LEC WETLANDS WILDLIFE WATERWAYS

March 9, 2009

Hand Delivery

Northampton Conservation Commission
City of Northampton
210 Main Street, City Hall
Northampton, MA 01060

Re: Notice of Intent Application [LEC File #: KCI\07-300.01]
DEP File #246-0625
North Street Condominiums
North Street and Northern Avenue
Northampton, Massachusetts

Dear Commissioners:

On behalf of the Applicants, Northern Avenue Homes, Inc. and Tofino Associates, Inc., LEC Environmental Consultants, Inc., (LEC) has prepared this letter to supplement the Notice of Intent (NOI) Application originally submitted on November 14, 2008. As originally proposed, the project involved the construction of twenty-five (25) townhouse condominium units with associated appurtenances, including a roadway system, parking, driveways, utilities, stormwater management areas, and landscaping features on a 5.6± acre project site. Portions of the project occurred within the 100-foot Buffer Zone to on-site Bordering Vegetated Wetlands (BVW) and an Isolated Vegetated Wetland (IVW) protected under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40), its implementing *Regulations* (310 CMR 10.00), and/or the City of Northampton *Wetlands Protection Ordinance*, Chapter 337 (*Ordinance*). Specifically, the proposed Limit of Work, comprised of entrenched silt fencing, was situated upgradient of the BVW boundary, 10 feet at its closest point (several locations).

Since the original filing, the scope of the project has been significantly reduced in size, most notably to increase wetland Buffer Zone setbacks, eliminate two units, eliminate a detention basin, reduce the size of the primary detention basin, continue to incorporate Low Impact Development (LID) design concepts, and reduce the amount of impervious surfaces within the 100-foot Buffer Zone. Furthermore, proposed mitigation measures (invasive species control program and replacement of existing lawn areas with native vegetation) have been significantly augmented to provide a long-term net benefit to the Wetland Resource Areas and associated Buffer Zone. Project details are depicted on plans entitled "*North Street Condominiums,*" prepared by The Berkshire Design Group, Inc., dated March 5, 2009 (*Site Plans*).

The following provides a description of the existing site conditions, project details, and mitigating measures proposed to protect and enhance the interests and values of the site related Wetland Resource Areas enumerated within the above-referenced statutes. LEC has prepared this report based on review of materials submitted to the Conservation Commission and a total of nineteen (19) site visits dating back to August 23, 2007, including a comprehensive Vernal Pool Assessment conducted from March 18, 2008 through May 28, 2008.

Existing Site Conditions

The 5.6± acre project site, comprised of two subject parcels, is located within a moderately to heavily-developed residential area of Northampton, Massachusetts. In general, single-family and multi-family dwellings exist to the north, east, south, and west of the project site. An existing paved bike path located on a former (elevated) railroad bed occurs directly north of the property. Additionally, commercial/industrial development is located further north of the subject parcels. The site affords frontage along Northern Avenue (public) to the northeast and North Street to the southeast via View Avenue (private) and a 40-foot Right-of-Way (ROW). Immediately adjacent to North Street, the 40' wide ROW contains a gravel surface and functions as a common driveway for dwellings to the north and south. Currently, an existing single-family dwelling occurs on-site at the terminus of View Avenue, also utilized as a shared common driveway. The dwelling is immediately surrounded by manicured lawn conditions, ornamental shrubs, and garden areas. Remaining undeveloped portions of the site are comprised of forested wetland (BVW), an IVW, forested upland, and successional conditions present within previously disturbed areas (e.g., the ROW).

Forested Upland

Forested upland conditions occur within the northern, central, and south/southeastern portions of the project site, abutting the aforementioned BVW and IVW. The northern portion of the forested upland is dominated by a moderately dense deciduous canopy consisting of various oaks (*Quercus* spp.), American elm (*Ulmus americana*), and red maple (*Acer rubrum*). The shrub layer contains arrowwood (*Viburnum dentatum*), multiflora rose (*Rosa multiflora*), glossy buckthorn (*Rhamnus frangula*), honeysuckle (*Lonicera* spp.), Japanese barberry (*Berberis thunbergii*), and burning bush (*Euonymus alatus*). Groundcover is generally comprised of seedlings from the canopy and shrub layer, in addition to poison ivy (*Toxicodendron radicans*).

In contrast, the southern portion of project site is dominated by a dense Norway spruce (*Picea abies*) stand. As a result of the dense canopy, the shrub layer is generally absent to sparse. Poison ivy, interrupted fern (*Osmunda claytoniana*), and cinnamon fern (*Osmunda cinnamomea*) occupy the groundcover.

In general, on-site topography subtly descends towards the wetland boundaries. However, immediately upgradient of wetland flag #'s 1-6, 31-34, a32-a33, and a38-a44, topography is defined by distinct breaks in slope, evidence of historic filling.

Successional Conditions

Previously disturbed successional conditions occur within the aformentioned 40' wide ROW, areas surrounding the existing single-family dwelling, and areas abutting Northern Avenue. Currently, individual American elm, Norway maple (*Acer platanoides*), black cherry (*Prunus serotina*), and black locust (*Robinia pseudoacacia*) trees are scattered throughout the 40' wide ROW and are mostly encased by fox grape (*Vitis labrusca*) and Asiatic bittersweet (*Celastrus orbiculata*) entanglements. Within and immediately surrounding the ROW, the shrub layer is comprised of scattered honeysuckle, multiflora rose, and staghorn sumac (*Rhus typhina*) clusters, while various goldenrods (*Solidago* spp.) occur within the groundcover. Individuals and patches of Japanese knotweed (*Polygonum cuspidatum* or *Fallopia japonica*), common blackberry (*Rubus allegheniensis*), yew (*Taxus* spp.), multiflora rose, and dogwood (*Cornus* spp.) immediately abut lawn conditions associated with the existing single-family dwelling.

Wetland Areas

Forested Wetland (BVW)

The northern and northwestern portions of the project site are occupied by a forested wetland system characterized as a BVW. The BVW boundary depicted on the *Site Plans* has been confirmed as accurate through a Determination of Applicability (DOA) issued by the Northampton Conservation Commission on August 24, 2007. The wetland system borders on a linear stream (ditch), referred to as Millyard Brook, marginally projecting onto the project site, however generally forming the site's northwestern property boundary. The DOA also reaffirmed the stream as intermittent. The ditch extends underneath the off-site bike path via an old stone box culvert and eventually connects with the site's northwestern property boundary, extending within a 4-7 foot wide channel. Bank heights generally range from 1-3 feet, with the ditch's substrate comprised of mucky organic soils. Based on the linear nature of the stream, the ditch appears to have been excavated in the past, presumably for drainage purposes. During the spring hydroperiod and following precipitation events, the stream flows in a southwesterly direction, before becoming stagnant and drying out beginning in late spring through the summer months. Based on direct observations and other indicators of staining, surface waters intermittently overtop the ditch's banks at several distinct locations. Due to a gently sloping topographic gradient within the BVW system, surface waters generally drain toward the ditch (topographic low point) during the spring hydroperiod as a result of high groundwater and spring runoff/snow melt, in addition to following periods of heavy precipitation. Furthermore, subtle, small depressions occur throughout the BVW system, proximate to the ditch.

The forested wetland is dominated by a moderately dense canopy of red maple and American elm with scattered individual oak and eastern white pine (*Pinus strobus*) trees. The shrub layer is comprised of arrowwood, honeysuckle, glossy buckthorn, multiflora rose, Japanese barberry, winterberry (*Ilex verticillata*), speckled alder (*Alnus incana* ssp. *rugosa*), spicebush (*Lindera benzoin*), dogwood, highbush blueberry (*Vaccinium corymbosum*), and mapleleaf viburnum (*Viburnum acerifolium*). Poison ivy, cinnamon fern, interrupted fern, sensitive fern (*Onoclea sensibilis*), jewelweed (*Impatiens capensis*), and seedlings from the canopy and shrub layer occupy portions of the groundcover.

Isolated Vegetated Wetland

A small Isolated Vegetated Wetland (IVW) exists within the northeastern portion of the project site. The DOA also confirmed the IVW boundary as accurate. Vegetative composition and species diversity within the IVW are generally consistent with the BVW, however, hemlock (*Tsuga canadensis*) was observed within the IVW. Based on direct observations, the interior of the IVW holds up to eleven (11) inches of standing water for a shortened period of time in early spring.

Vernal Pool Assessment

As previously stated and following the Commission's approval, LEC conducted a comprehensive Vernal Pool Assessment in spring 2008, to evaluate the multiple small, subtle depressions scattered throughout the interior of the BVW and IVW. In summary, none of the five depressions studied met the criteria for certification as Vernal Pool habitat as described within the *Guidelines for the Certification of Vernal Pool Habitat*, prepared by the Massachusetts Division of Fisheries and Wildlife (dated January 1, 2001) and were not considered to be Presumed Vernal Pools or Vernal Pool Resource Areas as defined under the *Ordinance*.

No obligate vernal pool species were encountered throughout the duration of the Assessment. No signs of any amphibians, obligate or facultative, were documented on-site, likely a product of the surrounding habitat landscape. Additionally, it is unlikely that water levels present within each depression would support successful amphibian larval development. While facultative species were encountered, primarily fingernail clams (family: Sphaeriidae, also known as Pisidiidae) and/or air-breathing snails (families: Lymnaeidae, Physidae, and Planorbidae), four out of the five study areas did not contain surface waters for 60 consecutive days during the spring growing season. The fifth study area was contiguous with Millyard Brook and retained water for greater than 60 days as an influx of water from an intermittent stream and therefore was not considered to be Vernal Pool habitat. As required under the *Ordinance*, rainfall during the Assessment was documented to be at least 75% of the average over the last 20 years in Northampton. All encountered facultative invertebrate species are commonly found within forested wetland systems containing partially standing water confined to small scattered depressions and/or stream beds. Both fingernail clams and air-breathing snails are able to survive dry periods by burrowing into the mucky organic soils and leaf litter present within all five on-site Study Areas.

On June 5, 2008, LEC submitted the results of the Vernal Pool Assessment to the Commission. At the June 12, 2008 Public Hearing, the Commission accepted LEC's conclusions which were also corroborated by Hyla Ecological, Inc. in a letter dated June 12, 2008. Hyla Ecological, Inc. also provided oversight during the course of the assessment on behalf of Adam Cohen of the North Street Neighborhood Association.

Proposed Project

As revised, the proposed project involves the construction of twenty-three (23) townhouse condominium units with associated appurtenances, including a roadway system, parking, driveways, utilities, stormwater management areas, and landscaping features on a 5.6± acre project site. The proposed Limit of Work, comprised of entrenched silt fencing reinforced by a "silt sock" at specific locations as detailed on the *Site Plans*, will be situated no closer than 35 feet from the on-site wetland boundaries. Twenty (20) of the twenty-three (23) units, contained in multi-unit buildings, are located in excess of 50 feet from the wetland boundaries, while the majority of the associated roadways, driveways, and parking areas are now located outside the 100-foot Buffer Zone. The proposed project will connect to the City's respective sewer and water systems, thus negating the need for Title V septic systems and private water supply wells.

Stormwater management will be handled on-site through a rain garden (LID design), proprietary treatment chamber, infiltration trench, multiple dry wells, grassed swales, deep sump hooded catch basins, and a detention basin reduced in size from the original proposal. Impervious areas on-site will increase over existing conditions by approximately 1.10 acres from existing conditions and the stormwater management system has been consequently designed to maintain or reduce peak flow rates during the 2-, 10-, and 100-year storm frequencies. Best management practices have been developed to reduce runoff and properly treat water quality. Details of the stormwater management system are comprehensively described within the *Stormwater Drainage Report*, prepared by the Project Engineers, The Berkshire Design Group, Inc., revised on February 19, 2009. A *Proposed Stormwater Management System Operation & Maintenance Plan*, *Stormwater Pollution Prevention Plan*, and *Long-Term Pollution Prevention Plan* are also included as appendices within the *Stormwater Drainage Report*. In summary, the proposed stormwater management system has been designed in conformance with DEP's Stormwater Management Standards.

Mitigation Measures

Proposed mitigation measures, described in a March 6, 2009 letter prepared by the Applicants, include the implementation of an invasive species control program, conversion of existing lawn areas to native vegetation, and native plantings along the entire limit of 35 foot buffer and the side slopes of the detention basin. Specifically, all invasive plants located between the 10-35 foot Buffer Zone as depicted on the *Site Plans* and generally behind (proposed) units 14-21, will be removed by hand and replaced with native vegetation. Existing invasive plants located within this area include, but are not limited to, multiflora rose, honeysuckle, Japanese barberry, burning bush, glossy buckthorn, and Asiatic bittersweet. These species have been identified as "Invasive" by the Massachusetts Division of Fisheries and Wildlife (*A Guide to Invasive Plants in Massachusetts*, 2006) and Massachusetts Invasive Species Advisory Group (http://www.massnrc.org/MIPAG/invasive.htm). In general, the expansion of these species decreases overall plant diversity, especially those species and plant communities native to Northampton and Hampshire County. Resulting changes in plant species composition and decreases in flora diversity invariably reduces overall available food sources, nesting habitat, escape cover, etc. for a wide variety of wildlife species. Aside from *Betula nigra*, all proposed native species have been confirmed to be "Native" to Hampshire County according to *The Vascular Plants of Massachusetts: A County Checklist*, prepared by Bruce A. Sorrie and Paul Somers, MA Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program (1999). Considering the proposed invasive species removal is located upgradient of the distinct breaks in slope, within Buffer Zone areas of generally subtle slopes, plant removal and replanting activities should not destabilize the downgradient slope. Nevertheless, precautions should be made to avoid adversely disturbing the native vegetative cover, stability, and substrate of the 10-35 foot Buffer Zone.

The March 6, 2009 letter also outlines specific Japanese knotweed control measures for an area located behind (proposed) units 11-14. Under existing conditions, Japanese knotweed has formed a dense monoculture between the BVW and lawn area surrounding the on-site single-family dwelling by out-competing native species for space and resources. The proposed management techniques have been designed to implement the best management practices deemed most effective and environmentally sensitive for the treatment and successful eradication of Japanese knotweed. The specific protocol is based on The Nature Conservancy's Best Management Practices. As stated, the management area will be replanted with native species as detailed on the *Site Plans* and closely monitored to insure that Japanese knotweed does not re-establish itself.

And finally, the Applicants are proposing to replace approximately 3,200± square feet of existing lawn areas between the BVW boundary and 35-foot Buffer Zone behind (proposed) units 1 and 11-14 and the planting of native vegetation along the entire 35 foot buffer. Similar to the above, the proposed native plantings are depicted on the *Site Plans*.

Performance Standards

As stated above and thoroughly detailed in the Applicants' supporting materials, the proposed project is restricted to work within and upgradient/outside of the 100-foot Buffer Zone to BVW and IVW. No work will occur within any Wetland Resource Areas protected under the WPA and/or the City of Northampton *Wetlands Protection Ordinance*. Therefore, the project is specifically subject to review under 310 CMR 10.02(2)(b)3.,

in addition to the *Ordinance*. Following review of the original NOI, DEP offered the following, quoting from 310 CMR 10.53(1):

> *...the issuing authority shall impose conditions to protect the interests of the Act identified for the adjacent resource area. The potential for adverse impacts to resource areas from work in the buffer zone may increase with the extent of the work and the proximity to the resource area. The issuing authority may consider the characteristics of the buffer zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on resource areas. Conditions may include limitations on the scope and location of work in the buffer zone as necessary to avoid alteration of resource areas. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the resource area and/or other measures commensurate with the scope and location of the work within the buffer zone to protect the interests of the Act. Where a buffer zone has already been developed, the issuing authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to a resource area to protect the interest of the Act.*

The specific interests of the WPA are stated within 310 CMR 10.01 (2): protection of public and private water supply, protection of groundwater supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish, protection of fisheries, and protection of wildlife habitat. Similarly, the *Ordinance* identifies specific resource area values, including but not limited to public water supply, private water supply, groundwater, fisheries, wildlife, wildlife habitat, rare species habitat, including rare plant species, recreation, agriculture, aesthetic values, flood control, erosion and sedimentation control, storm damage prevention, water quality, and prevention of water pollution.

Section 337-10 of the *Ordinance* outlines specific Performance Standards for proposed projects located within jurisdictional areas of the Commission. Considering that the project has been qualified as "infill development," Section 337-10(B) applies: *to encourage infill development, which is considered more sustainable under the principles of smart growth and generally has a smaller environmental footprint than development in outlying areas, in the Central Business, General Business, Highway Business, Neighborhood Business, General Industrial, Special Industrial, Planned Village, Medical, Urban Residential-B and Urban Residential-C Zoning Districts, within those portions of the Water Supply Protection Overlay District which was zoned industrial as of January 1, 2006, the Conservation Commission hereby waives any of the § 337-10 performance standards that are over and above state law with the exception of the setback requirements in Table (1). The reduced setback requirements in Table (1) shall apply.* For URB zoning districts, Table 1 stipulates a 35-foot "No Encroachment Zone" from wetlands. It should be noted that a 10-foot "No Encroachment Zone" from wetlands *may be allowed at the discretion of the Conservation Commission if the Applicant(s) provides extraordinary mitigation, replication, restoration or open space preservation measures.*

The Applicants have specifically reduced the amount of proposed work activities located within the 100-foot Buffer Zone and have significantly increased wetland Buffer Zone setbacks from the original proposal. As currently proposed, the Limit of Work, comprised of entrenched silt fencing reinforced by a "silt sock" at specific locations as detailed on the *Site Plans*, will be situated no closer than 35 feet from the on-site wetland

boundaries. As proposed, the Limit of Work is located upgradient of any distinct breaks in slope abutting the BVW or IVW. Installation of these erosion control barriers will serve to insure that all construction activities remain as far from the wetland boundaries as possible and prevent any sedimentation that may occur during work activities. All barriers will be maintained during construction and will remain in place until all upgradient and surrounding disturbed areas are stabilized by vegetation as depicted on the *Site Plans*. As currently proposed, the project conforms to the 35-foot "No Encroachment Zone" from wetlands. Erosion/sedimentation control values are also preserved.

With the increased wetland Buffer Zone setbacks, twenty (20) of the twenty-three (23) units, contained in multi-unit buildings, are located in excess of 50 feet from the wetland boundaries, while the majority of the associated roadways, driveways, and parking areas are now outside the 100-foot Buffer Zone. As impervious areas on-site will increase by approximately 1.10 acres over existing conditions, the Project Engineers have designed the stormwater management system to maintain or reduce peak flow rates during the 2-, 10-, and 100-year storm frequencies for flood control interests. The integrated stormwater features, including the rain garden (LID design), proprietary treatment chamber, infiltration trench, multiple dry wells, grassed swales, deep sump hooded catch basins, and detention basin will serve to promote clean water recharge, improve stormwater quality, filter potential pollutants, maintain or reduce runoff volumes, and generally facilitate proper infiltration on-site. The updated *Stormwater Drainage Report* (revised February 19, 2009) along with the *Proposed Stormwater Management System Operation & Maintenance Plan*, *Stormwater Pollution Prevention Plan*, and *Long-Term Pollution Prevention Plan* as appendices, specifically addresses how the proposed stormwater management features will be maintained to insure proper functionality in the long-term. It is noteworthy that the Applicants have committed to prohibiting standard de-icing materials (e.g., salt) as part of their Snow Removal & Management Plan. On that end, LEC would highly recommend minimizing the use of fertilizers and excessive irrigation for the proposed lawn and/or landscaped areas, especially within the 100-foot Buffer Zone. If necessary, LEC would recommend utilizing a granular or organic slow-release nitrogen fertilizer, sparingly, to avoid any potential cumulative nutrient loading. Strict adherence to these measures will protect the interest and values of the adjacent Wetland Resource Areas, including the protection of public/private water supply, groundwater, pollution prevention, aesthetics, and water quality.

The proposed mitigation measures (invasive species control program, replacement of existing lawn with native vegetation, and planting of native vegetation along the entire 35 foot buffer) will enhance the wetlands' Buffer Zone in comparison to existing conditions. Removing the invasive species and replacing with native vegetation will provide additional, new wildlife habitat (e.g., food sources, resting/shelter, breeding, nesting, migratory) for a wide variety of insects, reptiles, mammals, and birds. The proposed plant community has been specifically selected to increase species diversity and function as a food source while providing escape cover for a wide variety of wildlife. The enhanced Buffer Zone will function better to slow and reduce the passage of flood waters during periods of peak flows by providing additional area for temporary flood water storage and by facilitating water removal through evaporation, transpiration, and/or groundwater recharge. The augmented Buffer Zone plantings will better serve to remove or detain any sediments, nutrients (e.g., nitrogen and phosphorous) or toxic substances (such as heavy metal compounds) that may occur in run-off and floodwaters. Furthermore, aesthetics will be greatly enhanced by diverse, native vegetation as opposed to the invasive species currently dominating the Buffer Zone. Thus, the restored Buffer Zone will be enhanced over existing conditions to protect the Wetland Resource Areas and their interests and values. Proposed monitoring

will insure a successful coverage rate for the plantings and prevent invasive species encroachment within the mitigation areas.

Summary

On behalf of the Applicants, Northern Avenue Homes, Inc. and Tofino Associates, Inc., LEC has prepared this letter to supplement the previously submitted NOI for the proposed construction of twenty-three (23) townhouse condominium units with associated appurtenances on a 5.6± acre project site located off Northern Avenue and North Street in Northampton, Massachusetts. Since the original filing, the scope of the project has been significantly reduced in size, most notably by increasing wetland Buffer Zone setbacks, eliminating two units, and reconfiguring the stormwater management system, while incorporating LID design concepts, and reducing the overall amount of impervious surfaces within the 100-foot Buffer Zone. Furthermore, proposed mitigation measures have been significantly augmented to restore and enhance the on-site wetlands' Buffer Zone, invariably providing a long-term net benefit to Wetland Resource Areas. In conclusion, the project has been designed to avoid adverse impacts, in addition to protecting and enhancing the interests and values of the on-site Wetland Resource Areas and associated Buffer Zones.

Should you have any questions or require additional information, please do not hesitate to contact Brian Madden (bmadden@lecenvironmental.com) at 508-746-9491 or Ann Marton (amarton@lecenvironmental.com) at 781-245-2500.

Sincerely,

LEC Environmental Consultants, Inc.

Brian T. Madden

Brian T. Madden
Wildlife Scientist

Ann M. Marton, President
Director of Ecological Services

cc: Northern Avenue Homes, Inc. / Tofino Associates, Inc.