
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Robert D. and Rose Marie Kelly

Docket No.: 82-42
File No.: 18-101
Case Name: Robert D. and Rose Marie Kelly
Date: October 7, 1983
Municipality: DUXBURY

Hearing Officer: Anthony D. Cortese, Sc.D.

Commissioner

Title: FINAL DECISION

PROCEDURAL HISTORY AND SUMMARY OF ISSUES

This decision concerns an application to build a single family house in a hollow behind the primary dune on the Duxbury Barrier Beach. The proposed construction is subject to the Wetlands Protection Act, G.L. c. 131, s.40 (the Act) and the Department's Regulations for Coastal Wetlands, 310 CMR 10.21 et seq.

On or about November 23, 1981, Robert D. Kelly (the Applicant) filed a Notice of Intent to "rebuild and enlarge" an existing twenty-five by twenty-eight foot cottage on the subject lot. The proposed house would be forty-four by twenty-eight feet on a concrete foundation. [*] Although the Notice of Intent described the existing cottage as having been damaged by the blizzard of February, 1978, both Kelly and Hugh F. Hamill, the property owner since late 1978, now state that the cottage was not substantially damaged by the blizzard, but rather by subsequent vandalism. The cottage has not been occupied since the summer of 1978 and is now extremely deteriorated.

[*] The plans for this house also show a twelve foot by twelve foot section in addition to the dimensions given above. The foundation plan also shows a length of forty-six feet rather than forty-four feet.

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rated, with some exterior walls gone and the roof caved in.

On January 28, 1982, the Duxbury Conservation Commission (the Commission) notified the Applicant of their vote to deny the proposed work. The reasons given for the denial were: "1) Evaluation of the overall impact of construction on the marginal barrier beach location; 2) Original construction and submitted plan incompatibility; 3) The lot is a fragile dune and flora living environment; 4) Potential health and safety risk."

The Applicant then requested the Department to issue a Superseding Order of Conditions. Following the Applicant's submission of new foundation plans for an open pile foundation, the

Department's Southeast Regional Office issued a Superseding Order of Conditions on October 15, 1982. The Superseding Order permitted construction of a house of the dimensions proposed by the Applicant, and imposed additional conditions to protect against adverse impacts to the dune system.

Under the Superseding Order, only incidental regrading was permitted, a work area limit was established, no removal of sand was allowed, and no impervious surface was permitted on the driveway. All disturbed areas were to be returned to at least pre-construction elevations and re-vegetated with appropriate species. The Order further provided that no engineered erosion control structure would be permitted at any time to protect the proposed house.

A cover letter from the Deputy Regional Environmental Engineer accompanying the Superseding Order contained the Department Staff's finding that the project area was significant to the Act's interests of storm damage prevention and flood control. The cover

letter stated that the Superseding Order would protect these interests because the permitted work was not expected to cause any decrease in volume or other modification of dune forms which would diminish their protective function. The open pile foundation was required, according to this letter, in order to protect against scour and to permit natural dune migration to occur.

Separate requests for a hearing were then filed by the Applicant and the Commission. The Applicant sought a modification of the Order which would allow a complete enclosure of the open pile foundation by breakaway panels. (The Superseding Order had permitted only an enclosure by breakaway lattice which would have to consist of at least fifty percent open spaces.)

The Commission noted that the proposed house would have a much larger floor area than the existing cottage and also would be suitable for year round occupancy. These factors, claimed the Commission, would increase potential adverse impact to the surrounding dune area. The Commission therefore sought a reduction in the size of the dwelling to that of the original cottage.

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At a pre-hearing conference on November 24, 1982, the Applicant indicated that he objected to a prohibition against full enclosure of the foundation because he wished to have a protected parking area under the house. The Department Staff's coastal geologist, Robert B.P. Stevens, stated that the intent of the Superseding Order had been to assure that sand could pass unimpeded under the house. Thus, providing for parking under the house would be inconsistent with the intent of the Superseding Order even if the foundation were left open, since the owners would not be permitted to remove the sand from the dune which would eventually accumulate under the house. [*] Mr. Stevens proposed that in order to avoid any misunderstanding, the Superseding Order be modified to expressly prohibit the removal of sand from underneath the house.

At this conference, all parties agreed that they would take into account the impact of the existing cottage. The Department Staff and the Conservation Commission also stated that their assessments would be based on a standard of "no increased impact" over the existing cottage.

An adjudicatory hearing took place on March 30, 1983, a site visit having been conducted on the previous day. The following witnesses offered testimony:

- Robert D. Kelly, the Applicant.
- Hugh F. Hamill, the present owner, testifying in behalf of Mr. Kelly.
- C. Martin Delano, a member of the Duxbury Conservation Commission, testifying in behalf of the Commission.
- Shawn M. Dahlen, a member of the Duxbury Conservation Commission, testifying in behalf of the Commission.
- Margaret Ryone Collins, a coastal geologist, testifying in behalf of the Commission.
- Joseph Grady, a staff member of the Duxbury Department of Lands and Natural Resources with enforcement authority over Duxbury Beach, testifying in behalf of the Commission.
- Robert B.P. Stevens, a coastal geologist, testifying in behalf of the Department Staff.

At the close of the hearing, the Commission inquired as to the effect of a decision in this proceeding if the Town Building Inspector should subsequently require a different foundation design. Mr. Kelly stated that the Building Inspector had approved the present foundation design (Exhibit H) and that confirmation of this approval would be submitted. Mr. Kelly subsequently submitted a set of the Exhibit H plans stamped by the Building Inspector: "Approved Town of Duxbury Building Department Subject to Building Code Re

[*] Removal of sand which is part of a coastal dune is an activity governed by the Regulations for Coastal Wetlands. If the removal of sand adversely affected the dune, it would be prohibited by 310 CMR 10.28(3)(e), and might also violate 310 CMR 10.28 (3)(c) and 10.28(3)(d).

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quirements." No other communication from the Building Inspector was submitted.

Findings Concerning Value of the Site to Interests of the Act

The significance of the project site to the interests of storm damage and flood control is established by the Regulations for Coastal Wetlands, 310 CMR 10.21 et seq. Since it is undisputed that

the project site is located on a barrier beach, all coastal dunes on the site are per se significant to storm damage prevention and flood control, as provided by 310 CMR 10.28(1).

The value of this particular site to the interests of the Act was also discussed by various witnesses presenting testimony in this proceeding. In considering the evidence before me on the value of the site, I have given the most weight to the testimony of Stevens and Collins because of the expertise of these two individuals in coastal geology and coastal processes. Both Stevens and Collins are qualified by education and experience to make scientific judgments concerning the value of the barrier beach system and particularly the dune formation which now exists on the site, and to predict how such values may be affected if site characteristics are changed.

Both Collins and Stevens have testified that the beach and dune portion of a barrier beach system acts as a buffer providing protection from storm damage to the landforms behind it -- in this case, Duxbury Marsh and the western shore of Duxbury Bay. These landward areas have value to marine fisheries and shellfish because they provide nutrients and habitat; the beach and dunes are therefore also significant to the protection of marine fisheries and land containing shellfish.

Collins and Stevens testified that in order for dunes to serve these protective functions, the dune form must be able to migrate in response to the force of wind and the flow of water. The dune form, although changing continuously in response to these forces, will maintain over time a state of dynamic equilibrium if not subjected to artificial interference. One factor in the maintenance of this dynamic equilibrium is dune vegetation, which provides protection from the effects of wind and also helps to trap sand which has eroded so as to build new dunes.

Kelly and Hamill have stated that the solid foundation of the existing cottage had only a minimal impact on the dune, and have therefore argued that the new house should also be permitted to have solid breakaway panels. Their testimony was based on personal observation and opinion; they did not claim expertise regarding coastal processes. Kelly and Hamill also pointed out that the abutting property owner has been interfering with dune processes by removing sand from its parking lot.

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With regard to the statements of Kelly and Hamill concerning the cottage's minimal impact, Collins and Stevens disagree, noting that the immediate area of the cottage is a former overwash site, that is, a location at which the ocean broke through the primary dune and deposited sand from the beach and dune area landward of the primary dune. Such overwash areas in a natural state will be sites for the building of new dunes, which will then provide protection for future overwash events. On this site, the area around the cottage and behind the primary dune is low and sparsely

vegetated, conditions which Mr. Stevens considers attributable at least in part to the effect of the cottage on wind scour and sand deposition patterns.

Based on the testimony of Collins and Stevens, I find that this site is significant to the Act's interests of storm damage prevention, flood control, protection of marine fisheries and protection of land containing shellfish. I find that any major obstruction such as a solid foundation or wall at ground level will cause wind scour around the structure and interfere with the natural movement of the dune, thus preventing the dune from maintaining its dynamic equilibrium and its optimal form. If an area below a house on pilings were to be periodically cleared, that would also interfere substantially with dune movement.

In addition, I find that the presence of vegetation in this environment will create a positive, stabilizing effect on dune formation. Therefore, activities which adversely affect vegetative growth will have an adverse impact on the dune's ability to function protectively. Since occupation of the property is one factor which may destroy vegetation and undo natural dune buildup, its effects must be considered in assessing the impact of the proposed project.

The location of a paved parking lot to the south which is periodically cleared of sand has not been shown to diminish the value of this site to the point where its preservation would serve no value. Absent such a showing, activities on another site are not a basis for concluding that the values of this site should not be protected.

Standards to be Applied in Assessing Impact of Project

A major issue presented in this proceeding was the standard to be applied in determining the permissible impacts for this project. The parties agreed at the pre-hearing conference that consideration should be given to the prior development of the site, but they differed as to what might be permitted as a replacement for the existing cottage.

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Collins testified that she analyzed the impact of the proposed house as compared to that of the existing cottage if it were to be reconstructed on pilings. [*] Based on this comparison, she determined that the construction presently proposed would have greater adverse impacts than the hypothetical existing cottage on pilings. The greater impact would be a result of the capacity for greater of the new house, as well as its larger footprint which would adversely affect vegetation by placing it in shadow. Collins concluded that a structure somewhat larger than the existing one would be permissible if additional conditions were imposed (for example, design constraints which would limit pedestrian and vehicular traffic), but that the present design was too large in any case.

Stevens weighed the impact of the existing cottage (with its solid foundation) against the proposed construction and found that the benefits of placing the new construction on pilings at a higher elevation would more than outweigh the adverse impacts of a larger house.

Kelly and Hamill, in addition to claiming that a solid foundation would not be harmful, argued that solid breakaway panels should be permitted because a solid foundation already existed on the site.

A subsidiary factual question which all parties addressed was the extent of damage to the existing cottage. The Conservation

Commission had raised this issue and had requested a finding that the cottage was at least fifty percent damaged when the Notice of Intent was filed, on the assumption that the Department would be required to impose different standards if the extent of damage were at least fifty percent.

The Department has no general "fifty percent policy" applicable to work in the coastal zone. Following the blizzard of February 1978, a memorandum was issued on March 23, 1978 by then Commissioner David Standley, which provided guidelines for administering the Wetlands Protection Act in the aftermath of the blizzard. This memorandum, among other things, provided for certain repair work to be undertaken without a Notice of Intent if the extent of damage was less than fifty percent of the pre-storm value of the structure. However, if the Conservation Commission determined that such repair would alter an area subject to the Act, a Notice of Intent could be required. This memorandum, in any event, was never applicable to non-blizzard damage.

In addition, "fifty percent rules" have been employed in other contexts to establish the point at which a structure ceases to be "grandfathered" for a particular purpose. For example, under the State Building Code, the Design Requirements for Floodplains and Coastal High Hazard Areas, 780 CMR 744.0, are applicable to both new construction and to substantial improvements, the latter

[*] The comparison to an existing cottage on pilings appearing to go beyond the Commission's position as expressed at the pre-hearing conference, since at that time the Commission simply referred to a comparison with the existing cottage.

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term being defined as "repairs, reconstruction or improvements the cost of which exceeds fifty percent of the market value of the structure before repairs or damage."

Both of the above standards are clearly intended to prevent a situation in which more stringent standards would be imposed on the

whole of an existing structure simply because it requires minor repairs. By contrast, a finding as to the precise extent of damage to the existing structure on this site is not necessary because the Applicant is not presenting a proposal for repair or improvement but rather one for total reconstruction or replacement. The Applicant testified, for example, that he will not be using any part of the existing structure in his new construction, although some of the building materials may be employed. Since the existing structure is to be demolished, there is no problem presented in harmonizing the characteristics of an existing structure with current standards. It is therefore immaterial how much of the existing cottage may now be standing.

On the other hand, the fact that a house now exists on the site is a factor to be considered in framing an Order of Conditions for the new construction. As noted above, all parties have recognized to some extent that this is an altered environment and have taken the position that some form of dwelling should be permitted.

I find that the legal effect of the existing structure is not to insulate future construction from the requirements imposed by the Regulations for Coastal Wetlands. The proposed project is subject to these regulations, and particularly to 310 CMR 10.28(3) which provides that when a coastal dune is determined to be significant to storm damage prevention and flood control, there shall be no adverse effect on the dune by:

- (a) affecting the ability of waves to remove sand from the dune;
- (b) disturbing the vegetative cover so as to destabilize the dune;
- (c) causing any modification of dune form that would increase the potential for storm or flood damage;
- (d) interfering with the landward or lateral movement of the dune; or
- (e) causing removal of sand from the dune artificially.

In the case of the demolition and replacement proposed here, I conclude that the standard of no adverse impact can be met if there is a net reduction of adverse impact to the dune system, even if there is a change in one design characteristic such as size which, if considered alone, would increase the negative impact of the project. In view of the uncertainties associated with any such analysis, however, it is appropriate for the Department to impose additional conditions to assure that the values of the dune will be protected.

In my opinion, an application of the Regulations for Coastal Wetlands which takes account of present conditions is consistent

with the purposes of these Regulations so long as the assessment of present conditions ignores any unlawful conduct or neglect of the property which may be the cause of existing adverse impacts. That has not been shown to be an issue in this case, the present cottage having been constructed many years prior to state

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regulation of coastal wetlands. Nor would there be any basis for concluding that the recent deterioration of the cottage has increased its adverse impact to the dune.

I would also note that since the purpose of a comparison with existing conditions is to determine whether the proposed construction will cause adverse impacts beyond those now existing, the reference point should be actual conditions rather than a theoretical existing cottage on pilings as suggested by Collins.

Therefore, my decision in this case will take account of any adverse impacts which I find may be attributed to the existing cottage. It is not necessary to establish the condition of the cottage on a particular date, since enough of the structure (including the solid foundation) was still in place at the time of the site visit to present an obvious continuing obstruction to dune migration.

CONCLUSIONS

After weighing the impacts of the proposed larger house on pilings as against those of the existing structure, I have concluded that the proposed design can be permitted if certain additional conditions are imposed. I do not believe that the requirements need be as stringent as those proposed by Collins, since I have concluded that permitting the movement of sand under the proposed house will represent a considerable improvement over the existing solid foundation and that this will counterbalance certain additional adverse impacts created by the larger footprint of the house and the capacity for greater use.

On the other hand, without the open foundation and a prohibition against removing sand from underneath the house, this project could not be permitted; the larger size of the proposed house would then present an additional adverse impact which would not be balanced by any improvement over existing conditions affecting the dune.

My more specific conclusions will be discussed with regard to particular subjects being treated in the Final Order of Conditions:

Driveway: For the reasons discussed in the previous section on applicable standards, I conclude that a driveway should be permitted so long as it does not present additional adverse impacts over the driveway which now exists. While clearing the driveway of sand will constitute some interference with dune migration, it is reasonable to assume that this interference occurred in the past

with regard to the existing driveway. Since the new driveway will be in the same location as the existing driveway and will not be permitted to have an impervious surface, I find that the impacts will not be significantly increased.

During the course of this hearing, it became apparent that the plans for this project were not consistent with the intention of all parties to have the driveway remain in the location where it now exists. Corrective

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language has therefore been added by agreement to the Final Order of Conditions. The parties have also agreed to a condition limiting changes of grade between the proposed house and the road.

Use of area underneath house: For the reasons discussed earlier in this decision, a condition is being placed in the Final Order which prohibits removal of sand from the area underneath the house. In order to insure as a practical matter that this area will remain unobstructed, the Final Order will also prohibit parking under the house.

Construction of pedestrian walkways: Both Stevens and Collins testified that a pedestrian walkway over the dune would mitigate the impacts arising from increased occupancy of the property. The Final Order of Conditions will therefore require the construction of an appropriate walkway or walkways.

Establishment of vegetation: Collins proposed that a landscaping plan be submitted before issuance of a Final Order of Conditions. In Stevens' opinion, a detailed landscaping plan was unnecessary in this case. I am in agreement with Collins insofar as she testified that consideration should be given to the planting of shade-tolerant species under the house, and to placing vegetation next to the walkway which will discourage pedestrians from leaving the designated path. In order to insure that appropriate species are selected for particular areas and that the Applicant is made aware of planting specifications, I am requiring the submission of a landscaping plan or written description which will indicate in a general manner the landscaping of the site. It is suggested that the Applicant consult with the Department Staff at the Southeast Regional Office in preparing this plan.

Structural design of building: Dahlen and Delano have stated objections or questions concerning the adequacy of the Applicant's structural design, and have noted that the foundation plans were not prepared by a Professional Engineer. The Department Staff considered the foundation design to be adequate. The Conservation Commission representatives indicated, however, that they would be willing to accept the present design if it were approved by the Town Building Inspector. It was then agreed that the Applicant would submit his plans to the Building Inspector before a Final Decision was issued referencing these plans. The plans were subsequently stamped by the Building Inspector in the manner

indicated earlier in this decision. Since the legal effect of that stamp is not clear to me, I am including in the Final Order of Conditions a requirement that a Building Permit be obtained before any work is commenced on this project. If the Building Inspector has in fact already approved the referenced plans, this requirement should present no burden to the Applicant. If the Building Inspector's approval is qualified in any respect, this requirement will assure that no work may commence until it can be established that the plans for which a Building Permit is granted are not materially different from those before the Department in this hearing.

Use of lattice: The Department Staff and the Commission differed considerably regarding the appropriate specifications for breakaway lattice which would permit sufficient sand to move through its open spaces. In

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addition, the Commission and the Department Staff did not agree on the compatability of lattice with the foundation design. The Applicant did not appear to be requesting the use of lattice and did not show lattice on the plans submitted to the Building Inspector. Since the Applicant has not proposed to use lattice and since any form of lattice will present a slight impediment to the movement of sand, the condition concerning lattice has been eliminated from the Final Order of Conditions.

* * * * *

The parties to this proceeding are hereby notified of their right to file a motion for reconsideration of this decision, pursuant to 310 CMR 1.01(10)(p). Such motion shall be filed within ten days of the postmark date of this decision and must include a statement of all matters alleged to have been erroneously decided and, if applicable, a statement as to any newly discovered matters or circumstances that have arisen subsequent to this decision. Any such motion shall be filed with the Hearing Officer and all parties.

The parties to this proceeding are hereby further notified of their right to appeal this decision to the Superior Court pursuant to the Massachusetts Administrative Procedure Act, G.L. c. 30A, s.14(1). The complaint must be filed in the Court within thirty days of receipt of this decision.

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End Of Decision