United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 0 6 1993

Honorable G. Edward Dickey
Acting Assistant Secretary (Civil Works)
Department of the Army
Washington, DC 20310

Dear Dr. Dickey:

In accordance with provisions of the December 21, 1992, Clean Water Act Section 404(q) Memorandum of Agreement (MOA) between our agencies, I am requesting your review of the Norfolk District (District) Engineer's decision to issue a Section 404 permit for the project described in Public Notice CENAO-CO-R 92-0200-08. The permit would authorize the applicant, Greensprings Plantation, Inc., to place fill material in wetlands to develop a residential and commercial complex with two golf courses on a 1402-acre tract in James City County, Virginia. The District has determined that the proposed project will directly affect 5.9 acres of primarily forested wetlands. However, the proposed project will also affect, at a minimum, an additional 7.7 acres of wetlands through use of these wetlands as stormwater detention basins. After review of the District's March 30, 1993, notification to the U.S. Fish and Wildlife Service (Service) and an analysis of project site values and impacts (enclosed), I have determined that this case warrants elevation in accordance with criteria found in Part IV of the revised MOA (Elevation of Individual Permit Decisions).

Issuance of a Department of the Army permit for the Greensprings project will have substantial and unacceptable adverse effects on aquatic resources of national importance, primarily forested wetlands and associated species populations. Construction of project facilities will lead to substantial and unacceptable adverse impacts to wetlands, and proposed compensation will not reduce the net effects of the project to an insignificant level. The Department of the Interior, acting through the Service, is vested with the authority and obligation to protect, conserve, and enhance the Nation's fish and wildlife resources. These matters fall within our jurisdiction under the Fish and Wildlife Coordination Act (FWCA), Section 404(m) of the Clean Water Act, the Fish and Wildlife Act of 1956, the Emergency Wetlands Resources Act of 1986, the Endangered Species Act of 1973, as amended, and the Migratory Bird Treaty Act, as amended.

The Greensprings Plantation property contains tributaries of and directly abuts Powhatan and Shellbank Creeks. Powhatan Creek and its associated wetlands have been recognized through the Emergency Wetlands Resources Act (EWRA) as nationally significant and warranting priority attention for protection. Powhatan and Shellbank Creeks are tributaries of the James River, which has been designated as one of eleven focus areas in Virginia under the North American Waterfowl Management Plan due to its importance for migratory waterfowl. The Department of Defense has entered into a MOA with the

Department of the Interior regarding implementation of the goals of the North American Waterfowl Management Plan, which call for the conservation and restoration of wetlands within Joint Venture Areas such as the Chesapeake Bay.

Temporarily and seasonally flooded palustrine forested wetlands in Virginia and the Chesapeake Bay region provide an array of ecological and societal values, and they are declining at an alarming rate. From the mid-1950s to the mid-1970s, Virginia experienced a loss of 57,000 acres of palustrine vegetated wetlands, with forested wetlands making up the majority of this loss (Tiner and Finn 1986). More recent information indicates that Virginia's wetlands continue to decline at a significant rate (Frayer 1991). This decline, and the significance of remaining Chesapeake Bay wetlands, has been underscored by the "Chesapeake Bay Wetlands Policy" (Chesapeake Executive Council 1988), which calls for a goal of no net loss of wetlands, with a long-term goal of a net resource gain. Restoration of wetlands has also been identified as an essential component in non-point source improvement strategies for the Chesapeake Bay.

There are many indicators of high biological resource values within and adjacent to the Greensprings Plantation site. Powhatan Creek and its wetlands support spawning anadromous fish (river herring), and several populations of Virginia least trillium (Trillium pusillum var virginianum), a candidate for Federal listing. Other populations of rare plant species and State listed endangered amphibian species may also be present. An active nest of the federally listed bald eagle (Haliaeetus leucocephalus) is located directly adjacent to the Greensprings Plantation property within Powhatan Creek wetlands. In addition, forested uplands and wetlands within the project site provide habitat for migratory birds during migration, winter, and breeding seasons. Of particular importance is the use of this area by neotropical migrant bird species. Over 75 percent of the forest-dwelling birds breeding in Virginia are neotropical migrants, such as woodland warblers, vireos, and flycatchers (Bradshaw 1992). Information from Service Breeding Bird Surveys indicates that over two thirds of these birds have shown steady population declines since 1980. Many of these birds require large, undisturbed, mature forested areas, such as that provided at the Greensprings site, to reproduce and sustain viable populations.

I am concerned that the District's proposed permit decision will allow for significant, uncompensated loss and degradation of forested wetlands, impacts to nesting bald eagles, and losses of forested upland habitat. I am also concerned that the District has not considered the full impacts of this project, as well as the cumulative impacts of this and the many similar projects constructed, and proposed for construction, in the Chesapeake Bay region. The project will destroy six acres of wetlands for stormwater management, irrigation, and golf course creation, all of which are non-water dependent activities. The District failed to consider the impacts to a minimum of 8 additional acres of wetlands that will be frequently inundated by stormwater. Overall, the effects of permit issuance would include the loss and modification of 14 acres of habitat for wetland dependent species, and changes in wetland hydrology, water quality, ecosystem functions, and community structure. The Department is opposed to utilization of free-flowing streams and natural wetlands for instream treatment of stormwater. As such,

it constitutes conversion of these waters, with all their important ecological attributes, into a waste treatment system.

The District failed to fully evaluate the range of potentially practicable alternatives that would minimize or avoid impacts to aquatic resources. The District did not require the applicant to provide a thorough, cost-benefit analysis of upland alternatives, such as alternative project configurations, alternative irrigation water storage facilities, or upland treatment of stormwater. The alternatives analysis that was provided by the applicant only attested that other alternatives were not considered economically feasible; the applicant did not show that upland alternatives would not have provided a profitable project. Based upon project design, it appears to the Department that the Corps is allowing the applicant to place the greatest emphasis on maximizing profits rather than minimizing project impacts. Furthermore, the District failed to explore whether variances in local stormwater management regulations could be implemented to avoid the loss of wetlands, as recommended by the Service.

The proposed compensatory mitigation does not fully offset project impacts, and a substantial net loss of aquatic resources will occur. By incorporating the State's compensation requirements into its proposed permit, the District has in effect accepted a wetland compensatory mitigation ratio of just over one to one, which would not fully replace the functions and values of the forested wetlands that will be affected. Moreover, the compensation areas will be located within proposed stormwater detention basins, and thus will be subject to adverse impacts associated with increased flooding and increased inputs of sediments and site contaminants. We question whether wetland creation within the stormwater detention basins will even be successful. The compensatory mitigation will also result in the destruction of 19 acres of forested uplands that currently provide habitat for migratory birds and other wildlife species. It is our position that it is inappropriate to destroy high value upland habitat to compensate for wetland losses.

Finally, although not an issue to be addressed through permit elevation, I note that the District has not fulfilled its mandatory obligations under Section 7(a) of the Endangered Species Act to determine the effects of the permit decision on the federally listed bald eagle. Accordingly, I have asked the Service's Director to proceed with discussions with the Division Engineer, and, if necessary, the Chief of Engineers, regarding Section 7 compliance.

In conclusion, I recommend that the District deny authorization of wetland fills associated with stormwater treatment, irrigation storage, and golf course construction unless the following concerns identified by the Department are resolved:

1. Consideration of upland alternatives such as alternate project configurations that maximize open space and utilize upland areas for stormwater detention facilities, and upland storage facilities for irrigation water.

2. Initiation of discussions with the local government, James City County, to determine whether the project can meet local ordinances without the destruction of wetlands for stormwater management.

3. Compensation for remaining unavoidable impacts through the use of habitat of low ecological value, not forested uplands, and location of compensation wetlands outside of stormwater management facilities.

4. Development of a detailed compensation plan based on (3) above prior to permit issuance, with an opportunity for Service review and comment.

Enclosed is additional information to support Department of the Interior concerns and recommendations relating to the proposed permit decision. I request your review of the decision by the District to proceed with permit issuance for the Greensprings Plantation project.

Sincerely,

(sod) Thomas B. Williams

Acting Assistant Secretary for Fish
and Wildlife and Parks

Enclosure

ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS'
EVALUATION AND REQUEST FOR REVIEW

GREENSPRINGS PLANTATION PROJECT

PROJECT DESCRIPTION

Greensprings Plantation, Inc. is proposing construction of a 36-hole public golf course facility, 540 single-family detached and 500 multi-family attached housing units, a commercial shopping center and office complex, and a 248-unit continuing care residential facility on 1402 acres of land adjacent to Powhatan Creek in James City County, Virginia. The Corps of Engineers, Norfolk District (District) has determined that development of a water intake trench, five lakes, three dry ponds, three road crossings, and eleven of the golf course fairways will directly affect approximately 5.9 acres of wetlands. The Department of Interior (Department), however, estimates that, at a minimum, an additional 7.7 acres of wetlands will be adversely affected by use of these wetlands as stormwater detention basins. The stated purpose of the project is to provide a reliable water source and storage for irrigation of a 36-hole golf course complex, as well as stormwater management for the golf course and residential development. The applicant proposes to compensate for wetland impacts resulting from the community development and the relocation of a state route (permit number CENAO-CO-R-90-1277-15) through creation of 19.1 acres of forested and emergent wetlands. The Department has determined that the proposed discharges will result in substantial and unacceptable impacts on aquatic resources of national importance.

AQUATIC RESOURCES OF NATIONAL IMPORTANCE

Regional Resources

While temporarily and seasonally flooded palustrine forested wetlands in Virginia and the Chesapeake Bay region provide an array of ecological and societal values, they are declining at an alarming rate. In the late 1970s, Virginia had approximately one million acres of wetlands (Tiner and Finn 1986). Palustrine forested wetlands constituted the majority of Virginia's wetlands. From the mid-1950s to the mid-1970s, Virginia experienced a loss of 57,000 acres of palustrine vegetated wetlands, with forested wetlands making up the majority of this loss (Tiner and Finn 1986). More recent information indicates that Virginia has suffered statistically significant wetland losses since the 1970s (Frayer 1991). Estimates based on the National Wetland Inventory maps for James City County indicate that slightly over 1,200 acres of temporarily and seasonally flooded palustrine forested wetlands occur in the County (Virginia Department of Conservation and Recreation 1990). The significance of wetlands within the Chesapeake Bay watershed has been underscored by the "Chesapeake Bay Wetlands Policy" (Chesapeake Executive Council 1988), which calls for a goal of no net loss of wetlands with a long-term goal of a net resource gain.

At one time, the Chesapeake Bay abounded with anadromous fish, and supported extensive recreational and commercial fisheries during annual spawning runs. Current estimates of landings of migratory fish are at a historical low. During the last 20 years, commercial harvests of river herring in the

Chesapeake Bay, Virginia declined by 92 percent. The significance of habitats important to anadromous fish is reflected in the commitment of the 1987 Chesapeake Bay Agreement and, later, in the "Strategy for Removing Impediments to Migratory Fishes in the Chesapeake Bay Watershed" (Chesapeake Executive Council 1988), to provide for restoration of natural passage for migratory fish.

Over 75 percent of the forest-dwelling birds breeding in Virginia are neotropical migrants, such as woodland warblers, vireos, and flycatchers (Bradshaw 1992). Information from the U.S. Fish and Wildlife Service (Service) Breeding Bird Survey indicates that over two thirds of these birds have shown steady population declines since 1980. Many of these birds require large (85 acres or greater), undisturbed, and generally mature forested areas to reproduce and sustain viable populations. Neotropical migrant bird species are of concern to the Department as evidenced by the current emphasis on the multi-agency "Partners in Flight" program.

Site-Specific Resources

The habitats within and adjacent the Greensprings Plantation property include aquatic resources of national importance, as well as other fish and wildlife resources of national significance. The Greensprings Plantation property is situated between Powhatan Creek to the east and Shellbank Creek to the west; both creeks are tributaries of the James River. Numerous intermittent and perennial streams, tributaries of Shellbank and Powhatan Creeks, flow throughout the property forming a dendritic pattern of temporarily and seasonally flooded forested wetlands in association with the streams. A large seasonally flooded/saturated broad-leaved deciduous palustrine forested wetland is associated with Powhatan Creek within and adjacent to the Greensprings Plantation property. A large complex of seasonally flooded and seasonally tidal palustrine forested wetlands exists downstream of the project site.

The wetlands of Powhatan Creek have been listed as priority wetlands under the Emergency Wetlands Resources Act (EWRA) of 1986 (Public Law 99-645). The EWRA was passed by Congress to promote the conservation of our nation's wetlands. Powhatan Creek, along with the Longhill Swamp and Chisel Run tributaries, has been identified in the Northeast Regional Wetlands Concept Plan (NRWCP) as warranting priority attention for acquisition by Federal and state agencies, or through other means of protection. Powhatan Creek was placed on the NRWCP list because of significant wildlife, fisheries, water quality and flood protection, and outdoor recreation functions and values. Powhatan Creek is confirmed as spawning habitat for river herring, specifically alewife (Alosa pseudoharengus) and blueback herring (A. aestivalis), through stream mile 8.7 (Odum et al. 1986). Blueback herring were discovered in Powhatan Creek in sampling efforts by the Virginia Department of Game and Inland Fisheries (VDGIF). Powhatan and Shellbank Creeks are tributaries of the James River, which has been designated as one of eleven focus areas in Virginia under the North American Waterfowl Management Plan due to its importance for migratory waterfowl.

Records of the VDGIF indicate the potential occurrence of two state listed threatened amphibian species, the Mabee's salamander (Ambystoma mabeei) and the barking treefrog (Hyla gratiosa), on the project site. In addition, the Virginia Department of Conservation and Recreation, Division of Natural Heritage documents the potential occurrence of several rare plant species, including the false hop sedge (Carex lupuliformis), shortleaf sneezeweed (Helenium brevifolium), and Parker's pipewort (Eriocaulon parkii).

In the spring of 1992, VDGIF discovered a newly constructed bald eagle (Haliaeetus leucocephalus) nest within Powhatan Creek wetlands. Aerial surveys conducted by the VDGIF revealed that the nest was refurbished and lined during the 1993 nesting season; however, the most current survey information indicates that the nest will not be successful this year. Given the fact that the nest was reestablished since the last nesting season and no alternate nest sites were constructed, it is reasonable to conclude that the bald eagle pair intended to utilize the nest this season. The Department considers the nest to be active.

The Virginia Department of Conservation and Recreation, Division of Natural Heritage has conducted a "Natural Areas" inventory of the lower peninsula of Virginia, including James City County. "Natural Areas" are defined by the Virginia Natural Area Preserves Act of 1989 as "any area of land [and/or] water...that retains or has reestablished its natural character...or which is important in preserving rare or vanishing flora, fauna, native ecological systems, geological, natural historical, scenic or similar features of scientific or educational value..." (Section 10.1-209 of the Code of Virginia). The Virginia Division of Natural Heritage has identified a Powhatan Creek Natural Area and assigned the area a ranking of 2, thus making the Powhatan Creek Natural Area the only Natural Area within the lower peninsula assigned "Very High Significance."

Virginia least trillium (Trillium pusillum var virginianum), a candidate for Federal listing, was discovered at three locations within the project site by Dr. Donna Ware, of the College of William and Mary. Dr. Ware suspects that her survey did not reflect all locations of this candidate plant on the Greensprings Plantation property. During Dr. Ware's June field visits, other locations of Virginia least trillium may have been obscured by surrounding vegetation or may have died back, making the results inconclusive.

SUBSTANTIAL AND UNACCEPTABLE IMPACTS

The Department has determined that the proposed discharges will result in substantial and unacceptable impacts to aquatic resources of national importance. The Greensprings Plantation development will affect a minimum of 13.6 acres of predominately palustrine forested wetlands. The Greensprings Plantation project will also result in the conversion of approximately 850 acres of predominately forested habitats to residential, commercial, and golf course developments.

Of particular significance are the impacts to aquatic resources of national importance resulting from the stormwater management aspects of the Greensprings Plantation development. Of the 5.9 acres of total direct wetland

losses, the District has determined that the proposed lakes will impact 2.7 acres of predominately forested wetlands. These wetlands and their associated functions and values will be destroyed, furthering a trend in Virginia of declining forested wetlands and increasing open water habitats (Tiner and Finn 1986). Any wetlands occurring around the perimeter of the lakes can be expected to experience the same detrimental impacts associated with stormwater runoff discussed below and fluctuating water levels, depending on the irrigation needs of the golf courses.

The District has determined that the dry ponds will affect 0.8 acres of wetlands. The proposed dry ponds will also affect, at a minimum, an additional 7.7 acres of wetlands. These impacts were recognized by the Virginia Water Control Board (VWCB), which requested compensatory mitigation for 7.7 acres of wetlands affected within the one-year stormwater volume of the three dry ponds. The District's Statement of Findings recognizes that these 7.7 acres will be inundated for 12 to 36 hours after each storm event; however, the District does not believe that these areas will be adversely affected by the stormwater. The Department concurs with the VWCB that stormwater will adversely affect the wetlands in question. Furthermore, it is clear from the District's Statement of Findings that the intention for the dry ponds is to utilize the existing wetlands for pollutant removal. The District has indicated that the natural functions of the existing wetlands will be utilized to act as filters and remove pollutants. In the Statement of Findings, the District reasoned that the stormwater facilities will allow for greater retention time to "allow the wetlands to maximize their abilities for natural biological removal processes, and to prevent the pollutants from travelling further downstream."

We do not agree with the District's conclusions regarding the impacts of stormwater on wetlands. The continuous and excessive discharge of urban stormwater into existing wetlands within the dry ponds will result in impacts to wetland hydrology and water quality, ecosystem functions, and plant and animal communities. Development of the dry ponds will result in changes to the flooding depth, duration, and frequency of the wetlands. Alterations to the natural hydroperiod can result in altered species composition of plant and animal communities (Stockdale 1991) and decreased species richness (Cooke 1991). Variations in hydraulic factors such as timing, duration, and depth of floodwaters can significantly affect the survival of many species of plants. The duration and timing of flooding during the growing season can also have a significant impact on the survival of developing vegetation. Stormwater runoff carries excess nutrients and contaminants, thus affecting water quality. Degraded water quality may in turn cause declines in indigenous plant species and colonization by exotic species (USEPA 1992). Stormwater runoff will also cause increased sediment loads in the wetlands within the dry ponds. Even low sediment concentrations can result in physiological effects to animals (Jones and Holmes 1985), such as disruption of feeding in filter-feeding aquatic insects (Lemly 1982). The discharge of stormwater to these wetlands may result in immediate impacts to wildlife, such as increased inundation within areas used by ground and shrub nesting bird species, or longer term impacts through degradation or loss of habitat. It is not surprising that many researchers have cautioned against the use of wetlands

for stormwater treatment, often citing the lack of understanding of the short and long-term impacts to wetland functions and values (Stockdale 1985).

If approved with the currently designed stormwater management facilities, the Greensprings Plantation project would add significantly and cumulatively to regional losses of wetlands due to stormwater treatment. While the Department has continually recommended denial of permit applications for the use of wetlands for direct treatment of stormwater runoff, numerous projects within the District have been authorized under both Nationwide and individual permits. Over the past two years, the District has authorized work resulting in losses and/or impacts to 37 acres of wetlands for stormwater management (permit applications 91-0126-27, 92-0162-41, 92-0725-80, 92-1688-08). In all cases, wetland compensation within stormwater management facilities has been accepted by the District as full or partial mitigation, resulting in a net loss of wetlands (further comments on this issue follow below). These figures represent only a cursory review of pre-discharge notifications and individual permit applications received in the Service's Virginia Field Office. The figures are conservative, since they do not include projects authorized under Nationwide Permit 26 that affect less than one acre of wetlands.

ADEQUACY OF PROPOSED MITIGATION OF PROJECT IMPACTS

The Service's Mitigation Policy (46 FR 7644-7663) emphasizes that project impacts be avoided and minimized to the maximum extent practicable prior to applying compensatory mitigation. The Department has determined that the District failed to require an adequate analysis of alternatives, thus resulting in potentially avoidable, and therefore unacceptable, impacts to aquatic resources of national importance. The District has accepted the applicant's nebulous arguments without detailed justification. For instance, in support of the number of golf courses and the size of the residential development, the applicant has reasoned, based upon interviews with golf course operators, that each golf course requires 500 homes and that two golf courses are needed to support both residents and tourists. The applicant has not provided evidence, such as a cost-benefit analysis, to support such statements. The Department maintains that the District has not explored the full realm of alternatives available to meet the overall project purpose of providing a viable public golf course and residential development in James City County, Virginia. The Department considers other practicable alternatives to exist, such as more multi-family attached housing units or more closely spaced single-family units to support the golf courses and require less area for development, or a single golf course to support either residents or tourists.

As with the efforts to minimize impacts from the golf course and residential development, the alternatives analysis and justification for other aspects of the Greensprings Plantation development rely heavily on cost assessments and less on reducing project impacts. Upland stormwater management facilities and irrigation water storage alternatives were not fully explored. The Department maintains that practicable alternatives that will reduce impacts from irrigation water storage and stormwater treatment are available. Such alternatives include reducing the project scope, utilizing water storage tanks, or seeking a variance with James City County to exclude the need for

the dry ponds. In an effort to minimize impacts from the stormwater aspects of the Greensprings Plantation development, the Service had recommended the District discuss the local stormwater treatment ordinance with James City County to determine if there were alternatives to avoid the destruction of wetlands. The District has not pursued this recommendation.

Even if wetland impacts were unavoidable, the Department considers the compensatory mitigation plan proposed by the applicant to be incomplete and unacceptable for several reasons. First, Greensprings Plantation, Inc. has proposed creation of 19.1 acres of palustrine forested and emergent wetlands. This acreage was determined as compensation for the 5.9 acres addressed in the District permit application at a ratio of 1.5 acres created for each acre lost, the 7.7 acres requested by the VWCB for the dry ponds (ratio of one to one), and 1.24 acres for relocation of a state route (ratio of two to one), for an overall compensation ratio of 1.3 to one. The Department does not believe that this compensation will replace the full realm of functions and values currently offered by wetlands on the Greensprings Plantation property. The proposed compensation ratios also do not reflect the amount of time needed for a forested wetland to mature and, thus, replace the functions and values lost (see Clewell and Lea 1991). It is for these reasons that the Service routinely recommends a minimum of a two to one replacement ratio for forested wetland losses. A compensation ratio of 1.3 to one is inadequate to provide for full replacement of the wetland values that will be lost by this project.

Second, although the proposed compensation is on-site, it consists of small parcels which are, for the most part, surrounded by the proposed residential development. In addition, the steep-sided slopes of the proposed mitigation areas offer no transition zone between the compensation areas and adjacent uplands. Habitat values for wildlife will be significantly less when compared to values associated with the existing contiguous mosaic of upland and wetland habitats.

Third, the District's Statement of Findings concludes that "most of the mitigation areas are located adjacent to the proposed dry ponds, which will help to offset any potential negative impacts to the existing wetlands" from stormwater runoff. However, the Department opposes creation of wetlands within stormwater management facilities for compensatory mitigation, since these wetlands would be subject to the same potential impacts from urban stormwater runoff discussed previously, as well as from the periodic maintenance activities described in the Statement of Findings. The Department questions whether a proper hydroperiod can be established, especially within the stormwater management facilities, to allow for successful establishment of the created wetland. Large fluctuations in water levels and the timing of flooding within the proposed dry ponds will inhibit survival of developing vegetation. Successful wetland creation has been shown to be hampered by fluctuating water levels (McCoy 1992).

Finally, the compensation wetlands will be created by grading down forested uplands. As stated previously, forested uplands offer important wildlife resources such as breeding habitat for neotropical migrants. The destruction of forested uplands for the creation of predominately forested wetlands will

result in an overall long-term loss of habitat value. We consider such an approach to compensatory mitigation to be inappropriate.

RECOMMENDATIONS

The Department recommends that the District deny authorization of wetland fills associated with stormwater treatment, irrigation storage, and golf course construction for Greensprings Plantation unless the following concerns are resolved:

1. Consideration of upland alternatives such as alternate project configurations that maximize open space and utilize upland areas for stormwater detention facilities, and upland storage facilities for irrigation water.

2. Initiation of discussions with the local government, James City County, to determine whether the project can meet local ordinances without the destruction of wetlands for stormwater management.

3. Compensation for remaining unavoidable impacts through the use of habitat of low ecological value, rather than higher value forested uplands, and location of compensation wetlands outside of stormwater management facilities.

4. Development of a detailed compensation plan based on (3) above prior to permit issuance, with an opportunity for Service review and comment.

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