

**State of Vermont
WATER RESOURCES BOARD**

**In re: Appeal of Larivee
Docket No. CUD-92-09**

**Authority:
10 V.S.A. § 1269**

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

This decision pertains to a conditional use determination issued to Oon Teong Ko by the Agency of Natural Resources, authorizing the construction of five driveways within a Class Two wetland and buffer zone for an eight-lot residential subdivision located between Lake and Maquam Roads in Swanton, Vermont. As is explained below, the Water Resources Board has determined, consistent with the requirements of Section 8 of the Vermont Wetland Rules, that the requested use has and will have an undue adverse impact on the Class Two wetland and its buffer zone which has not been properly mitigated. Therefore, the ANR's decision finding no undue adverse impact is reversed, and the CUD issued to Mr. Ko is declared void.

I. SUMMARY OF PROCEEDINGS

On May 25, 1992, the Wetlands Office of the Department of Environmental Conservation, Agency of Natural Resources ("ANR"), granted Conditional Use Determination ("CUD") #92-142 to Oon Teong Ko ("applicant") of Montreal, Canada. This CUD authorizes the construction of five driveways within a Class Two wetland and its associated buffer zone to serve an eight-lot subdivision on land owned by the applicant's wife, Wye Meng Cheong Ko, in Swanton, Vermont.

On or about June 3, 1992, Louise Lampman Larivee, a member of the Sovereign Abenaki Nation of Missisquoi, filed a written notice of appeal with the ANR. This notice was referred to the Water Resources Board ("Board") and subsequently perfected.

The appeal was filed pursuant to 10 V.S.A. § 1269 which authorizes the Board to hear de novo matters determined by the Secretary of ANR. Pursuant to this statute, the Board may issue an order affirming, reversing or modifying the act or decision of the Secretary.

Public notice of the appeal was issued on July 1, 1992, and published in the St. Albans Messenger, July 7, 1992. Two prehearing conferences were convened in this matter: on July 23, 1992, in Montpelier, Vermont, and on April 14, 1993, in Essex Junction, Vermont.

Those persons granted party status in this proceeding were Ms. Larivee, the appellant, on behalf of the Sovereign Abenaki Nation

of Missisquoi; the applicant, Mr. Ko, by power of attorney for his wife; and the ANR. Counsel for the appellant was Arthur J. Ruben, Esq.; counsel for the applicant was the firm of Lisman and Lisman; and counsel for ANR was Anne Whiteley, Esq.

The Board convened a de novo hearing on April 20, 1993, in Swanton, Vermont. It conducted a site visit of the Ko property and subject wetland. It also heard opening statements by the parties. The Board recessed to address several threshold jurisdictional issues raised by the parties, issuing a Memorandum of Decision on Preliminary Issues on July 13, 1993. The Board reconvened the hearing on August 25, at which time it conducted a second site visit. The hearing was continued to September 23, 1993.

After receipt of evidence and closing arguments, the Board recessed the matter pending the submission of proposed findings of fact and conclusions of law, review of the record, deliberation and decision. On October 27, 1993, the applicant and appellant each filed proposed findings of fact, conclusions of law, and orders. The Board deliberated on this matter on November 19 and December 15, 1993, and again on January 5 and 27, February 10, March 3 and 10, and 24, 1994. On March 24, 1994, following a review of the evidence and the parties' filings, the Board declared the record complete and adjourned the hearing.

This matter is now ready for decision. The following findings of fact and conclusions of law are based exclusively on the record developed in this proceeding. To the extent any proposed findings of fact and conclusions of law are included below, they are granted; otherwise, they are denied.

II. ISSUE

The principal question before the Board is whether a CUD should be issued for the applicant's construction of five driveways in a Class Two wetland and associated buffer zone.

The appellant asserts that the project will have an undue adverse impact on a number of protected wetland functions and, therefore, the applicant's CUD request should be denied. The appellant specifically identifies the following functions as being impacted by the proposed development: 5.2 (Surface and ground water protection); 5.4 (Wildlife and migratory bird 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 soil).

The applicant asserts that the subject wetland is significant for only two wetland functions and that it has been designed to have

minimal impact on these functions. The affected functions are: 5.1 (Water storage for flood water and storm runoff) and 5.2 (Surface and ground water protection).

III. FINDINGS OF FACT

A. Site and Project Description

1. The applicant's wife, Wye Meng Cheong Ko, owns a tract of land in Swanton, Vermont, directly south of Lake Road and east of, but not contiguous with, Maquam Road. The applicant and his wife propose to subdivide approximately eighty (80) acres of this tract ("the Ko property") into eight lots for residential housing ("the subdivision").
2. Historically, the Ko property was known as the Lampman Farm, a traditional gathering place for the Abenaki people residing in the Swanton area. Martha Morits Lampman, known as Grandma Lampman, was an Abenaki matriarch. The cellar holes of the house and barn of her homestead are located on Lots 7 and 8 of the subdivision. The appellant and many other members of the Sovereign Abenaki Nation of Missisquoi are direct descendants of Grandma Lampman. They and their ancestors have used the site for hunting, food and medicine gathering, and various other purposes including ceremonial activities, since before European occupation of the area in the mid-seventeenth century.
3. Approximately forty-eight (48) acres of the area proposed for the subdivision is wetland. It is part of a large wetland complex east of Lake Champlain and about two miles south of the Missisquoi National Refuge. It is a forested wetland dominated by red maple and alders, and characterized by fine sandy soils and a high water table.
4. The wetland located on the Ko property is contiguous to wetlands delineated on the National Wetlands Inventory (NWI) maps of the State of Vermont, published by the U.S. Fish and Wildlife Service (1978) and identified as Palustrine Forested Broad Leaf Deciduous wetlands (PF01) ("related wetland complex"). On the basis of its contiguity with NWI-mapped wetlands, the wetland located on the Ko property is presumed to be a significant wetland -- a Class Two wetland with a fifty-foot buffer zone -- under Sections 4.2 and 4.3 of the Vermont Wetland Rules.
5. The Secretary of the ANR may authorize certain activities, including the placement of fill and construction of roads and utilities for residential development, in a Class Two

wetland under certain limited circumstances in accordance with standards specified in Section 8 of the Vermont Wetland Rules. A person may apply for such approval by completing a CUD application supplied by the ANR.

6. On April 16, 1992, the applicant through his representative, Schreib Engineering, Inc., of East Fairfield, Vermont, filed with the ANR an application for a CUD. The application requested authorization for the construction of eight driveways and two utility crossings through the Class Two wetland and buffer zone located on the Ko property. The driveways and utility crossings were designed to serve the subdivision.
7. The applicant submitted with its application, a subdivision plan prepared by Steven M. Brooks of Brooks Land Surveying, Inc. of St. Albans, Vermont, and a wetlands design map prepared by G. Norman Schreib, P.E. (Mechanical Engineer), of Shreib Engineering, Inc., of East Fairfield, Vermont.
8. Review of the project for its impact on protected wetland functions and wetlands delineation was performed by Natural Resource Consulting Services (NRCS) of Grand Isle, Vermont, and Concord, New Hampshire. In 1991, Mr. Spear, principal of the firm, and his employee performed on-site delineation of the wetland. Mr. Brooks subsequently prepared the survey of the wetland boundary based on NRCS's measurements. No delineation was made of the fifty-foot protective buffer zone.
9. The accuracy of the wetland delineation performed by the applicant's consultants cannot be determined due to the lack of supporting field data and inadequate description of methodology provided by the applicant in the CUD application and evidence.
10. As shown on the applicant's maps and observed on the Board's site visits, the site of the proposed subdivision consists of two discontinuous parcels of land south of Lake Road. Each parcel has frontage on the south side of Lake Road. The western parcel contains 30.3 acres of land, which the applicant proposes to subdivide into three lots, numbered respectively 1, 2, and 3. The eastern parcel contains 50.48 acres of land, which the applicant proposes to divide into five lots, numbered respectively 4 through 8.
11. Each lot is designed to contain one single-family house, to be served by a separate well and septic tank located on each respective lot, with the following exceptions: that the primary and replacement leach fields for Lots 1, 2, 3 and 8 will

be located on property not owned by the applicant, pursuant to deeded septic easements; the primary and replacement fields for Lot 4 will be located on Lot 6; and the primary and replacement fields for Lots 5, 6, and 7 will be located on Lot 7. The applicant proposes that each house, well, septic system, and primary and secondary replacement field will be located on upland, not in the Class Two wetland and its associated buffer zone.

12. Each of the two parcels proposed for subdivision by the applicant contains an island of upland surrounded by wetland. Each parcel has a strip of wetland running east-west along its entire frontage on Lake Road thereby isolating the upland area from Lake Road. The rear, or southern, portion of each parcel also contains areas of wetland. Therefore, the upland portions of the two parcels cannot be developed without road access across the wetland from Lake Road.
13. On May 25, 1992, the ANR issued Conditional Use Determination #92-142. The CUD authorized the placement of fill in the Class Two wetland for the construction of five driveways to access eight lots: one to service Lot 1, one to service Lots 2 and 3, one to service Lot Four, one to service Lots 5 and 6, and one to service Lots 7 and 8. The CUD also required the rerouting of the two proposed utility lines so as to avoid any portion of the wetland.
14. After the issuance of the CUD but before this appeal was heard by the Board, the applicant constructed four of the authorized driveways.
15. Each driveway fill consists of a ridge of crushed stone roughly two feet higher than the native surface of the wetland. The crushed stone is covered with a layer of sand and more crushed stone of a smaller grade. An 18-inch metal culvert crosses each fill under the surface of the driveway, at approximately the level of the native ground.

B. Impacts of the Project on Wetland Functions and Mitigation

Function 5.1 Water storage for flood water and storm runoff

16. The subject wetland provides temporary storage of floodwater and stormwater runoff. The driveways, authorized by Conditional Use Determination #92-142, will have a minimal impact on this function.
17. The Ko property is located only a few hundred feet from the shore of Lake Champlain.

18. Stormwater and floodwater runoff from the wetland on the Ko property reach Lake Champlain through a stream running parallel to Lake Road and then under the road near where the road meets Maquam Shore Road.
19. There is little development between the wetland on the Ko property and Lake Champlain. Between the Ko property and Lake Champlain is the narrow Bellrose tract, Maquam Shore Road, and a strip of beachfront property.
20. The placement of fill for driveways constitutes a reduction of approximately 3 percent of the 48 acres of wetland located on the Ko property. This wetland is part of a larger wetland complex with water storage capacity.
21. The driveways will have only a minimal impact on the wetland's capacity to reduce either the magnitude or frequency of risks to public safety or of damage to public or private property due to flood water or stormwater runoff.

Function 5.2 Surface and ground water protection

22. The driveways, authorized by Conditional Use Determination #92-142, will have more than a minimal impact on the ability of the wetland to protect and enhance the quality of surface water.
23. The wetland on the Ko property is hydrologically connected with Lake Champlain through culverts and a stream.
24. Lake Champlain has experienced algal bloom due to contaminant input from both natural and human sources of nitrogen and phosphorus. In areas of the lake where nitrogen has increased, algal blooms have become a serious problem.
25. Wetlands characterized as red maple swamps are known to tie up nutrients such as nitrogen and phosphorus thereby decreasing the release of these nutrients to Lake Champlain.
26. The applicant has not provided any information about the degree to which the wetland is rated for nutrient retention and removal or for sediment trapping using the Wetland Evaluation Technique specified in Sections 2.30 and 5.2(e) of the Vermont Wetland Rules. Therefore, it must be assumed that the wetland on the Ko property is significant in its performance of nutrient retention.
27. The driveways, even with their 18-inch culverts, affect the natural flow of water from the wetland to Lake Champlain along

Lake Road. Water tends to pool in some areas and increase in flow in others; retention time is thereby reduced and erosion facilitated.

28. Pooling of deep water behind the driveways will adversely impact the wetland ecosystem's ability to assimilate nutrients due to sedimentation.
29. Siltation from soil disturbance at the site and erosion of fill from the driveways, witnessed by the Board on its site visits, is likely to decrease the overall amount of wetland habitat where nutrient retention and breakdown does and can occur.
30. Water quality is dependent to a large extent upon microbial activity in the wetland ecosystem. Changes in water flow and sedimentation attributable to the driveways will tend to alter the biochemical cycle in the soils at the Ko property.
31. The chemistry of the materials used by the applicant for fill in constructing the driveways has a high pH in contrast with the characteristically low pH of the wetland. As the fill material erodes into the wetland, it will change the pH of the soil which has the potential of changing the availability of certain nutrients and thus the ability of some existing plants to remain in these wetlands.
32. Despite the installation of silt fences, the driveways presently show evidence of erosion and slumping. They will require periodic maintenance, including the replacement of eroded fill material. As presently constructed, the driveways will continue to be a contributing source of highly erodable material, thereby compounding the adverse impact on the wetland's ability to protect the quality of surface water.
33. In addition to affecting the water quality of Lake Champlain, changes in the water chemistry and plant community within the Ko wetland may have an adverse cumulative impact on animal species historically associated with the area.
34. The applicant has provided no data, analysis, or a mitigation plan to support his contention that the driveways will have only a minimal impact on surface and groundwater protection.

Function 5.3 Fisheries habitat

35. This function was not identified by the appellant as the subject of her appeal. Therefore, the Board took no evidence on this function.

Function 5.4 Wildlife and migratory bird habitat

36. The driveways, authorized by Conditional Use Determination #92-142, will have more than a minimal adverse impact on important wildlife habitat, especially habitat for small mammals.
37. Pools of standing water and suitable nesting cavities in dead trees observed at the site during the site visits may indicate habitat for waterfowl use and nesting by wood duck, black duck, and other species, although no evidence was presented that the site supports one or more breeding pairs of waterfowl or one or more broods of waterfowl. Bird species sighted in and around the area of the Ko property include two species listed in the Vermont Wetland Rules, Section 5.4 (a)(4): the Northern Harrier and the Bluegray Gnatcatcher. However, there is insufficient evidence to find that the Ko property supports or has the habitat to support one or more breeding pairs of these bird species.
38. The Department of Fish and Wildlife, ANR, does not identify the Ko property as a deer wintering yard. However, a deer yard is located south of the Ko property and white-tailed deer use the area of the proposed subdivision, including the wetland, as a corridor and as a source of browse during much the year, especially during the growing season. There is a white pine stand in the upland portion of the Ko property within 1000 feet of the driveways and the Board observed evidence of deer browse and droppings in the area of the subject wetland during the course of its site visits. However, the wetland, itself, does not appear to be necessary feeding habitat for white-tailed deer.
39. The Ko property does not provide feeding habitat for black bear or moose, and these animals have not been seen at the property.
40. For generations, Abenaki people, especially members of the Lampman family, have trapped muskrat and mink at the Ko property. These species are identified in Section 5.4(b)(3) of the Vermont Wetland Rules. In recent times, muskrat have been observed in the area of the driveways. The wetland does not contain an active beaver dam, a beaver lodge, or evidence of use by adult beavers. However, beaver and evidence of beaver have been sighted in the wetland complex to the east.
41. Historically, the flooded area between Lake Road and the upland has been, a safe aquatic travel corridor for small mammals between the wetland complex to the east and Lake Champlain.

42. With the construction of the driveways, this corridor has become highly fragmented. The driveways are physical barriers to the movement of small mammals, and the 18-inch inch culverts under each driveway are not conducive to aquatic passage of wildlife.
43. The driveways adversely impact wildlife in the area by facilitating human access to, and fragmentation and disturbance of, the wetland. Moreover, because the driveways will service residences, human activity within and proximate to the corridor area will increase, with the effect of displacing native fauna by domestic animals.
44. The species of amphibians listed in Section 5.4(c)(2) of the Vermont Wetland Rules have not been sighted at the subject wetland, although vernal pools at the site is evidence of habitat supporting the reproduction of such uncommon species as the Yellow-spotted Salamander. Amphibians have a strong site fidelity, and changes in the vernal pools occasioned by the driveways will likely have a serious effect on amphibian species.
45. There is no evidence concerning the existence of populations of, or habitat for, any of the species of reptiles listed in the Vermont Wetland Rules, Section 5.4(d)(1).
46. The subject wetland does not meet four or more conditions indicative of wildlife habitat diversity under Section 5.4(e)(1) of the Vermont Wetland Rules. The dominant wetland vegetation class is wooded swamp. The wetland is hydrologically connected to and within less than one mile of the open water of Lake Champlain. There is some evidence that fifty percent or more of the surrounding habitat types are a combination of agricultural land, old field, or open land. However, it is not possible to determine based on the evidence in the record whether there are three or more vegetation classes present or whether emergent or woody vegetation occupies 26 to 75 percent of the wetland area and open water occupies the remainder of the wetland area.
47. The subject wetland is privately owned by the applicant and is not subject to easements in favor of the state or federal government. The subject wetland is not managed as a wildlife area under a management plan filed with and approved by the Secretary of ANR.
48. The area of the driveways is used by wetland dependent species as indicated in the findings above.

49. The subject wetland is important habitat for small mammals and provides habitat for white-tailed deer. The wetland has habitat potential for migratory birds and uncommon amphibians. The driveways, authorized by Conditional Use Determination #92-142, will have more than a minimal adverse impact on the ability of the wetland to provide habitat for wildlife, especially important habitat for small mammals.
50. The applicant has proposed to consolidate two driveways into one, but the applicant has not demonstrated, in his application or evidence, that he has attempted to mitigate adverse impacts on function 5.4 values through avoidance.

Function 5.5 Hydrophytic vegetation habitat

51. This was not one of the functions appealed. Therefore, the Board took no evidence on this function.

Function 5.6 Threatened and endangered species habitat

52. This was not one of the functions appealed. Therefore, the Board took no evidence on this function.

Function 5.7 Education and research in natural sciences

53. The driveways, authorized by Conditional Use Determination #92-142, will have more than a minimal adverse impact on the ability of the wetland to provide valuable resources for education.
54. The subject wetland is in private ownership and is not subject to an easement for education or research in favor of any public entity.
55. The wetland at the Ko property has been used by the Abenaki people for the teaching of hunting, foodways, crafts and traditional beliefs. For generations, Abenaki children have been taken by their elders to the wetland to learn about the natural cycles of the wetland and about how the Abenaki people coexist with and utilize the wetland. The appellant and other descendants of Grandma Lampman have regularly returned to the Ko property, their ancestral home, to use the subject wetland to teach the the tracking and luring of animals such as muskrat, the gathering of berries and wild herbs, and various aspects of tribal history, culture and spiritual life.

56. The driveways, with their adverse impacts on protected wetland functions 5.2 and 5.4, will have an adverse impact on the ability of the Abenaki people to use the wetland for teaching in the natural sciences in that flora and fauna will be destroyed or dislocated as a result of changes in the hydrology, biochemistry and habitat of the site.
57. The applicant may exclude the general public, including the Abenaki people, from its property through lawful posting. However, the applicant may not engage in development activities which will impair or destroy significant functions of the wetland resource which may make it valuable for educational purposes by the public in the future.

Function 5.8 Recreational value and economic benefits

58. The driveways, authorized by Conditional Use Determination #92-142, will not have more than a minimal adverse impact on the recreational value and economic benefits attributable to the subject wetland.
59. The wetland on the Ko property has been and continues to be used for grouse and deer hunting by the general public.
60. For generations, the Abenaki people, including members of the Lampman Family, have derived economic benefit from the subject wetland by using it for gathering firewood, collecting wild plants for food and medicine, and harvesting animal skins, meat and other naturally occurring items. Some of these items have been sold or traded.
61. The applicant has indicated that the property, including the subject wetland has been and will be posted against hunting.
62. The wetland has provided recreational value and economic benefits in the past. However, there is insufficient evidence to support a determination that the wetland presently provides substantial recreational value and economic benefit.

Function 5.9 Open space and aesthetics

63. The driveways, authorized by Conditional Use Determination #92-142, will not have more than a minimal adverse impact on the open space and aesthetic value of the wetland.
64. The wetland is readily observable by the public from Lake Road, and to a lesser degree from Maquam Shore Road.

65. The Ko property is essentially flat. With the exception of some old pastures in areas proximate to the old Lampman homestead, most of the property, including the subject wetland, is uniformly forested with trees and shrubs, predominantly red maple, alder and black ash. The land on the north side of Lake Road has similar forest cover. Thus, the subject wetland does not possess any special or unique aesthetic qualities or distinctive features.
66. The driveways are and will be visible by the public, and therefore have some adverse impact on the open space and aesthetic character of the landscape. However, given that this wetland does not possess special, unique aesthetic qualities or values or have prominence as a distinct feature in the surrounding landscape, the impact of the driveways on the open space and aesthetic character of the landscape is minimal.

Function 5.10 Erosion control through binding and stabilizing the soils

67. The driveways, authorized by Conditional Use Determination #92-142, have a minimal adverse impact on erosion control.
68. The wetland on the Ko property is hydrologically connected to Lake Champlain. It is separated from the lake by the Bellrose tract, Maquam Shore Road and a strip of shoreland property. While the wetland may play some role in protecting the lake's shoreline from excessive erosion through binding and stabilizing of the soil, there is insufficient evidence in the record to find that the driveways will have more than a minimal adverse impact on this function.

IV. CONCLUSIONS OF LAW

This appeal is a case of first impression on a key issue for the administration of the Vermont Wetland Rules: What is the proper legal analysis for determining whether a Conditional Use Determination should be issued for development in a significant wetland? The answer to this question affects not only this appeal but the analysis to be applied by the Agency of Natural Resources in reviewing all other applications for such development. It will also provide guidance to landowners and professional consultants who are considering development in a significant wetland.

A. Board Jurisdiction and Scope of Review

In 1986, the Legislature granted the Board broad authority to adopt rules to identify and protect Vermont's significant wetlands. 10 V.S.A. § 905(7)-(9). The specific authority for the adoption of wetland rules is derived from 10 V.S.A. § 905(7), under which the Board may "[a]dopt rules for the identification of wetlands which are so significant that they merit protection." In 1990, the Board adopted the Vermont Wetland Rules ("Rules") implementing this authority. Responsibility for administration and enforcement of the Rules is shared by the Board and the Agency of Natural Resources ("ANR"). See 10 V.S.A. §§ 905b(18) and 1272 (powers of ANR with respect to wetlands protection).

The Rules set out ten functions to be evaluated in determining whether a particular wetland is significant. These functions are defined in Section 5 of the Rules. A person may obtain an informal opinion from the ANR identifying which, if any, of the functions specified in Section 5 are served by a particular significant wetland. Rules, Section 4.7. However, only the Board may make formal declarations concerning what functions make a wetland significant, its classification, the boundaries of the wetland, and the size or configuration of its associated buffer zone. Rules, Section 4.4. Section 7 of the Rules sets forth a process by which a petitioner may seek such determinations by the Board.

Significant wetlands ¹ are those identified as Class One or Class Two wetlands under the Vermont Wetland Rules. Rules, Section

¹ There are two different uses of the word "significant" in the Rules. A wetland may be "significant" because, for example, it is contiguous to a wetland shown on an NWI map or because it has been so designated pursuant to Section 7 of the Rules. A separate question is whether a wetland is significant for a particular function as determined under Section 5 of the Rules.

4.1. Wetlands identified on the National Wetlands Inventory ("NWI") maps for the State of Vermont (1978) published by the U.S. Fish and Wildlife Service, and all wetlands contiguous to such mapped wetlands, are presumed to be Class Two wetlands unless determined otherwise by the Board. Rules, Section 4.2(b). Development activities in Class One and Two wetlands, except allowed uses (Rules, Section 6.2), require CUDs.

Those activities which are automatically allowed in Class One and Two wetlands and their buffer zones, within certain limitations, are set forth in Section 6.2 of the Rules. Allowed uses include, road construction for silvicultural purposes, but not otherwise. Rules, Section 6.2(B) and (c). All other proposed uses of a significant wetland not listed in Section 6.2 are conditional uses, which may be allowed only pursuant to a CUD issued by the Secretary of ANR. Accordingly, the proposed construction of non-silvicultural roads in a Class Two wetland or its associated buffer zone is allowable only if it meets the criteria for issuance of a CUD. Rules, Section 6.3. A person who constructs such roads, without first obtaining a CUD, may be subject to prosecution for violation of the Board's Rules pursuant to 10 V.S.A. § 1272.

The Secretary of the Agency of Natural Resources ("Secretary") is empowered to issue Conditional Use Determinations ("CUDs") authorizing certain activities within significant wetlands and their buffer zones when the Secretary determines that such activities will not result in an undue adverse effect on protected wetland functions. Rules, Section 8. Persons or parties in interest aggrieved by the Secretary's decision may appeal to the Board pursuant to 10 V.S.A. § 1269. The Board is charged with conducting a de novo hearing and issuing an order affirming, reversing or modifying the decision of the Secretary. The burden of proof rests with the applicant to demonstrate by a preponderance of the evidence that his activity satisfies the standards set forth in Rule 8.5 (Conditional Use Review Standards).

It is uncontested that at least a portion of the Ko property is a Class Two wetland subject to the Board's jurisdiction, because the wetland is contiguous to wetlands delineated on the NWI map for the area. See Rules, Section 4.2(b). No petition for re-designation of the wetland as a Class Three wetland has been filed. See Rules, Section 7. Thus, the present case involves a protected Class Two wetland, with an associated fifty-foot (50) buffer zone. Rules, Section 4.3.

The applicant plans to subdivide and sell eighty acres as eight residential lots. Because a portion of the Class Two wetland separates the upland areas of the property from Lake Road, the applicant originally proposed to construct eight drive-ways through the wetland and its buffer zone to provide access to the lots.

However, the ANR approved only five driveway, 2 three of which are to serve two lots each, and directed the applicant to reroute two utility crossings so as to avoid the wetland area. The construction of driveways for residential purposes within a Class Two wetland or its buffer zone is not an allowed use as defined by Section 6.2 of the Rules. Therefore, the Board must determine in its de novo review whether the five driveways authorized by CUD #92-142 meet the standards as set forth in Section 8 of the Rules.

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B. Conditional Use Determination

Section 8.5(a) of the Rules states:

The Secretary may determine that a proposed conditional use in Class One or Class Two wetlands or their buffer zones will have no undue adverse impact only when the Secretary determines that the proposed use will not

2 Between the issuance of the CUD by the ANR in May 1992 and the Board's hearing on the merits, the applicant constructed all but one of the five proposed driveways, at the risk that the CUD might be reversed or modified by the Board. See In re: Appeal of Larivee, Docket No. CUD-92-09, Preliminary Order on Motion to Stay at 2 (April 5, 1993) (stay request denied for lack of statutory authority, but applicant placed on notice that actions taken pending final decision in appeal are done so at his own peril). These driveways and the protected wetland and its buffer zone were observed by the Board at its two site visits in April and August 1993.

3 The applicant represented to the Board that any proposed houses, wells, septic systems, and leach fields will be located in the upland portions of the property, outside the wetland and its buffer zone. The Board ruled at the hearing that the scope of review in this de novo proceeding was limited to evaluating the impacts of the five proposed driveways on the subject wetland and its buffer zone.

The Board emphasizes that in passing on the merits of this appeal it neither approves nor disapproves the subdivision proposal. If it is subsequently determined, especially in light of the ambiguities in the wetlands delineation performed by the applicant's consultants, that other development activities, such as the construction of leach fields or location of replacement fields, will occur within the wetland or its associated buffer zone, the applicant or his successor in interest will need to apply for one or more CUDS accordingly.

result in an undue adverse effect on protected functions. In making this determination, the potential effect of any proposed conditional use shall be assessed on the basis of both its direct and immediate effects as well as on the basis of any cumulative or on-going effects on the significant wetland.

The Secretary shall not determine that any proposed conditional use is in compliance with these rules if it has an undue adverse effect on protected functions unless the Secretary determines that these impacts are sufficiently mitigated. Adverse impacts on any protected functions, other than minimal impacts, shall be presumed to constitute an undue adverse effect unless mitigated in accordance with subsection (b), below.

Thus, under Section 8.5(a), there are two ways to qualify for a CUD: either, (1) the proposed conditional use will have no undue adverse impact under the protected wetland functions, or (2) any undue adverse effect on protected functions will be sufficiently mitigated, such that there will be "no net undue adverse effect." Section 8.5(a) and (b); see also, Section 8.5(c) and 10 V.S.A. § 905(7). Such determination also shall include an assessment of "the potential effect" of the proposed conditional use "on the basis of both its direct and immediate effects as well as on the basis of any cumulative or on-going effects on the significant wetland." Rules, Section 8.5(a). 4

4 Rule 8.5 requires an assessment of the cumulative or on-going effects of the proposed conditional use on the wetland, in addition to an assessment of its direct and immediate effects. In making that assessment, it would make ecological sense to consider whether the proposed in-ground septic systems (for the eight lots to be served by the five driveways) would have an adverse impact on the surrounding significant wetland. However, the CUD is for the driveways only and thus the jurisdiction of the Board's review is limited to the impact of the driveways. Accordingly, the Board limited its review to an assessment of the impact of the proposed driveways under Rule 8.5 of the Vermont Wetland Rules.

Having said that, the Board wishes to express its opinion that this case illustrates a flaw in the wetland review process -- namely, that because of the jurisdictional limitation, the Board is unable to conduct a comprehensive review of the ecological impacts of an entire project on a significant wetland.

1. Minimal Impacts

The first task under Section 8.5(a) is to determine whether this proposal will have an adverse impact on any protected function, beyond a minimal impact, taking into consideration any cumulative or on-going effects on the subject wetland. "Minimal" is defined in Webster's II New Revised University Dictionary (1986) as "smallest in degree or amount."

The Board has determined that the five driveways have more than minimal impacts on functions 5.2 (surface water protection), 5.4 (important wildlife habitat, especially with respect to the habitat of small mammals), and 5.7 (education in the natural sciences).

With respect to surface water protection, the driveways adversely impact the quality of surface water within the wetland. The driveways, with their narrow culverts, affect the natural flow of water from the wetland complex to Lake Champlain, by pooling the water in some areas and increasing the flow in others. The result is alternating patterns of siltation and erosion. Such disturbance of the natural flow is and will continue to adversely affect the nutrient transformation essential to water quality protection at the site and in nearby Lake Champlain.

Moreover, the driveways, as constructed, have resulted in degradation of surface water quality and the ability of the wetland to serve function 5.2. Siltation fences installed during construction of the driveways, and observed by the Board on its site visits, have not adequately controlled the erosion of fill and siltation from soil disturbance at the site. The road beds have been constructed of a material which is highly susceptible to slumping and erosion, thereby aggravating the problem of siltation and changes in the water chemistry. Although one wetland crossing, as designed and constructed, may have only a minimal adverse impact on the wetland's ability to tie up nutrients and protect surface water quality, the creation of multiple crossings has and will continue, if not abated, to disturb the wetland's capacity to trap nutrients, such as nitrogen and phosphorus, known to reduce the water quality of Lake Champlain. In short, the applicant has failed to demonstrate, by a preponderance of the evidence, that its proposal to construct five driveways has only a minimal impact with respect to function 5.2.

With respect to important wildlife habitat, the Board concludes that the five driveways do and will have more than a minimal adverse impact. The Board finds that the wetland area between Lake Road and the upland portion of the Ko property is an important corridor for wildlife, especially for small mammals. The driveways, in addition to creating multiple physical barriers

to the movement of muskrat and other species from the wetland complex to Lake Champlain, will adversely impact wildlife generally by facilitating human access to, fragmentation of, and disturbance of their wetland habitat. The applicant has failed to demonstrate, by a preponderance of the evidence that its proposal to construct five driveways has only a minimal impact with respect to function 5.4.

The driveways have had, and will continue to have, more than a minimal adverse impact on the ability of the wetland to provide valuable resources for education. Because the driveways adversely impact surface water quality and important wildlife habitat, plants and animals associated with the traditional teachings of the Abenaki people are likely to become dislocated or destroyed. While these plants and animals may survive in other wetlands in the Swanton area, the value of this particular wetland, in large part based on its long history and cultural connection with the Lampman family, is a unique and valuable educational resource not only for the Abenaki people, but the public in general.

The applicant may exclude the public from its property through lawful posting, however the applicant may not engage in development activities that will alter the hydrology, biochemistry and habitat of the wetland and its associated buffer zone, thereby impairing the important functions of that resource which make it valuable for educational use by future generations. Wetlands, like other natural resources (air, public waters, rare and endangered species of wildlife) are protected under the police power of the state. The Vermont Wetland Rules may restrict the uses of that property so as to protect significant wetlands in the public interest. Since it is recognized that the ownership of property may change over time, protection of Class One and Two wetlands assures that the functions which make these wetlands significant will be preserved regardless of whether physical access to the wetland is denied or granted in the discretion of a given owner.

2. Mitigation

Having found that the proposal involves adverse and more than minimal impacts on one or more protected functions, the next step of the analysis under section 8.5(a) is to determine whether such adverse effects are mitigated "to achieve no net undue adverse effect." Section 8.5(b) of the Rules. The mitigation provisions in Section 8.5(b) are all joined by the conjunction, "and," meaning that if mitigation is needed, the applicant must meet all five mitigation provisions.

Section 8.5(b) states:

The following measures shall be used to mitigate adverse impacts on protected functions, other than minimal impacts, to the extent necessary to achieve no net undue adverse effect:

- (1) The proposed activity cannot practicably be located on the upland portion of the site in question or on another site owned, controlled or available to satisfy the basic project purpose; and
- (2) All practicable measures have been taken to avoid adverse impacts on protected functions; and
- (3) The applicant has evaluated each of the protected functions in accordance with the protocols determined by the Department of Environmental Conservation; and
- (4) The proposed conditional use has been planned to minimize potential adverse impacts on the protected functions; and
- (5) A plan has been developed for the prompt restoration of any adverse impacts on protected functions.

Compensation [for adverse impacts with respect to only certain functions] in accordance with subsection (c) below may be considered only when full compliance with the above requirements is insufficient to achieve no net undue adverse effect on any protected function.

Section 8.5 thus sets a rigorous standard for the issuance of a Conditional Use Determination. That is appropriate, given that the context for issuance of a CUD is whether a use, beyond those permitted by Section 6.2, will be allowed in a significant wetland. The resultant test under this subsection is that if a proposed use has more than a minimal adverse impact on any protected function, the applicant must demonstrate that he has incorporated mitigation measures into his proposal that will achieve no net undue adverse effect. Further, for other than a minimal adverse impact on any protected function, the petitioner must meet all five mitigation provisions to achieve no net undue adverse effect.

Paragraph (2) of the Mitigation subsection requires that the applicant take "all practicable measures" to "avoid adverse impacts on protected functions." Paragraph (4) requires that the proposed conditional use be planned "to minimize potential adverse impacts on the protected functions." The Board concludes in this matter that the applicant's proposal does not meet these mitigation

requirements, for several reasons. First, the applicant has provided no adequate explanation why there could not be a single driveway crossing of the wetland for lots numbered 1, 2 and 3. In this regard, the Board notes that under the applicant's proposal those three lots will have a common septic easement area. Second, no adequate explanation has been presented as to why there could not be a common driveway for lots numbered 5, 6, 7, and 8, instead of proposing two driveways. Third, Lot 4 is a small island of non-wetland, with the longest driveway to reach it; arguably a reasonable and better plan to minimize and avoid adverse impacts would be to combine it with Lot 5.

If the above steps were taken, there would be two wetland crossings serving seven lots (one of which lots would be larger), instead of five driveways in a significant wetland. That would presumably reduce the adverse impacts and be more sensitive to the protected functions, yet still provide for development.

It is not the Board's role or desire to re-design the applicant's development plan, and no approval is implied by this discussion; rather, the above potential measures are set out to illustrate and demonstrate that the proposed plan does not meet the mitigation requirements under section 8.5(b)(2) and (b)(4) of the Rules. Moreover, the applicant did not present a plan for the restoration of any adverse impacts, including the obvious impacts of siltation and erosion resulting from the driveways. Section 8.5(b)(5). Concluding as it does, there is no reason for the Board to reach the question of whether the applicant has met the other mitigation requirements of this subsection.

C. Conclusion


The applicant's request to construct five driveways across a significant wetland to access a proposed subdivision, on the evidence presented, does not satisfy the standards in section 8.5 of the Rules, in that this activity will have an undue adverse impact on a Class Two wetland and its buffer zone which have not been properly mitigated.

V. ORDER

1. The decision of the Agency of Natural Resources granting Conditional Use Determination #92-142 is reversed. Conditional Use Determination #92-142, granted to Oon Teong Ko, is void.
2. The applicant is directed to remove all driveways and implement wetland restoration measures under the supervision of the Agency of Natural Resources, with a view toward protection of significant functions under the Vermont Wetland Rules, by July 1, 1994. However, if an application for a new CUD is submitted to the Agency of Natural Resources before July 1, 1994, the applicant shall remove all driveways not within the scope of the application.

Dated at Montpelier, Vermont, this 25th day of March, 1994.

Water Resources Board



Stephen Reynes,
Acting Chair

Concurring:

Stephen Reynes
Mark DesMeules
Ruth Einstein
Jane Potvin