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## DIRECTIONS IN VIRGINIA'S SHORELINE EROSION POLICY

by Mary Munson

Virginia, like other coastal states, is facing serious questions about managing shoreline erosion. Although Virginia has hundreds of miles of beach on its outer banks (or barrier islands), this paper will be concerned with the erosion of mainland beaches, and in particular, privately-owned developed properties.<sup>1</sup> Because the mainland coast is already developed and erosion threatens improved lots, mainland coastal erosion has forced the development of laws dealing with erosion management. Virginia officials and property owners have been experiencing problems in determining how to protect valuable shorefront properties. The problem is exacerbated by the lack of comprehensive federal policy dealing with the eroding beachfront.

Although many states are facing similar beach erosion problems, the Commonwealth's struggle to meet the challenge has created a unique legal scheme which is still in the process of development. Owners of beachfront property should be aware of

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<sup>1</sup>The reason for this focus is twofold. First of all, very little of the barrier islands have been developed, and Virginia lawmakers and courts have not yet faced any major decisions concerning erosion control strategies on these islands. See, Szablewz, "Development of Barrier Islands in Virginia," 6 Va. J. Nat. Resources L. 375 (1987). Secondly, federal laws have addressed development on barrier islands to a much wider extent than the mainland, and the legal and technical issues differ. See, Keuhn, "The Coastal Barrier Resources Act and the Expenditures Limitation Approach to Natural Resource Conservation: Wave of the Future or Island Unto Itself?" 11 Ecology L.Q. 583 (1984).

the risks of such ownership, and legal recourse open to them should their property come under imminent danger of water encroachment.

Shoreline erosion is a growing problem as more areas experience its effects. It is generally agreed that mainland shore retreat is largely attributable to a rising sea level.<sup>2</sup> Long term tidal gauge records indicate that the sea level is rising 2 to 3 millimeters per year. On parts of the East Coast, where land is actually sinking, the apparent rise in sea level could exceed one meter per year.<sup>3</sup> The rise is due to changes in climate caused by alterations of atmospheric chemicals, which cause the polar ice caps to melt.<sup>4</sup> In Virginia, 330 miles of shoreline have erosion rates which exceed two feet per year,

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<sup>2</sup>O. Pilkey & M. Evans, "Rising Sea, Shifting Shores" in Coast Alert-Scientists Speak Out 13 (T. Jackson & D. Reische eds. 1981).

<sup>3</sup>p. Komar, CRC Handbook of Coastal Processes and Erosion 10 (1983). Shorter term shoreline changes will occur independently of sea level rise; these changes may be larger in magnitude than changes caused by sea level rise. Examples of such changes are breaches caused by storm surges, and erosion and deposition caused by littoral current sand transport processes. See, J. Weggel, A Method for Estimating Long Term Erosion Rates from a Long Term Rise in Water Level 7 (U.S. Army Corps of Engineers, 1979).

<sup>4</sup>Bigford, "The Implications of Relative Sea Level Change on Coastal Decision-making," 10 The Coastal Society Bulletin Vol 2 5 (1987). The National Academy of Sciences estimates that 57% of the rise will be the volume of the water from the ice caps, and 43% will be due to thermal expansion of that water. Id.

while 600 miles exceed one foot per year.<sup>5</sup> The shore of Sandbridge Beach, a small community in Virginia Beach, is estimated to have an erosion rate of 4 feet per year,<sup>6</sup> and was eroding at a rate between 6 and 10 feet per year between 1937 and 1984.<sup>7</sup>

The high rates of erosion represent a significant loss of property. Because most of the shores of the Commonwealth are privately owned, this poses significant problems for individual private property owners in Virginia.<sup>8</sup> Owners of receding property are faced with the dilemma of whether to attempt to save improvements on their property, or to let nature take its course and lose their investment to the sea. Many opt for attempting to save their investments, and plan for structural barriers, moving buildings back, or rebuilding the beach by artificially importing sand.

#### Federal Policy

National policies have shifted over the years from being

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<sup>5</sup>1986 Va. Acts 1938. This finding was embodied in House Joint Resolution No. 46, which established a Joint Committee to study Virginia's tidal shoreline erosion policy.

<sup>6</sup>City of Virginia Beach, "History and Background Discussion Pertaining to the City of Virginia Beach's Position in Opposition to HB 1769 Introduced in the 1985 Session of the General Assembly" (March, 1985).

<sup>7</sup>Dolan, "Technical Report: Sandbridge Beach and Back Bay Virginia" (Coastal Res. Assoc. 1986). This estimate was based upon an analysis of a series of aerial photographs.

<sup>8</sup>1986 Va. Acts 1938. This was another finding of H.J.R. No. 46.

generally supportive of structural erosion control to generally supportive of non-structural options. Historically, federal programs encouraged private shorefront development by providing economic aid for shore protection devices.<sup>9</sup> The Army Corps of Engineers (Corps) was given authority to regulate activities on the shore up to mean high water line by the River and Harbor Act of 1899,<sup>10</sup> which specifies that construction of bulkheads and other structures must be authorized by the Secretary of the Army.<sup>11</sup> By the 1930's, the Corps' policy towards controlling erosion was based upon two implicit assumptions:

1) a tacit acceptance of the theory that the position of land was not changing with respect to the sea; and

2) a belief that erosion could be controlled if the right combination of information and engineering could be found.<sup>12</sup>

This philosophy was applied on a large scale after World War II. Jobs were in demand and coastal engineers were given clout through large government grants. The Corps' Beach Erosion Board (replaced by the Coastal Engineering Research Center in 1962<sup>13</sup>)

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<sup>9</sup>Nordstrom, "Beach Conservation and Enhancement: The Basis for a National Policy on Coastal Erosion in the United States," 2 J. of Shoreline Management 65 (1986).

<sup>10</sup>33 U.S.C.A § 403 (1985).

<sup>11</sup>33 U.S.C.A § 403 (1985).

<sup>12</sup>Moore & Moore, "The Corps of Engineers and Coastal Engineering: a 50-Year Retrospective" in Coastal Zone '83 1627 (Magoon ed. 1985).

<sup>13</sup>The creation and functions of the CERC are set forth in 33 U.S.C. 426.

was greatly biased in favor of large scale engineering projects.<sup>14</sup> The Corps preferred structural options, reflecting the implicit assumptions above. Few regarded coastal erosion as part of a larger geological system.<sup>15</sup> People continued to build on beaches, and when a beach became threatened by erosion, the Corps responded.

As knowledge about beach erosion processes grew, the philosophy of the federal government changed. Policymakers began to recognize that hardened defenses are not preferable options for erosion control because of their destructive effects on beaches. A vertical wall, such as a bulkhead, tends to reflect wave energy, increasing scour and the ultimate loss of the beach.<sup>16</sup> Natural sand dune systems were recognized as integral structural components in beach conservation. In 1937, the National Park Service adopted large scale efforts to construct artificial dunes by constructing a 40-mile system on the Outer Banks of North Carolina.<sup>17</sup> The Army Corps remains the authority for approval of erosion control devices in U.S. waters.

The national statute which guides states' policies in the

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<sup>14</sup>Moore & Moore, supra note 12.

<sup>15</sup>Pilkey & Evans, supra note 2.

<sup>16</sup>Allayaud, "The Regulation of Shoreline Structures," Coastal Zone '83 1607 (Magoon ed. 1983).

<sup>17</sup>Moore & Moore, supra note 12.

coastal zone is the Coastal Zone Management Act of 1972.<sup>18</sup> The statute sets up a process whereby a state Coastal regulatory program is approved by the Secretary of Commerce, making the state eligible for funding grants.<sup>19</sup> While affirming a national interest in protecting the coastal zone, the law allows states to select the management approach which suits their specific needs.<sup>20</sup> The federal law supplies only guidelines, and does not specify a preferred way to manage erosion. This has caused a clamor for a more comprehensive role of the federal government in controlling activity on mainland beaches.<sup>21</sup>

#### COASTAL EROSION POLICY IN VIRGINIA

In 1972, the Virginia General Assembly passed the Wetlands Act.<sup>22</sup> In the section on "Standards for the Use and Development of Wetlands," the two guiding principles are:

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<sup>18</sup>16 U.S.C.A § 1451 et seq. (1985). For a description of the Act, see, Chasis, "The Coastal Zone Management Act: A Protective Mandate," 25 Nat. Res. J. 21 (1985).

<sup>19</sup>16 U.S.C.A § 1455 (1985) states that the Secretary may provide up to 80% of the State's cost of administering its coastal management program.

<sup>20</sup>The State program seeking approval must conform to specific requirements laid out in § 1454(b). The Section requires State plans to include an identification of the boundaries of the coastal zone, an inventory of sensitive areas, guidelines on priorities of uses in the zone, a definition of the word "beach" and what shall be permitted land uses, planning processes for energy facilities, and planning processes to control erosion. The statute does not direct the states to on the content of any of these requirements. 16 U.S.C.A. § 1454(b) 1985.

<sup>21</sup>See, Nordstrom, supra note 9 at 1627.

<sup>22</sup>va. Code § 62.1-13.1 et al. (1983).

"1) Wetlands of primary significance shall not be altered so that the ecological systems in the wetlands are unreasonably disturbed;

2) Development in Tidewater Virginia, to the...extent practicable, shall be concentrated in wetlands of lesser ecological significance or in areas that have already been "irreversibly disturbed."<sup>23</sup>

The Act set up a permit procedure for proposed activity affecting wetland areas. It is administered by local areas which adopt a Wetlands Zoning Ordinance<sup>24</sup> and establish a Wetlands Board.<sup>25</sup>

The Coastal Primary Sand Dune Protection Act<sup>26</sup> was passed in 1980. Modeled upon the Wetlands Act, it extends a permitting procedure to activities destroying vegetation upon or altering the natural functions of coastal primary sand dunes.<sup>27</sup> It allows certain jurisdictions to adopt a Coastal Primary Sand Dune Zoning Ordinance<sup>28</sup> which invests the local Wetlands Boards with permitting powers for activities on the sand dunes.<sup>29</sup>

Virginia has established two bodies reflecting the Commonwealth's concern with beach erosion. The Shoreline Erosion

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<sup>23</sup>Va. Code § 62.1-13.3 (1983).

<sup>24</sup>Va. Code § 62.1-13.5 (1983). This Section sets forth a Wetlands Zoning Ordinance which is the only one under which a Wetlands Board is authorized to operate.

<sup>25</sup>Va. Code § 62.1-13.6 (1983).

<sup>26</sup>Va. Code § 62.1-13.21 (1983).

<sup>27</sup>Va. Code § 62.1-13.21 (1983).

<sup>28</sup>Va. Code § 62.1-13.25 (1983).

<sup>29</sup>§ 4 of the Coastal Primary Sand Dune Zoning Ordinance, set forth in Va. Code § 62.1-13.25 (1983).



Advisory Service provides technical advice to prospective builders in coastal areas helping them minimize the erosion effects of their projects.<sup>30</sup> The Commission on Conservation and Development of Public Beaches (Beach Commission), created in 1980, helps to fund protection and enhancement efforts for public beaches.<sup>31</sup> In addition, localities may establish local erosion advisory commissions, such as the Virginia Beach Erosion Council.<sup>32</sup> Creation of local commissions make localities eligible for grant funds from the Beach Commission,<sup>33</sup> and often coordinate publicly funded erosion control activity. In Virginia Beach, erosion control primarily has been sand renourishment activity for the City's public beaches.<sup>34</sup>

Virginia also expressed its policy towards erosion in 1972 when it vested the Soil and Water Conservation Commission with the duty to "evaluate the effectiveness and practicality" of erosion control programs, and to secure assistance from the federal government.<sup>35</sup> In the statute, there was a formal declaration of Virginia's erosion control policy:

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<sup>30</sup>Va. Code § 21.11.19 (1983).

<sup>31</sup>Va. Code § 10-215 et seq. (1985).

<sup>32</sup>M. Farber, Initial Staff Study: Joint Subcommittee to Study the Commonwealth's Tidal Shoreline Erosion Policy (Sept. 1986) (Available in Legislative Services, Richmond, Virginia).

<sup>33</sup>Va. Code § 10-222 (1985).

<sup>34</sup>Farber, supra note 32.

<sup>35</sup>Farber, supra note 32 at 4.

"The shores of the Commonwealth of Virginia are a most valuable resource that should be protected from erosion which reduces tax base, decreases recreational opportunities, decreases the amount of open space and agricultural lands...in general adversely affects the environmental quality; therefore, the General Assembly hereby recognizes that shore erosion as a problem which directly or indirectly affects all of the citizens of this State and declares it the policy of the State to bring to bear the State's resources in effectuating effective practical solutions thereto."<sup>36</sup>

Virginia's regulatory regime was approved by the federal government in 1986. Thus, these programs are eligible for the funding grants.

The State had some difficulty in implementing its permitting program when erosion control issues arose. The challenges encountered forced the state to deal with erosion issues head-on, and to better articulate its policies toward coastal erosion.

In 1984, several private beach owners in Sandbridge brought suit in the state court, appealing the denial of a permit to construct bulkheads on their property.<sup>37</sup> The denial had been based upon two considerations: 1) the bulkhead would accelerate erosion on properties adjacent to it, and 2) it would interfere with the sand dune natural system of sediment transport, which replenishes nearby beaches.<sup>38</sup> The court upheld the permit

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<sup>36</sup>Va. Code § 21-11.6 (1985).

<sup>37</sup>Bailey v. Virginia Marine Resources Commission, 3 Va. Cir. 254 (1984).

<sup>38</sup>Memorandum from Keith Buttlemen to Betty J. Diener, Secretary of Commerce and Resources, (March 14, 1985). These conclusions were based largely upon a report issued by the Virginia Institute of Marine Science which concluded that the project was undesirable. Barnard and Silberhorn, "Shoreline Permit Application Report" (August 4, 1983).

denial, holding that it was a "reasonable and permissible" exercise of police power.<sup>39</sup> Because there was evidence to support the findings of the permitting agency,<sup>40</sup> the court deferred to the agency's decision.<sup>41</sup>

The beach owners decided not to appeal the Virginia Circuit Court's decision. Instead, they went to the Virginia General Assembly. Despite opposition from the City of Virginia Beach,<sup>42</sup> the Secretary of Commerce and Resources,<sup>43</sup> and various civic groups and newspapers,<sup>44</sup> the lawmakers passed an Act which allowed the owners to build the bulkheads.<sup>45</sup> The Act exempted the small stretch of Sandbridge Beach which was experiencing property-endangering erosion from the permitting provisions of

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<sup>39</sup>supra note 37 at 257.

<sup>40</sup>The agency was the Virginia Marine Resources Commission (hereinafter VMRC). The permit was originally denied by the Virginia Beach Wetlands Board, and appealed to the VMRC.

<sup>41</sup>supra note 37 at 255.

<sup>42</sup>See, City of Virginia Beach, "History and Background Discussion Pertaining to the City of Virginia Beach's Position in Opposition to HB 1769 Introduced in the 1985 session of the General Assembly" (March, 1985).

<sup>43</sup>See, Memorandum from Betty J. Diener to Charles S. Robb (Feb. 25, 1985).

<sup>44</sup>See, e.g., Herbert, "Veto the Bulkhead Authorization," The Norfolk Ledger-Star, Feb. 19, 1985; Letter from the North Virginia Beach Civic League (E.M. Stone, Pres.) to the Mayor and City Council of Virginia Beach (Jan. 28, 1985); Fiske, "Robb Veto Sought on Bulkhead," Norfolk Virginian Pilot, p. D1, Feb. 26, 1985.

<sup>45</sup>1985 Va. Acts 1081.

the Coastal Primary Sand Dune Protection Act.<sup>46</sup>

There was adverse reaction to the General Assembly's legislation to benefit a small group of landowners. It has become accepted knowledge that bulkheading is a temporary and undesirable strategy to prevent beach erosion, whereas beach sand replenishment is becoming the preferred alternative.<sup>47</sup> The General Assembly's approval of bulkheads, albeit in a small area, seemed to be an official sanction of an inadvisable approach to erosion control.

During the following session, the General Assembly responded to the criticism by setting up a joint subcommittee to study the Commonwealth's tidal shoreline erosion policy.<sup>48</sup> This resulted in a report as well as several public meetings to discuss the issues.

In 1987, lawmakers scrutinized the results of the studies,

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<sup>46</sup>The amendment to the Coastal Primary Sand Dune Protection Act was that "Owners of residential building lots" in the Sandbridge Beach subdivision "shall not be prohibited from erecting and maintaining protective bulkheads of a type, size and configuration approved by the Virginia Beach Wetlands Board. 1985 Va. Acts 1081.

<sup>47</sup>See, Allayaud, "The Regulation of Shoreline Structures," in Coastal Zone '85 1607 (Magoon, ed. 1983); Conference Report, 2d Skidaway Institute of Oceanography Conference on America's Eroding Shoreline: National Strategy for Beach Preservation, 1 J. Shoreline Mgmt. Vol. 2 at 155 (1985); Pilkey & Evans, "Rising Sea, Shifting Shores" in Coast Alert-Scientists Speak Out 13 (Jackson & Reische, eds. 1981); O'Brien & Murrrough, "Beach Stabilization by Sand Replenishment," 53 Shore and Beach 5 (1985).

<sup>48</sup>1986 Va. Acts 1938. The Resolution recognized that "piecemeal erosion control efforts undertaken by individual property owners may exacerbate erosion elsewhere." Id.

taking several actions. One Act removed the 1985 specific exemptions for the Sandbridge Beach property owners, and amended the statute to allow exemptions when the Wetlands Board makes a determination that structures are in "clear and imminent danger" from erosion.<sup>49</sup> The Act also provides that when a bulkhead is built in this exempted area, the owner must get consent from property owners on both sides of the bulkhead before construction.<sup>50</sup>

Three Acts passed in 1987 recognize the desirability of beach renourishment. One resolution urged the Army Corps of Engineers to determine the extent to which dredged material can be used for beach nourishment.<sup>51</sup> The other resolution gave the Secretary of Natural Resources the responsibility for determining whether dredged material is suitable for beach nourishment.<sup>52</sup> Finally, in the same session, a resolution was passed to extend the study of the state's erosion policies.<sup>53</sup>

Virginia has a comprehensive permit process for activities on its shoreline. However, when influential private property interests were threatened, the legislature ignored a carefully crafted regulatory regime to the detriment of both the permitting process and the environment. It is clear that Virginia's policy

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<sup>49</sup>1987 Va. Acts 731.

<sup>50</sup>Id.

<sup>51</sup>1987 Va. Acts 1709

<sup>52</sup>1987 Va. Acts 308.

<sup>53</sup>1987 Va. Acts 1710.

towards shoreline protection is evolving. While current legislative activity implies that Virginia is beginning to embrace a policy to promote beach nourishment, the future is difficult to predict. Since the problem of beach erosion is increasing, the state's willingness to pursue its chosen strategy of beach renourishment has become urgent.