

Appendix B

Part I

Activity Permit Mitigation Plan Data

Mitigation plans developed to compensate for the loss of wetlands, watercourses and/or buffer areas may be required to include the following baseline data:

1.0. Hydrologic data.

1. Limited projects: land use history, microtopography, general surficial geology and streamflow measurements, groundwater levels and movement, and groundwater quality, soil structure and drainage characteristics.

2. Moderate projects (losses of two to 10 acres): Data required for small projects plus microtopography, bedrock geology, surficial geology, streamflow velocity measurements if appropriate, soil pore water storage (organic soils), and direct precipitation measurements.

3. Large projects [losses of more than 10 acres]: Data for small and moderate projects plus water balance analysis (one-year study), groundwater storage, groundwater flow rates, soil pore water level and flow (organic soils).

1.2. Soils.

1. Limited projects: soil profile descriptions, general soil survey data, bulk density, porosity, hydraulic conductivity, pH, conductivity, cation exchange capacity, redox potential, total phosphorous, total nitrogen, nitrate nitrogen, organic carbon.

2. Moderate projects: data required for small projects plus fiber content (organic soils), phosphorous retention, pore water analysis (seasonally), alkalinity, exchangeable acidity, seedbank capacity, and soil organisms.

3. Large projects: data required for small and moderate projects plus clay mineralogy, microbial assessment (seasonally), heavy metals content, pesticides residues, gas/toxin analysis (seasonally), peat features, soil temperature regime.

1.3. Vegetation / habitat.

1. Limited projects: areal wetland extent and qualitative measurement of percent plant cover, plant species list, vegetation cover type, relative stem density, animal species list, slope, microtopography, plant vigor, surface water connections, habitat structure, vegetation/open water ratio, surrounding terrestrial cover type.

2. Moderate projects: data for small projects plus comprehensive animal species list, potential phosphorous uptake, potential nitrogen uptake.

3. Large projects: data for small and moderate projects plus quantitative measurement of stem density, evapotranspiration data, and net primary productivity.

Appendix B

Part II Mitigation Plan Guidelines

2.0. Mitigation Plan Guidelines:

1. Implementation of preventive measures to protect the natural condition and functions of wetlands and watercourses. These measures may include, but are not limited to:
 - a. Restricting activities within buffer areas by installing natural or artificial barriers along buffer area perimeters.
 - b. Establishing by conservation easement, development restriction area, or other deed restrictions, permanently preserved greenbelts around wetlands and watercourses, which generally prohibit future development rights and any activity which would negatively impact adjacent wetlands and watercourses.
2. Restoration or enhancement (e.g., improving the density and diversity of native woody plant species) of remaining or other wetland/watercourse buffer areas to offset the impacts to the affected buffer area.
3. Restoration of existing degraded or disturbed wetlands, watercourses and/or buffer areas of an equal or greater area to that disturbed; e.g., one acre of disturbance would require improving the condition of one or more acre of degraded wetland, watercourse and/or buffer area.
4. Restoration of areas of existing disturbed or degraded wetlands or watercourses by reclaiming disturbed or degraded wetlands or watercourses to bring back one or more functions that have been partially or completely lost by such actions as filling or draining, provided the area of proposed mitigation takes place in a confirmed disturbed or degraded wetland or watercourses having lesser functional values as a result of such disturbance or degradation.
5. The in-kind replacement of proposed impacted wetlands or watercourses by the construction of new wetlands or watercourses, usually by flooding or excavating lands not previously occupied by a wetland or watercourse, that recreates as nearly as possible the original wetland or watercourse interims of type and functions, and is located on a two-for-one area basis, on-site or within the same watershed, and provided adequate and sufficient wetland/watercourse hydrology can be verified.
6. Construction of vegetated swales, depressions, bioengineered watercourse streambanks and shorelines, and bio-filtration basins outside of regulated areas to divert and treat contaminated stormwater runoff.
7. Limitations on vegetation removal or disturbance.
8. Increasing the width of remaining wetland and watercourse buffer areas in one area of the wetland or watercourse to compensate for unavoidable encroachment in another area, including improving the density and diversity of native woody plant species.
9. Enhancement by means of replacement of plant species with those of higher biological function. This particular mitigation is considered the least desirable and will only be considered when all other mitigation options are unavailable.
10. Restoring all or a portion of an off-site previously disturbed wetland, watercourse, and/or wetland, watercourse and/or buffer area.