In re: North Shore Wetland, City of Burlington, WET-2000-03, Decision (Sept. 19, 2000)

State of Vermont

WATER RESOURCES BOARD

Re: North Shore Wetland Docket No. WET-2000-03

City of Burlington, Vermont

I. BACKGROUND

On March 22, 2000, the Vermont Natural Resources Council ("VNRC") filed a petition with the Water Resources Board ("Board") captioned as a "Petition for Reclassification and Determination of Buffer of Northshore Wetland in Burlington, Vermont" ("Petition"). The Petition seeks reclassification of the Northshore Wetland from its current classification as a Class Two wetland to a Class One wetland, and seeks a determination of a buffer zone of 300 feet around the Northshore Wetland inside of which only those functions described in Section 6.2 of the Vermont Wetland Rules ("VWR") may be conducted. The so-called "Northshore Wetland" is depicted on USGS Colchester Point quadrangle map (1979 series) immediately south of the Winooski River delta. The Northshore Wetland is also identified on the National Wetland Inventory map (USGS Colchester Point quadrangle) and is accordingly, designated as a Class Two wetland, and therefore protected under the VWR.

Notice of the Petition was sent to those required to receive notice, including adjoining land owners, as well as those known to have an interest in this matter. Moreover, as required by Vermont Wetland Rule 7.4(a), Notice of the Petition was published in the Burlington Free Press. Interested persons were provided more than 30 days from the date of this notice to file written comments and to request a hearing. The following persons filed comments and/or requests for hearing:

Village at Northshore 1 Association, by David Boedy

National Wildlife Federation, Northeast Natural Resource Center, by Kari Dolan

ANR, by Jon Groveman, Esq.

VNRC, by Kelly Lowry, Esq.

At the request of both ANR and VNRC, the Board determined that it would conduct a hearing with respect to this matter. In addition, then Vice-Chair David Blythe, convened a prehearing conference relative to this matter on May 11, 2000, at 1:00 p.m. at the Department of Health offices in Burlington. The following persons attended the prehearing

conference:

ANR, by Jon Groveman, Esq.;

VNRC, by Kelly Lowry, Esq.; and

Village at Northshore 1 Association, by Michelle Ballard.

In early June, 2000, Board counsel was contacted by a representative of the Burlington firm Doremus, Kantor and Daly inquiring as to the status of the Petition. A subsequent call from Matthew Daly, Esq. sought specific information relative to the proceeding, including a copy of the Petition. Mr. Daly indicated that his firm represents John Larkin, who is an adjoining landowner. On June 29, 2000, Matthew Daly, Esq. filed a Notice of Appearance on behalf of John Larkin, the owner of a portion of the property which is the subject of the above captioned proceeding.

A. ISSUES

The Petitioner asserts that the Northshore Wetland is significant for at least eight of the functions identified in Section 5 of the VWR: 5.2 (Surface and Groundwater Protection); 5.3 (Fisheries Habitat); 5.4 (Wildlife and Migratory Bird Habitat); 5.5 (Hydrophytic Vegetation Habitat); 5.7 (Education and Research in Natural Sciences); 5.8 (Recreational Value and Economic Benefits); 5.9 (Open Space and Aesthetics); and 5.10 (Erosion Control through Binding and Stabilizing the Soil). Moreover, both ANR and Petitioner claim that in order to effectively protect the functions identified at Sections 5.4 and 5.9, the Board must designate a buffer extending 300 feet from the perimeter of the wetland. The participants to this proceeding have not challenged the propriety of the wetland delineation which is quite clear and is well marked in the field. Accordingly, there was no need to have such a delineation done as a precursor to hearing the merits of Petitioner's claims.

B. NATURE AND SCOPE OF THE PROCEEDING

Wetland reclassification decisions, rendered by the Board pursuant to Section 7 of the VWRs, are administrative determinations and not contested cases. The Board conducts a hearing on a reclassification petition in order to gather as much information as possible concerning the characteristics of the subject wetland for the purpose of assessing its significance for the functions identified in Section 5 of the VWRs. Therefore, the Petitioner and the owner of property on which the wetlands are located, as well as ANR and any adjoining property owners or interested persons are entitled to present testimony and offer exhibits either in support of or in opposition to the petition based on a consideration of the Section 5 criteria. Although the opponents of a petition are not entitled to cross-examine a petitioner or other supporters of a petition, they may present argument, their own witnesses, and exhibits to rebut any statements offered in support of the proposed reclassification. The Board bases its decision on consideration of the entire record of the proceeding, including all timely filed written comments.

On July 18, 2000, the Board convened a hearing at the Contois Auditorium in Burlington, Vermont, and conducted a site visit of the Northshore wetland. Those persons participating provided public comment and documentation either in support of or opposition to the

Petition. On or before July 28, 2000, all participants were required to submit any additional written comments. Several participants supplemented their previously filed comments and others filed comments for the first time. To the extent that any proposed findings of fact and conclusions of law are explicitly approved below, they are granted; otherwise, they have been considered and are denied. *Petition of Village of Hardwick Electric Department*, 143 Vt. 437, 445 (1983).

II. FINDINGS OF FACT

A. *Description of the wetland and its characteristics*

1. The Northshore Wetland consists of approximately 15 acres and is located immediately south of the Winooski River delta in the City of Burlington. Although characterized as a single wetland, the Northshore Wetland is actually comprised of three wetland areas, each of which is represented on the National Wetland Inventory maps as a separate polygon.

2. The three wetland areas are contiguous and form one distinct wetland complex, typically referred to, and characterized herein, as the "Northshore Wetland." Prior to the Board's action contained in this Order, the Northshore Wetland had been designated as a Class Two wetland with a 50 foot buffer zone.

3. In 1988, the ANR, Wetlands Office, put together a list of approximately 150 wetlands that should be considered for Class One designation. The Northshore Wetland was among those listed.

1. Among the potential Class One wetlands identified by ANR in 1988, the Northshore Wetland is unique in that it is within the state's most densely populated city and highly accessible to Burlington residents. Moreover, it is easily accessible to those who use the Burlington bicycle path and it is connected to both the mouth of the Winooski River and Lake Champlain.

2. The Northshore Wetland is not an isolated resource but is juxtaposed in close proximity to the Winooski River delta, and the Derway Island and Halfmoon Cove wetland complexes. These natural areas are significant independently for fish, wildlife, and migratory bird habitat, but in concert with the Northshore Wetland, they provide a rich ecosystem that provides outstanding and important habitat for a myriad of sensitive, wetland-dependent wildlife.

B. *Adjacent development and lands directly affected by the reclassification and buffer zone designation.*

1. John Larkin is the owner and developer of certain real property located adjacent to the Northshore Wetland consisting of approximately 18 acres. Mr. Larkin owns land that will be directly affected by the establishment of buffer zone which will, pursuant to

this Order, extend out as much as 300 feet from the delineated wetland boundary.

2. Mr. Larkin has received approval from the City of Burlington's Planning Commission for the development and construction of a multi-unit housing project on his property.

3. In August, 1999, Mr. Larkin applied for permits to the District IV Environmental Commission under 10 V.S.A. §§6001-6092 (Applications #4C0626-5A and #4C0626-6C).

4. Mr. Larkin is a successor in interest to Northshore Development, which had previously secured a Development Agreement with the City of Burlington relative to the parcel under consideration (See Consent Judgment dated April 26, 1989 between Northshore Development and Northshore Partnership, Inc. and the City of Burlington Chittenden Superior Court, Docket No. S103-88CnC).

C. *Performance of Wetland Function 5.1 (water storage for flood water and storm runoff)*

1. The Northshore Wetland, being adjacent to Lake Champlain, has a low potential to fulfill the flood storage function under the VWR. This function is performed by the lake itself.

D. *Performance of Wetland Function 5.2 (surface and ground water protection)*

1. The Northshore Wetland is significant for surface and groundwater protection. Specifically, the wetland provides improved water quality in Lake Champlain through nutrient reduction, sediment retention, and groundwater discharge.

2. The seasonal nutrient retention and transformation and sediment detention function of the Northshore Wetland are especially important given the near-wetland environment of: (1) ecologically important aquatic habitats; (2) use of Lake Champlain for drinking water supplies; (3) the importance of recreational values in Lake Champlain; and (4) the presence of fish spawning areas nearby and within the wetland.

3. With respect to nutrient reduction, the Northshore Wetland has characteristics commonly associated with wetlands that act as a sink (on a net annual basis) for total nitrogen, and to a lesser degree orthophosphorus. These characteristics include the shallow flow path of water above the plants along the length of the wetland which serves to enhance denitrification as well as the retention of phosphorus associated with marsh habitats during the growing season.

4. The Northshore Wetland exhibits a very significant sediment retention function. Situated just south of the Winooski River delta, such retention is directly attributable to both the reduction in velocity of water as it moves through the wetland and the presence of wetland vegetation at least 10 feet in width.

5. As a result of this sediment deposition and collection process, the Northshore Wetland includes a very high-quality deep rush marsh, lakeshore grassland, and an excellent lake sand beach. Lake sand beaches are a rare habitat in the State of Vermont.

6. This source of sand at the river mouth and its movement and deposition by river and lake currents has led to the creation of associations of natural communities that are not found anywhere else in Vermont.

7. There are only three rivers flowing into Lake Champlain that have created extensive sand deposits at their mouths: the Lamoille, the Missisquoi, and the Winooski.

1. Extensive lakeside wetlands occur on the deltas formed by these rivers, and in some areas these wetlands are adjacent to sandy beaches, floodplain forests and dunes. Sand beaches and sand dunes are rare communities in Vermont, in part because the environmental settings in which they develop are rare and also because many such settings have been altered by development.

E. *Performance of Wetland Function 5.3 (fisheries habitat)*

1. The Northshore Wetland is significant with regard to the function of providing fisheries habitat. The following species have been observed in the wetland: yellow perch (*Perca flavescens*); pumpkinseeds (*Lepomis gibbosus*); sturgeon (*Acipenser fulvescens*); minnows, carp (*Cyprinus carpio*); and bullheads (*Ictalurus* spp.). It is likely that other species also occur within the wetland or immediately offshore.

2. While some fish species may spend long periods in the Northshore Wetland, others may use it for shorter periods for a specific purpose or resource. Among the purposes for which the Northshore Wetland may be used are as spawning grounds, nursery habitat, cover, and food resources.

3. The Northshore Wetland also functions as a varied and productive littoral zone where a multi-canopied, multi-tiered vegetative community supports a rich food chain.

F. *Performance of Wetland Function 5.4 (wildlife and migratory bird habitat)*

1. The Northshore Wetland provides the following significant habitat functions for wildlife:

    1. Habitat for breeding, nesting and brood-rearing of waterfowl including mallard, black ducks, wood ducks, common goldeneye, hooded merganser, and common merganser;
    2. Habitat for resting, staging, and roosting of migrating waterfowl including greater scaup, lesser scaup, bufflehead, goldeneye, and red-breasted merganser;
    3. Provides important feeding habitat for wading birds including great blue herons,

green herons, American bitterns, least bitterns, Virginia rails, sora and black-crowned night heron;
4. Provides important feeding, resting, and staging habitat for migrating shorebirds including solitary sandpiper, least sandpiper, greater yellowlegs and lesser yellowlegs, spotted sandpiper, dunlin, and common snipe;
5. Habitat for feeding and movement of mink, otter, beaver, and muskrat.

2. The above is a partial list of the species known to use the Northshore Wetland. A more comprehensive listing under VWR Section 5.4(a) "Waterfowl and Other Birds" would demonstrate that at least 59 bird species are known to use the wetland. In addition to the mammals listed above, mice and voles, rabbits, gray squirrels, skunk, raccoons, and red fox are known to inhabit or use the Northshore Wetland.

3. The exposed sand and mudflats associated with the Northshore Wetland make it extremely valuable for wetland-dependent species such as yellowlegs, plovers, and sandpipers. These types of habitats are limited in Vermont.

4. Based on the habitat characteristics associated with the Northshore Wetland, the following amphibians (See VWR Section 5(c)) are likely to occur in the wetland: bullfrog; green frog; leopard frog; American toad; blue spotted salamander; gray tree frog; wood frog; and spring peeper.

5. Under VWR Section 5.4(d) "Reptiles", the Northshore Wetland provides suitable habitat for map turtles, painted turtles, snapping turtles, as well as the following types of snakes: garter, brown, red-bellied, and the northern water snake.

6. The Northshore Wetland scores 88 out of 105 points possible using the full Wildlife Wetland Evaluation Model of Golet, which addresses wetland characteristics such as the diversity of community types, size of the wetland, surrounding land uses, and the interspersion and juxtaposition of vegetative types.

G. *Performance of Wetland Function 5.5 (hydrophytic vegetation habitat)*

1. The Northshore Wetland is comprised of high quality Deep Rush Marsh and Lakeside Grassland communities adjacent to Lakeside Floodplain Forest and Lake Sand Beach areas.

2. While there are many larger wetlands associated with Lake Champlain, including others like the Northshore Wetland, few exhibit a combination of shallow marsh, extensive sand beach, open lake adjacent to the wetland and rare plants.

3. The significant hydrophytic vegetation habitat features of the Northshore Wetland include the following:

    1. A Deep Bulrush Marsh occurs in the deepest water of the wetland. This natural community type is widespread in Vermont, with the largest examples occurring along the shores of Lake Champlain. The community is dominated by river

bulrush (*Scirpus fluviatile*), with lesser amounts of water plantain (*Alisma plantago-aquatica*), and arrowleaf (*Saggitaria latifolia*). The dominant bulrush in this community is well adapted to withstanding the erosive force of wave action.

2. Lakeshore Grassland is the community type that occurs in areas of seasonally flooded sandy shoreline. This is a rare community type in Vermont, associated only with the shores of Lake Champlain. In the Northshore Wetland, this community is dominated by freshwater cordgrass (*Spartina pectinata*). Other species include American bulrush (*Scirpus americanus*), marsh horsetail (*Equisetum fluviatile*), and purple loostrife (*Lythrum salicaria*). There are scattered black willow (*Salix nigra*) and buttonbush (*Cephalanthus occidentalis*) in this community. The substrate shifts as sands are deposited by river flow or moved by lake waves and currents.

3. Lake Sand Beach extends for approximately one half mile along the shoreline at the Northshore Wetland. The lower portion of the Lake Sand beach qualifies as wetland, due to the presence of soil saturation and wetland vegetation. Lake Sand Beach is a rare natural community type in Vermont, with the largest examples on the northern shore of Lake Champlain and several other examples on lakes in northeastern Vermont. The wetland portion of the beach is sparsely vegetated with silverweed (*Potentilla answerina),* freshwater cordgrass, and species of flatsedge *(Cyperinus spp.).* The beach substrate is kept mostly open by shifting sand, wave action, ice scouring, seasonal flooding, and deposition of woody debris from the lake.

4. Lakeside Floodplain Forest occurs as a narrow band on the northern end of the wetland, just below the upland forested dune community. Lakeside Floodplain Forest is an uncommon natural community in Vermont with distribution almost entirely restricted to the shores of Lake Champlain. Tall silver maple (*Acer saccharinum)* and some cottonwood *(Populus deltoides)* dominate this forested wetland community. Lakeside Floodplain Forests are flooded in the spring, but for shorter duration than the other wetland communities at Northshore Wetland. Silver maple and cottonwood are well adapted to this seasonal flooding. There is abundant woody debris in the floodplain forest that accumulates during spring flooding storms with strong winds from the west.

5. The rare to uncommon Pursh's bulrush *(Scirpus purshianus)* occurs in the emergent portion of the Northshore Wetland near the shore.

4. The association of Deep Rush Marsh, Lakeshore Grassland, Lake Sand Beach, Lakeside Floodplain Forest, and forested sand dune occur only in a few locations on the shores of Lake Champlain and are closely associated with the lake and ecological processes derived from the lake, including primarily, sand deposition, wind, wave action, and flooding. The Northshore Wetland and its associated natural communities is one of the best of its kind in Vermont.

H. *Performance of Wetland Function 5.6* (*threatened and endangered species habitat*)

1. At the present time, there are no known threatened or endangered species that either inhabit or use the Northshore Wetland.

I. *Performance of Wetland Function 5.7 (education and research in natural sciences)*

1. The nearness of the Northshore Wetland to the City of Burlington and its accessibility from the Burlington Bike Path make this wetland unique in the state. This accessibility enhances the wetland's value as an educational resource.

2. The Northshore Wetland is used by educators and students to demonstrate the principles of wetland ecology and limnology.

3. At least one scientific paper, a UVM student's Masters thesis, has been written concerning the Northshore Wetland.

J. *Performance of Wetland Function 5.8 (recreational value and economic benefits)*

1. The Northshore Wetland is used for fishing, wildlife viewing, and it provides habitat for migratory bird life including ducks and geese that are hunted in the nearby Half Moon Cove Wildlife Management Area and throughout the state, including across the Winooski River in Colchester.

2. The ease of access to the site from Lake Champlain, the Winooski River, and the Burlington bike path poses both concerns for the continued protection of the sensitive habitat uses of the resources and excellent opportunities to both observe the resource and enjoy it in a more participatory manner.

3. Canoeists, kayakers, boaters, fishers, and hunters are provided with ample opportunities to access and enjoy the Northshore Wetland. Nearby public access is provided by the State Department of Fish and Wildlife at the mouth of the Winooski River.

K. *Performance of Wetland Function 5.9 (open space and aesthetics)*

1. The Northshore Wetland can be readily viewed by the public from three different perspectives. Walkers, runners, and bikers can view all the natural communities in the wetland from the Burlington Bike Path. The beach owned by the City of Burlington provides for closer viewing of the wetland, including the opportunity for bird watching. Kayakers, canoeists, and other boaters can view the wetland from the open shallow waters of Lake Champlain, with close boat access provided by the nearby Fish and Wildlife Department access area.

2. The Northshore Wetland is a combination of open and sparsely vegetated sand, shallow and deepwater emergent wetland, and forested wetland, all with a backdrop of the open water of Lake Champlain. There is considerable seasonal variation in the wetland that greatly enhances its aesthetic qualities, including views of spring high water levels and crashing waves during storms, as well as the changing colors of the emergent wetland from spring and summer greens, summer flowers, and brown persistent stalks during the fall and winter. Waterfowl and wading birds can be frequently seen in the wetland.

3. The Northshore Wetland is a prominent natural feature in an area dominated by urban development. This wetland is a natural area in the classic sense, providing exceptional ecological value in its contribution to Vermont's natural heritage (wildlife and migratory bird habitat and hydrophytic vegetation habitat) as well as providing exceptional and irreplaceable open space and aesthetic values in an urban environment. The wetland is a striking contrast to the adjacent and surrounding upland that is dominated by human development and land uses.

L. *Performance of Wetland Function 5.10 (erosion control through binding and stabilizing the soil)*

1. The Northshore Wetland is significant for this function due to the presence of the forested floodplain/wetland edge along a lake and dense erect vegetation greater than 20 feet wide.

2. The wetland is effective in sediment retention (discussed in Findings 13-19) above. Wind and fetch across Lake Champlain creates waves that head inland and are intercepted by the wetland, thus reducing wave-related erosion in the banks of the Lake.

M. *Buffer Zone*

1. The wildlife and migratory waterfowl is rich and varied in the Northshore Wetland despite its location in a relatively urban setting. Many of the individual species that inhabit or use the wetland are particularly sensitive to human disturbance. These species include the mink and otter, migratory waterfowl, and herons and shorebirds.

2. The New Hampshire publication "Buffers for Wetlands and Surface Waters" provides a list of recommended buffer widths and suggests specifically, with respect to habitat requirements of mink, otter, and feeding habitat of beavers and nesting waterfowl, buffer widths of 90-100 meters (approximately 300 feet).

3. A document entitled "Wetland Buffers" produced by Kim Royar of the Vermont Department of Fish and Wildlife recommends desirable buffers for small mammals of 250 feet, and for reptiles and amphibians of 200 feet in order to accommodate nesting, migration, and foraging.

4. To optimize the value of buffer zones for wildlife, perhaps the most important parameter is width. In general, the larger, or wider a buffer zone is, the more valuable it is for wildlife habitat.

5. A wider upland buffer typically mitigates adverse water quality impacts as well and provides such other benefits to wildlife as the reduction of human access to the site and creation of a greater distance between wetlands and surrounding human development.

III. CONCLUSIONS OF LAW

The Northshore Wetland is a significant wetland, and as such, the Board has jurisdiction over it pursuant to 10 V.S.A. §905 (7)-(9) and the Vermont Wetland Rules. Among the responsibilities with which the Board is charged, is the determination of its proper classification.

The Northshore Wetland is currently classified as a Class Two wetland under Section 4.2(b) of the Vermont Wetland Rules. The buffer associated with the Northshore Wetland is currently 50 feet.

The above listed Findings of Fact, the Board's site visit and record, and documentation in support of the reclassification of the Northshore Wetland including the following, strongly support the Board's determination that the Northshore Wetland exhibits the exceptional characteristics of a Class One wetland:

1. A modified version of the Wetland Evaluation Technique (WET) by Parsons, Thompson, and Hudspeth;

2. The Vermont Wetland Evaluation Form, by Parsons;

3. The Wetland Field Form for Nutrient and Sediment Retention Functions, by Parsons;

4. A general ecological function analysis by the Vermont Agency of Natural Resources; and

5. A general ecological function analysis by Rose Paul.

Pursuant to Section 4.4(b) of the VWRs, the following functions identified in Section 5 of the VWRs make the Northshore Wetland significant: 5.2 (Surface and Groundwater Protection); 5.3 (Fisheries Habitat); 5.4 (Wildlife and Migratory Bird Habitat); 5.5 (Hydrophytic Vegetation Habitat); 5.7 (Education and Research in Natural Sciences); 5.8 (Recreational Value and Economic Benefits); 5.9 (Open Space and Aesthetics); and 5.10 (Erosion Control through Binding and Stabilizing the Soil). With respect to Functions 5.1 and 5.6, the Board concludes that the Northshore Wetland is not sufficiently significant to warrant protection under the VWRs for these functions.

With respect to Functions 5.2, 5.3, 5.4, 5.5, 5.8, 5.9 and 5.10, not only is the Northshore Wetland significant, but it is exceptional and irreplaceable in its contribution to Vermont's natural heritage.

The association of natural communities in the Northshore Wetland is irreplaceable. These natural communities have developed during the past thousands of years since the retreat of the glaciers and the lowering of the once-higher lake levels. Although all of the natural communities in this wetland complex have been changed somewhat by human uses and management, they are now primarily under the influence of natural ecological processes (climate, succession, and natural disturbance).

IV. ORDER

On the basis of its record in this proceeding, the Board has determined that the Northshore Wetland shall be reclassified from a Class Two to a Class One wetland. The Board has determined that the Northshore Wetland is exceptional and irreplaceable in its contribution to Vermont's natural heritage due to its values for the functions of hydrophytic vegetation habitat, education and research in the natural sciences, and open space and aesthetics. Therefore, it merits the highest level of protection available under the VWRs.

The Board has determined that in order to protect functions 5.2, 5.3, 5.5, 5.7, 5.8, and 5.10, the 100 foot buffer that is in force as a function of this reclassification would suffice. However, because of the requirement to adequately protect functions 5.4 (wildlife and migratory bird habitat) and 5.9 (open space and aesthetics) a buffer zone shall be configured as follows to enhance and protect those functions:

a buffer relative to the Class One North Shore wetland shall extend 300 feet from the delineated wetland boundary except where the easterly side of such buffer would encroach upon the City of Burlington recreational path, in which areas the buffer shall extend from the delineated boundary to a line parallel to, and 25 feet westerly from the centerline of the City of Burlington recreational path (as it exists as of the date of this decision). In no area shall such buffer extend beyond 300 feet from the delineated wetland boundary. Because the buffer zone established by the Board is irregular in shape and because it will directly define the allowed uses upon land currently held in private ownership, the Petitioner, in conjunction with the ANR, shall memorialize the configuration and location of the buffer zone by providing a topographical map that depicts the actual footprint of the Northshore Wetland as well as the newly established buffer zone. Such depiction shall be filed not later than 60 days from the date of this decision.

In addition to the map described above, ANR is directed to update the Vermont Significant Wetland Inventory map and the underlying Geographic Information System (GIS) data layer accordingly.

Dated at Montpelier, Vermont on this 19th day of September, 2000.

WATER RESOURCES BOARD

/s/ David J. Blythe

_____

David J. Blythe

Concurring:

Jane Potvin

Barbara Farr

John Roberts