



WETLANDS AND BUFFER DELINEATION AND PROTECTION PLAN

Project Name: _____ Application Date: _____

Property Address: _____ Tax map #'s: Lot _____ Sheet: _____

Owner's Name: _____ Email address: _____

Applicant (if different from owner): _____ Engineer of record: _____

Certified Wetlands Scientist: _____ Date of wetland mapping: _____

Wetland Classification: Prime Critical Other

Total square feet impacted (permanent & temporary): in Buffer: _____ in Wetland: _____

Estimated project Start Date: __/__/____ End Date: __/__/____

Note: If determined that the scope of the project requires additional technical review, the applicant may be asked to provide the following information. If applicable, please visit: www.nashuanh.gov/city_departments/planning/conservation_commission

I. NARRATIVE REPORT

A. Existing Conditions

1. Provide detailed description of wetland classifications, value, etc., including classification technique. Include date and reference of most recent survey.
2. Describe evidence of altered wetlands or surface waters on site. Please refer to *the DES Draft Policy for Delineation of Altered Wetlands and Surface Waters of 10-11-01*, and provide Nashua Conservation Commission (NCC) with required documentation.
3. Include NH Natural Heritage Inventory (lists *known* rare and endangered species or exemplary communities) by contacting NH Division of Forests and Land's Natural Heritage Bureau at (603) 271-3623.
4. Document wildlife and habitat likely to be found or migrating on site - list mammals, bird and evidence of fish species and fish nesting activities.
5. Describe how existing wetlands are fed – describe flow direction if applicable. Describe relationship of wetlands to nearby wetlands, surface waters and ground water.
6. Describe existing tree cover and vegetation. See Site Plan/Drawing #3. Include list of invasive plant species listed on page 7 -- document approximate location of invasive species in or near area of impact. See Best Management Practices and Site Plan/Drawing #6.
7. Describe existing on-site drainage and seasonal water changes.

8. Calculate square footage of existing impervious surface(s) on site and in buffer.
9. Describe existing topography. Also see Site Plan/Drawing #3.
10. Document current land use and zoning district.
11. Describe any vernal pools and associated habitat, and include photos.
12. Document all public or private wells located within the vicinity.
13. Describe location of any public trails.

B. Proposed Project Activity

1. Describe project in detail. Include narrative of construction sequence, timing and progression of work, pre- through post-construction.
2. Describe how storm water for the 2, 10 and 100-year events will be handled during and after construction. Describe in detail (providing drawings including locations, length and depth) treatment swales, catch basins, culverts, bridges and depth to groundwater, infiltration systems and outlet location/description. Describe changes to runoff characteristics and the degree to which a project redirects water from one watershed to another. Include description of how all treatment and recharge will occur. For any wetland areas to be used for water run-off, demonstrate that excess flow on wetlands shall not cause excessive ponding and retention thereby causing environmental damage to existing flora or fauna. See Site Plan/Drawing #4. For site plans, include Storm Water Operation & Maintenance plan, including responsible party and proposed maintenance schedule.
3. Detail erosion control measures and methods for monitoring these controls during and after construction. If rip-rap is planned, describe in detail and map rip-rap (see Site Plan/Drawing #4). Explain why alternative erosion control methods cannot be used. See Best Management Practices. For large projects, erosion control inspection logs and reports to the NCC are required on a quarterly basis on 3/31, 6/30, 9/30 and 12/31 while project is active. List contact.
4. Describe in detail any changes in site topography, including amounts and types of fill to meet the proposed grades. The topo. should account for and reflect the proximity of nearby wetlands. Include square footage of proposed impervious surface on site, including percentage increase/decrease. See Site Plan/Drawing #3.
5. Describe proposed tree cover and vegetation. Describe (and map) conceptual landscaping plans for buffer areas. Include plant size – (tree caliper measured 6 inches above ground). Note: landscaping and maintenance regiment should ensure that fertilizer and chemical run-off do not enter the wetland. See BMPs for specifics on chemical treatment. See Site Plan/Drawing #3.
6. For proposed buffer or wetland impacts, describe and show on plan the following: foundations, light poles, bridges, basements, decks, outside stairwells, sheds, fences, retaining walls, swimming pools and above- and under-ground utilities. See Site Plan/Drawing #3.

7. Describe any temporary construction structures such as cofferdams, dewatering equipment, trailers and temporary materials (including soil). Note locations on Site Plan/Drawing #5. See Best Management Practices. If stockpiled soils are left untouched for more than 10 days, stockpile must be seeded to avoid erosion.
8. If site is in the Water Supply Protection District, attach letter from Pennichuck Corporation Inc. stating that Water Supply Protection District standards will be met, and include the 150-foot buffer on maps.
9. If impacting open water bodies, list before and after construction water volume (depth, width and length).

C. Post-Construction

1. Describe plans to control invasive plant species in impact area during and immediately after construction. See Best Management Practices.
2. If wetland or buffer area revegetation is proposed, a wetland scientist shall submit report to the Conservation Commission assessing health of plantings. Propose schedule for report submission.
3. Describe methods for maintaining landscaping in and nearby wetland buffers. No chemical applications are to be used in the wetland area or buffers including pesticides, herbicides, or fertilizers. See Best Management Practices for guidelines.
4. Show snow storage areas on Site Plan/Drawing #4. Describe surface treatment for roads, driveways, parking lots. See Best Management Practices for guidelines.
5. Removal of non-biodegradable erosion control materials and other construction materials is required upon construction completion. Name responsible party and approximate date for removal.
6. Submit photos of all completed work in wetlands and buffers prior to issuance of first C.O. for each phase of construction. Include post-construction photos of each photo in the original submission plan.

D. Mitigation

1. Describe and map on-site mitigation, including re-vegetation plan. See Site Plan/Drawing #6.
2. If backyards or lots include a buffer area, buffer markers and a conservation easement for the buffer may be requested by the Commission.
 - a. Map the surveyed easement boundaries and easement area. See NCC Buffer Brochure and Site Plan/Drawing #6.

- b. Include a copy of legal deed with wording addressing the new easement with this package.
 - c. Describe how easement markers will be placed. Trees or removable rocks are not suitable.
3. If applicable, describe plans to maintain the wetlands and wetland buffer(s) free of invasive plant species from reoccurrence for three to five years from project completion.

II. SITE PLAN / DRAWING

Show all prime, critical, and other wetlands. Maps should be in a 24"x36" format unless otherwise specified

1. Provide Locus Map including site of proposed activity within a half mile.
2. Show project location on tax map, listing abutting properties.
3. Detail Plans: Using a 1"=40' scale, map wetland impact areas with proposed contours (2') and any storm water management and treatment structures.
4. Provide the following plan in two versions (1) Existing (2) Proposed at 1"=100' scale. Include the following:
 - a. 2-foot contours -- Any changes in topography must be included on the "Proposed" map so that existing and proposed contour changes can be clearly distinguished
 - b. Wetland delineation results and flags
 - c. 20, 40 and 75-foot buffers as defined by NRO Sec. 190-112
 - d. If site is in the Shoreland Protection Act area, indicate the 250-foot buffer
 - e. If site is in the Water Supply Protection District, indicate 150-foot conservation zone
 - f. Display proposed impact areas in cross-hatching
 - g. 100-year floodplain
 - h. Tree cover and any unusually large, rare, or outstanding trees
 - i. Vernal pools
 - j. Structures
 - k. Roads and parking lots
 - l. Any other disturbance to wetland or buffer (see Proposed Project Activity #3)
 - m. Any easements (utility, snow, conservation, etc.)
5. Map and detail erosion control techniques to be used during construction, as well as any temporary disturbances and map areas where stockpiled material will be stored.
6. Separately map and define all proposed mitigation areas not mapped in #3, above. Indicate locations of conservation markers. If specified by the Commission, map approximate location of invasive species.
7. Clearly map the following: proposed rip-rap, storm water treatment areas, storm water management structures, swales, culverts, bridges, sidewalks, roads and snow storage areas.

Best Management Practices

1. **Landscaping:** Only native plants and seed mixes should be used in buffers. Vegetation will be replaced after one year if more than 20% dies. Maintenance plans should maintain buffers in a natural state.
2. **Chemical Treatments:** The Nashua Conservation Commission discourages the use of any chemical applications within a wetland or wetland buffer.
 - a. Consider your plans to apply chemicals for de-icing. Sand will cause siltation in the wetland – salt will kill vegetation and could cause damage to organisms within the wetland.
 - b. The application of herbicides within wetlands may only be conducted by a licensed professional after a permit has been obtained from the state. See New Hampshire Department of Agriculture – Division of Pesticide Control for specifics.
 - c. Fertilizers and pesticides used in buffers will leach into wetlands, causing excessive vegetative growth within wetlands. This can be very costly to remove. Trees, shrubs, plants and grasses considered for landscaping within or nearby a wetland buffer should thrive without the use of pesticides and/or fertilizers. If fertilizers are used, only slow release fertilizers should be considered. Please contact the University of New Hampshire Cooperative Extension Service for further advice in these areas.
3. **Erosion Control Techniques:** Erosion control methods often include the use of hay bales, which commonly carry invasive seeds. Even if certified seed-free, decomposing hay may attract weed seed. Hay bales should not be used in or near wetlands within the City of Nashua -- straw (which is inert) is okay. At no time should temporary storage of soils, equipment or other materials occur in a wetland buffer.
4. **Invasive Species:** Disturbed areas are breeding grounds for invasive plants. Invasives create an on-going maintenance problem for the landowner thereby reducing both the effective functioning of the wetland and the overall aesthetics of the area. Disturbance during summer months when seed dispersal is the greatest is particularly discouraged as it may warrant excessive follow-up by the applicant. The following invasive-control methods may be stipulated by the NCC for projects that are invasive-sensitive:
 - a. The Applicant should remove existing invasive listed on the banned or to be banned list in impacted areas and dispose in a manner that leaves them nonliving and nonviable, being careful in the removal process not to spur further seed dispersal. Weeds on the “watch list” are exempt from this stipulation.
 - b. Replanting of native species or pre-approved conservation mix should occur as soon after disturbance as practicable. Plants on the “watch” list are not suitable for landscaping.
 - c. Monitoring of banned invasive will protect the applicant’s landscaping investment and should be conducted for up to five years after site completion. See Plants from NH Prohibited Invasive Species List for specific invasive species to be monitored. Note: A complete documentation package (CD) with fact sheets for each listed weed is available upon request from the NCC.
 - d. Disposal: any invasive species removed from a site should be disposed of properly.
5. **Rip-rap:** Should be used only when no other alternatives are available.
6. **Snow Storage:** Snow storage areas should be located outside of wetland buffers.

Plants from NH Prohibited Invasive Species List – and – Federal Noxious Plant List (noted with *)

<u>Latin Name</u>	<u>Common Name</u>
<u>Aquatics*</u>	
<i>Butomous umbellate</i>	Flowering rush
<i>Cabomba caroliniana</i>	Fanwort
<i>Egeria densa</i>	Brazilian elodea
<i>Hydrilla verticillata</i>	Hydrilla
<i>Hydrocharis morsus-ranae</i>	European frogbit
<i>Lythrum alatum</i>	Lythraceae Winged loosestrife
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Lythrum virgatum</i>	Wand Loosestrife
<i>Myriophyllum aquaticum</i>	Parrot's feather
<i>Myriophyllum heterophyllum</i>	Variable milfoil
<i>Myriophyllum spicatum</i>	European water-milfoil
<i>Najas minor</i>	European naiad
<i>Nymphoides peltata</i>	Yellow floating heart
<i>Phragmites australis</i>	Common Reed
<i>Potamogeton crispus</i>	Curly-leaf pondweed
<i>Trapa natans</i>	Water chestnut
<u>Non-Aquatics</u>	
<i>Ailanthus altissima</i>	Tree of heaven
<i>Alliaria petiolata</i>	Garlic mustard
<i>Berberis vulgaris</i>	European barberry
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Cynanchum nigrum</i>	Black Swallow-wort
<i>Cynanchum rossicum</i>	Pale Swallow-wort
<i>Elaeagnus umbellata</i>	Autumn olive
<i>Heracleum mantegazzianum</i>	Giant hogweed
<i>Iris pseudacorus</i>	Water-flag Iris
<i>Ligustrum obtusifolium</i>	Blunt-leaved privet
<i>Lonicera bella (pretty)</i>	Showy bush honeysuckle
<i>Lonicera japonica</i>	Japanese honeysuckle,
<i>Lonicera morrowii</i>	Morrow's honeysuckle
<i>Lonicera tatarica</i>	Tartarian honeysuckle
<i>Polygonum cuspidatum</i>	Japanese knotweed
<i>Rhamnus carthartica</i>	Common buckthorn
<i>Rhamnus frangula</i>	Glossy buckthorn
<i>Rosa multiflora</i>	Multiflora rose
<u>Ban to go into effect in NH 1/1/2007</u>	
<i>Acer platanoides</i>	Norway Maple
<i>Berberis thunbergii</i>	Japanese barberry
<i>Euonymus alatus</i>	Burning Bush
<u>Watch List</u>	
<i>Centaurea maculosa</i>	-- Spotted Knapweed
<i>Cirsium arvense</i>	-- Canada thistle
<i>Coronilla varia</i>	-- Crown vetch
<i>Elaeagnus angustifolia</i>	-- Russian olive
<i>Euonymus fortunei</i>	-- Wintercreeper
<i>Glyceria maxima</i>	-- Sweet reedgrass
<i>Ligustrum vulgare</i>	-- Common Privet
<i>Lonicera maackii</i>	-- Amur Honeysuckle
<i>Lysimachia nummularia</i>	-- Moneywort
<i>Microstegium vimineum</i>	-- Japanese stilt grass
<i>Phalaris arundinacea</i>	-- Reed canary grass
<i>Populus alba</i>	-- White Poplar
<i>Pueraria lobata</i>	-- Kudzu
<i>Robinia pseudoacacia L.</i>	-- Black Locust
<i>Ulmus pumila</i>	-- Siberian Elm
<i>Amelopsis brevipedunculata</i>	-- Porcelain-berry