function is not site-dependent, mitigation done off-site may compensate for its loss. In this case, off-site mitigation could be used to help meet the permit standards in Part 663.

A function like flood control or storm water management usually must be replaced on-site if continued protection of the immediate down stream area is needed. Replacement of functions like water quality maintenance or nutrient export may be acceptable off-site if the mitigation occurs in the same watershed. Values like recreation, open space and aesthetics might be replaced within the same city, town or county. Wetland fish habitat must be replaced on the same body of water. Mitigation for lost wildlife habitat may be acceptable off-site within the same ecological zone as defined by the Department for wildlife management purposes.

The point is that while the array of impacted functions and benefits should be replaced, it may be possible to separate them and compensate for different losses in different places.

Juxtaposition is important. A wetland restored or created abutting and contiguous with an existing wetland or waterbody is more likely to persist and be effective than an one created in isolation. An isolated wetland can be valuable if it is strategically placed, such as an open marsh located near upland nesting cover.

4. The preferred order of compensatory mitigation is wetland restoration, then creation, and finally enhancement.

Different situations may dictate different approaches, including a combination of these methods of mitigation.

Restoration means reclaiming a degraded wetland to bring back one or more functions that have been partially or completely lost by such actions as filling or draining. It is the preferred form of mitigation because it typically has the greatest chance of successfully establishing natural wetland functions. Opportunities for on-site wetland restoration are usually limited. Restoration is probably most applicable when off-site mitigation is

used to replace some or all of the wetland functions impacted by the proposed project.

Creation means making a new wetland, usually by flooding or excavating lands that were not previously occupied by a wetland. It offers the benefit of maintaining no-net-loss of wetland acreage, perhaps, however, at the expense of important upland.

To date, there is less assurance of success in creating new wetland than in restoring a degraded one. Many created wetlands have not persisted over time or have not provided the functions for which they were designed. Success rates are improving as wetland construction technology is advancing. Careful design, monitoring, and long term maintenance are critical.

Creation is especially successful when it is done by enlarging an existing wetland or waterbody. Often, too, several acres of wetland can be constructed adjacent to an existing wetland or aquatic system for the cost of creating one acre of isolated wetland.

Enhancement is the least preferred option. It involves altering an **existing functional** wetland to increase selected functions and benefits to a degree that offsets losses of these functions or benefits in another wetland or parts of the same wetland. Restoration, in contrast, involves restoring lost or impaired functions in a **degraded** wetland.

Enhancement results in a net-loss of wetland acreage since acreage lost to a project is not replaced. There may be a net-loss of wetland functions as well. Enhancement is often short-lived unless carefully designed and maintained, perhaps indefinitely. The wetland often returns to the equilibrium state that existed prior to "enhancement".

Enhancement inherently involves questions of trade-offs. It is usually focused on wildlife habitat and often involves loss of one habitat type to create another -- converting shrub/scrub to open water for example. Gains for some wildlife species are made at the expense of lost habitat for other species. Enhancement for other wetland functions may also be possible, again, most likely only by impacting other existing functions.

Enhancement by necessity must be based on subjective judgements as to the value of the "enhanced" function versus the value of the existing functions being lost or impaired by the enhancement effort. It should only be considered as appropriate mitigation in the rare instance when the trade-offs are limited to habitat; that is, when other important functions in the enhanced wetland are not impaired by the alterations.

The reasons for choosing a particular mitigation strategy should be documented as part of the permitting process.

5. Mitigation proposals should be based on plans containing clear specific detail, short and long term goals and measurable performance criteria.

Project sponsors are responsible for designing and implementing mitigation measures as a legitimate project expense. Innovative proposals should be encouraged, but they require more detailed planning, monitoring, and critical evaluation.

General guidelines on planning and implementing compensatory mitigation follow, with more detailed planning considerations listed in the Appendix. These guidelines should be applied sensibly. The detail needed, the intensity of follow-up monitoring and the requirements for performance guarantees must be considered in the context of the value of the wetland being impacted and the magnitude of the impacts. All mitigation proposals, even if relatively small, should be documented, however.

◆ General Planning and Implementation Guidelines

a. Mitigation Goals

Establishment of wetland vegetation in and of itself is not acceptable as a goal or as a measure of success of a mitigation project. Goals and performance criteria must relate to successful replacement of the unavoidable wetland losses that are being mitigated. Meeting clear and specific performance standards is the measure of successful mitigation.

b. Replacement Ratios

There are no mandated ratios for replacing lost wetland acreage, but replacement on at least a 1:1 basis is desirable. Replacement ratios should be evaluated and set on a project-by-project basis, considering the functions and benefits lost or gained, the acreage involved, and the mitigation being proposed.

It is very often necessary to replace more acreage than has been impacted to fully compensate for losses. Larger acreage may be needed as insurance against the uncertainties associated with trying to create a new wetland. Higher replacement ratios may also be needed to compensate for the long time it will take for a mitigation wetland to function at the same level and provide the benefits of the wetland being replaced.

c. Persistence

Mitigation wetlands must persist over time, but not necessarily remain static. Ecological changes will occur in response to internal and external processes. Wetlands should be designed with the capacity to adapt to changing conditions and still persist in some form. They should not require intensive long term maintenance in order to remain as a viable wetland, unless the maintenance is provided for as a project cost and is guaranteed in some manner.

d. Monitoring

Mitigation projects should be monitored for an appropriate period as determined on a case-by-case basis. Long term monitoring is generally needed to assure the continued viability of mitigation wetlands. The five year minimum established in the Department's Freshwater Wetlands Enforcement Guidance Memorandum provides a useful reference point. Monitoring requirements should be coordinated with other regulatory agencies having jurisdiction over the project. **There must be provisions to ensure that corrective action will be taken as needed until the wetland mitigation goals are met.**

e. Guarantees

An applicant must be bound to complete mitigation in accordance with plans and to do monitoring and remedial work as needed. An environmental monitor may be needed, at project expense, for larger or more complex mitigation projects. These requirements can be included as permit requirements as long as the permit is written to expire at the end of the monitoring period. All permit conditions expire with the expiration of the permit. Separate mitigation agreements can be considered if the Office of General Counsel is consulted to make sure they are legally enforceable

Performance bonds or some other form of financial assurance that mitigation projects will be completed and monitored should be considered for larger projects or projects with a high risk of failure. Financial guarantees should also be considered when ownership of the mitigation wetland may change, such as when a developer completes the sale of the property involved. Again, the Office of General Counsel must be consulted for legal content.

Regardless of size, mitigation wetlands are regulated by the Freshwater Wetlands Act after completion [6 NYCRR 663.5 (g)(ii)]. Additional forms of long term protection may be desirable, as well. Restrictive deed covenants or conservation easements are useful devices. These should be developed in consultation with the Department's Office of General Counsel.

6. Mitigation preferably should be completed prior to starting the permitted project or concurrently with it.

Pre-project mitigation greatly enhances our ability to enforce or modify mitigation requirements since the permit can still be revised or revoked if necessary. Completing the mitigation prior to the project allows time to assess the likelihood of the mitigation's success.

However, up-front mitigation may not always be practical or desirable. For example, when mitigation work is done concurrently with the permitted project, soils and vegetation from the impacted wetland can be used in the mitigation work.

Mitigation must be incorporated into a construction schedule that must be approved by the

Department and that becomes part of the project authorization.

V. GROUPING MITIGATION EFFORTS

Scattered small-scale mitigation actions may provide limited benefits, may not persist over time and often are less successful. Consolidating efforts into a single larger project is more cost effective, is more likely to be successful, and is likely to provide more wetland benefits.

a. Joint Mitigation Projects

Joint mitigation projects are those where mitigation for a number of proposed projects is combined into a single, cooperative effort. A single mitigation project may be proposed by one applicant to compensate for impacts of a number of disjunct projects, or by several applicants to compensate for the unavoidable impacts of their separate projects.

Regardless of the sponsor arrangements, each permitted project must still meet the requirements to first avoid and then minimize impacts. In-kind, on-site mitigation must also be considered on the individual permitted projects before compensation through a joint mitigation project is approved. The joint mitigation project should replace all functions cumulatively lost by the individual wetland alterations.

It is essential that responsibilities be clearly allocated between and among sponsors and that all commitments are made legally binding.

b. Mitigation Banking

"Mitigation banking" means creating or restoring a large wetland in advance of specific projects requiring permits and mitigation. Mitigation "credits" are assigned to the functions and/or acreage restored or created in the "bank". As unavoidable project impacts are permitted in the area, credit is "debited" from the bank to meet the mitigation requirements for those permitted projects. Project impacts must still be avoided and minimized, and on-site, in-kind considerations must still be met.

The Department is actively exploring the concept of mitigation banking. It will be incorporated into the regulatory program when they policy and operational questions are addressed. Separate guidance will be provided at that time.

VI. STAFF EXPERTISE

While far from an exact science, knowledge and techniques exist for successful mitigation. We recognize the need for staff training to provide a base level of expertise for review of mitigation

proposals. A staff specialist would also be desirable to support regional efforts. Outside consultants, at project expense, may be required to assist in review of larger, more complex mitigation proposals.

We will address these needs to strengthen our delivery of the freshwater wetlands regulatory program. Meanwhile these guidelines can be used in the permitting process, relying, as always, on application of best professional judgement.

APPENDIX

CONSIDERATIONS IN MITIGATION PLANNING

PRE-APPLICATION PHASE

At pre-application conferences, project sponsors should provide a sketch plan and a description of:

- Existing conditions on the site to be affected by a proposed project, adjacent and nearby land cover and uses and characteristics of the wetland, including size, boundaries, type and functions, and parameters such as water depth and vegetative types.
- Location of the proposed project in relation to the wetland, the nature of the project and its potential impact on the wetland's acreage and functions.
- Efforts made to avoid and minimize project impacts to the wetland.
- The nature of any compensatory mitigation proposed, including location, acreage, type (e.g. restoration), characteristics, procedures to be used, management needs and provisions for monitoring and long-term maintenance.

APPLICATION PHASE

The project described in the application should have been designed to first avoid and then minimize impacts on the wetland in order to meet the permit standards in 6 NYCRR Part 663. This information should be documented as part of the application. A detailed mitigation plan should be provided if the project sponsor wishes to offer compensatory mitigation for unavoidable impacts.

The plan should include the date it was prepared and the date of any subsequent revisions, along with the name and qualifications of the author(s). The plan should address both the wetland impacted and the replacement wetland as follows:

1. IMPACTED WETLAND

Provide a plan with sufficient detail on existing and proposed contours, grades, topographic features and profiles at a scale sufficient to assess project impacts on the wetland.

Provide a narrative that describes:

- acreage and boundaries
- type and structure of the wetland, including vegetation

- wetland function and values
- hydrology including source and quality of water and hydroperiod
- soil characteristics and other pertinent information, such as water depth and wildlife present
- nature of the project impacts and the changes they will cause, including the timing of the impacts

Cite the source of data.

2. MITIGATION WETLAND

Provide a map with sufficient detail and at a scale to be able to determine where the wetland is located and its size, boundaries and topographic features.

Provide a narrative which describes goals and specific objectives for the mitigation wetland, including the functions and benefits to be provided and clear performance standards and criteria for assessing project success.

Describe physical, ecological and hydrological characteristics in sufficient detail to be able to assess whether losses in the impacted wetland are mitigated.

Provide details on construction, including:

- diking, excavation, or other means by which the wetland will be created
- construction schedule
- measures to control erosion and sedimentation during construction
- plantings -- source of stock, procedures, area to be planted, schedule. If vegetation from the wild will be used, identify the source and measures to prevent introduction of undesirable exotics.
- chemicals -- explain the purpose for using chemicals and the precautions to be taken to minimize use and to protect the wetland

Provide details on management of the mitigation site, including:

- measures to assure persistence of the wetland
- vegetative management
- sediment and erosion control
- monitoring plans, including methods and schedule for data collection and provisions for mid-course corrections
- provisions for long-term protection of the site, such as permanent conservation easement
- provision for bonding or other financial guarantees

Describe plans for periodic reporting, including at the end of construction, during the monitoring period and at the end of the monitoring period.

Identify the name, qualifications and experience of the person(s) implementing the mitigation plan.

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