



**DEPARTMENT OF THE ARMY**  
NORFOLK DISTRICT, CORPS OF ENGINEERS  
FORT NORFOLK, 803 FRONT STREET  
NORFOLK, VIRGINIA 23510-1096

CENAO-TS-G

4 April 2002

**MEMORANDUM FOR THE RECORD**

**SUBJECT:** Permit Application Evaluation and Decision for Application Number 01-V2032  
Submitted by Hanover County Department of Public Utilities

**1. Location of the Proposed Work:** The project is located in the Pamunkey River, in headwater wetlands that drain into Totopotomoy Creek, a tributary to the Pamunkey River, and in non-tidal wetlands of Beaverdam Creek in Hanover County, Virginia.

**2. Description of the Proposed Project:** The project consists of the Totopotomoy wastewater treatment plant on Totopotomoy Creek, a discharge forcemain (5 jurisdictional crossings bored), a discharge structure on the Pamunkey River, and the Lee Davis pump station and forcemain on Beaverdam Creek. The applicant's drawings are attached.

Forcemain Crossings: Approximately 8.5 miles (45,000 linear feet) of 36-inch forcemain pipeline that will convey treated effluent from the Totopotomoy wastewater treatment plant along Tate Lane, Pole Green Road, Route 360 and along a farm road to the discharge point on the Pamunkey River has been completed. The forcemain was installed parallel to these existing roads and crossed jurisdictional areas in five locations along Pole Green Road (Route 615) and Route 360. These five headwater stream crossings (waters of the U. S.) were all accomplished by boring (drilling) beneath the jurisdictional areas and did not, therefore, impact wetlands or waters of the U. S. With this method, there is no disturbance within the jurisdictional area and all construction and staging is accomplished on the adjacent upland. Although no wetland impacts were associated with this portion of the project and no DOA permit was required for these crossings, the as-built conditions were observed to ensure that no jurisdictional areas had been impacted and were found to be acceptable. (See figure 01-V2032-1 for typical bored crossing.)

Outfall Structure: At the end of the forcemain pipeline, the applicant proposes to construct a discharge outfall structure that will include a cascade aerator and a 36-inch discharge pipe with four 18-inch riser diffusers installed within a trench in the bottom of the Pamunkey River. The outfall will be located in the upper reaches of the Pamunkey River on its west bank approximately 1.9 miles downstream of the Route 360 Bridge in the freshwater tidal portion of the river (Latitude 37° 40' 00", Longitude 77° 11' 32"). The river is approximately 100 feet wide and bends at this location. The diffuser pipe will extend about 60 feet from the base of the bank with only the diffuser structures sitting above the river bottom. The diffusers will be under approximately 10 feet of water at ordinary high water. Stone bedding material will be placed in the trench under the pipe and the river bottom will be restored to pre-project elevations. The work area in the river will be surrounded by a turbidity curtain. Hanover County has designed the re-aeration structure and discharge diffuser for a minimum average capacity of 15 mgd, however, the outfall will have a daily rate of discharge of 10 mgd. The purpose of the cascade aerator is to add oxygen to the treated effluent in order to comply with the conditions of the VPDES permit. The natural slope of

the bank will facilitate this type of stair-step construction. The approximately 40-foot high bank will be cleared of vegetation and graded to the correct slope. According to the applicant, disturbance of the wooded bank will vary from 20 feet wide at the bottom to 80 feet wide at the top. No wetland vegetation exists on the bank. The installation of the discharge pipe and diffusers will temporarily impact 207 square feet of non-vegetated subaqueous bottom (0.0048 acres). Material removed from the river bottom and from the slope will be disposed of in an off-site non-wetland area at Luck Stone. Riprap will be placed both above and below the ordinary high water level and an erosion matting material will be placed on the bank to stabilize the slope and prevent erosion. The natural river flow and river bottom slope should serve to keep the area free of sediment and debris. (See figure 01-V2032-2 for view of discharge location from top of slope.)

Lee Davis Pump Station: The proposed Lee Davis Road Pump Station will be constructed on an approximately 0.5-acre upland area adjacent to Beaverdam Creek at the intersection of Lee Davis Road (Route 643) and Old Hickory Road (Latitude 37° 37' 10", Longitude 77° 20' 26"). An existing 24-inch trunk sewer line already crosses the wetlands in this location within an existing 25-foot wide sewer easement. An approximately 80-foot long, 24-inch gravity sewer line will be constructed from the pump station within a proposed 30-foot wide utility easement to intersect with the trunk sewer line at a 48-inch diameter diversion structure and manhole. A 70-foot long, 16-inch forcemain from the pump station will be constructed parallel to the gravity sewer line and then parallel to the existing 24-inch trunk sewer line east for about 100 feet to Lee Davis Road within the existing 25-foot wide easement. The remaining 4.2 miles (22,000 linear feet) of the forcemain from the pump station to the proposed treatment plant will be constructed outside of the Corps' jurisdiction on the upland along Lee Davis Road, Pole Green Road and Tate Lane. Approximately 30 square feet of vegetated wetlands (0.0007 acres) will be permanently impacted by the construction of the diversion structure. An estimated 5,600 square feet of wetlands (0.1285 acres) will be temporarily impacted by the gravity sewer and forcemain crossings of Beaverdam Creek. The pipes will be installed in an open-cut trench. Excess material will be disposed of off-site in a non-wetland area. After installation of these pipes, the substrate will be restored to grade and allowed to re-vegetate with the existing scrub-shrub community. (See figure 01-V2032-3 for sewer line location in Beaverdam Creek. Figure 01-V2032-4 shows the upland location of the Lee Davis pump station.)

Totopotomoy Wastewater Treatment Plant: The proposed Totopotomoy wastewater treatment plant is located on a 128-acre site at the end of Pole Green Park Lane, off Pole Green Road (State Route 627) on Totopotomoy Creek, a tributary to the Pamunkey River (Latitude 37° 39' 03", Longitude 77° 18' 50"). Work on the wastewater treatment plant began in August 2000, and the filling of wetlands at the site was completed in October 2000 under Nationwide Permits which were later invalidated by a decision of the United States District Court.

As constructed, the wastewater treatment plant has impacted a total of 0.1617 acres (7,044 square feet) of forested headwater wetlands. Approximately 0.1317 acres of non-tidal forested (5,738 square feet) and scrub-shrub wetlands and 0.0200 acres (871 square feet) of waters of the U. S. (239 linear feet of headwater intermittent stream) were impacted by grading and site preparation in conjunction with the construction of the proposed influent pump station and drainage improvements. A portion of the foundation for the influent pump station has been constructed below grade. Another 0.0100 acres (435 square feet) of forested headwater wetlands have been impacted by the placement of fill in the preparation of a pad for a future biological treatment tank. No other wetland impacts are associated with this component of the project. (Figure 01-V2032-5 shows the edge of fill in the area downslope of where the headwater wetlands were filled for the construction of the pad. Figure 01-V2032-6 shows the slope and the area where the forested headwater wetlands and waters of the U. S. were filled for preparation of the site for construction of the influent pump station.)

Proposed Wetland Mitigation: As compensation for the total of 0.1624 acres of permanent wetland impacts (7,074 square feet), Hanover County proposes to mitigate either by contributing to the Virginia Wetlands Restoration Trust Fund (at a compensation ratio of 2 to 1 for forested wetland impacts, 1.5 to 1 for scrub-shrub wetland impacts, and 1 to 1 for waters of the U. S. impacts), or by the construction and preservation of a multi-project mitigation site on the wastewater treatment plant property (7.83 acres wetland preservation, 0.82 acres wetland creation, and 1.31 acres riparian buffer). Any excess mitigation offered could potentially be used as compensation for future County projects within the Totopotomoy Creek watershed.

**3. Purpose and Need of the Proposed Work:** The applicant's stated purpose for the project is to provide additional wastewater treatment capacity so that the County may implement their adopted comprehensive plan for "Smart Growth", limiting high density, suburban-style growth to a small portion of the County (20%) and preserving the rural character of the remainder of the County. The plan provides public utilities in the Suburban Service Area in 5-year incremental phases of controlled growth. The County's Beaverdam pump station currently pumps sewage to Henrico County across the Chickahominy River through a 24-inch line. Hanover County will continue their contract for 5.4 mgd of wastewater treatment on a peak rolling 90-day average with Henrico County. However, Hanover County expects that they could exceed this allotted sewage flow as early as the spring of 2003, and will need to provide additional treatment capacity to accommodate their anticipated 3 to 4% growth for the next 7 to 10 years.

Because Hanover County's stormwater system ties into their sewage system, actual wastewater flows fluctuate with the amount of precipitation. Hanover County is currently under their projections for wastewater flow to Henrico primarily due to the extended drought conditions the entire region has been experiencing. However, this has not always been the case. For example, in 1998, wastewater flows to Henrico were at 4.5 mgd, which was over the County's projection for that year. Exact predictions for sewage flow are not possible because future weather conditions and the precise number of new connections to the system are unknown. Since 1998, Hanover County has added over 1,500 new customers to their sewer system. Another 4,000 lots currently zoned for development could be connected to the sewer system at any time. These 5,500 units would add up to 1.9 mgd to Hanover's average flow.

The Totopotomoy wastewater treatment plant will have an initial capacity of 5 mgd, with a currently planned expansion to a capacity of 15 mgd to meet the needs of the County through 2030. The plant has been designed so that if required, it can eventually be expanded to a 30 mgd facility in 5 mgd increments. The proposed Lee Davis Road pump station and forcemain will replace the previously proposed Totopotomoy interceptor extension as the initial source of wastewater supply for the proposed wastewater treatment plant in quantities nearly comparable to the Totopotomoy interceptor. The reduction in the flow being sent to Henrico County by the construction of the Lee Davis pump station and forcemain will allow for the continued transfer to Henrico County of sewage flow collected in the Totopotomoy Creek basin. As needed in the future, other wastewater conveyance projects will connect to the wastewater treatment plant.

**4. Project History:** The project has been considered by the Corps under four permit numbers: pre-application 99-R0875 for the Totopotomoy interceptor, Totopotomoy wastewater treatment plant, five wetland crossings of the forcemain, and the outfall structure on the Pamunkey River; permit application 99-V1877 for the Totopotomoy wastewater treatment plant, five wetland crossings of the forcemain, and the outfall structure on the Pamunkey River; permit application 00-V1332 for the Totopotomoy

interceptor alone; and permit application 01-V2032 for the currently proposed Totopotomoy wastewater treatment plant, the outfall structure on the Pamunkey River and the Lee Davis pump station.

The Corps determined that the outfall structure on the Pamunkey River, the Totopotomoy wastewater treatment plant and the three wetland crossings of the forcemain represented a single and complete project with independent utility from the Totopotomoy interceptor. In a letter dated 7 June 2000, the Norfolk District verified that Hanover County's application 99-V1877 for work in wetlands and waters of the U. S. for the construction of the outfall structure, the Totopotomoy wastewater treatment plant and the three wetland crossings of the forcemain would be minimal and satisfied the criteria of the Corps' Nationwide Permits. These authorizations were later invalidated by a decision of the United States District Court.

The outfall structure and diffuser were found to satisfy the criteria of the Corps Nationwide Permit 7 with a special condition requiring submittal of the method of construction access and installation prior to commencement of any work in waters of the U. S. The means and methods that the contractor planned to utilize for installation of the outfall structure were approved by the Norfolk District on 9 July 2001. While commenting on permit application 00-V1332 for the Totopotomoy interceptor, the National Marine Fisheries Service's letter of 31 August 2000 made a recommendation for a time-of-year restriction for the protection of anadromous fisheries in the Pamunkey River. Accordingly, in a letter dated 3 October 2000, the Norfolk District modified the Nationwide Permit authorization to include a special condition prohibiting construction of the outfall structure from 15 February through 30 June of any year in order to protect spawning and nursery habitat for anadromous fish. The wetland crossings associated with the forcemain were found to satisfy the criteria contained in the Corps Nationwide Permit 12 with special conditions to minimize clearing through jurisdictional areas and to prevent drainage of the wetlands. These permitted crossings were later constructed by directional boring, a method that did not require Corps authorization. The filling of wetlands and waters of the U. S. in conjunction with the construction of the treatment plant was found to satisfy the criteria contained in the Corps Nationwide Permit 26.

On 25 July 2000, the Norfolk District asserted discretionary authority over the Totopotomoy interceptor (00-V1332) after determining that the individual and cumulative impacts may be more than minimal. The majority of the pipeline for the Totopotomoy interceptor would have been within wetlands adjacent to Totopotomoy Creek and would have required six crossings of Totopotomoy Creek. As originally proposed, the project would have resulted in the permanent conversion of 9 acres of wetlands (forested converted to scrub-shrub) and temporary impacts to 22 acres of wetlands for construction access. The wetland impacts were later reduced to 3.6 acres of permanent conversion and 8.5 acres of temporary impacts for construction access.

The principal opponents of the project (Mrs. Frances Crutchfield and her son, Henry Broaddus) brought suit against the Corps in U. S. District Court on 8 August 2000 claiming that the Corps' actions were in violation of the Clean Water Act, the National Environmental Policy Act, the National Historic Preservation Act, and the Administration Procedures Act. The Court ruled on 14 August 2001 that the Nationwide Permit verifications were invalid and remanded the case to the Corps to evaluate the Totopotomoy interceptor with the remaining project components as a single and complete project.

Work on the Totopotomoy wastewater treatment plant had begun in August 2000, and the filling of wetlands at the site was completed in October 2000. Construction of the outfall structure had not commenced before the permit was invalidated by the Court decision. Hanover County installed all five forcemain wetland crossings by boring method and did not utilize the Nationwide Permit 12 authorization.

On 16 November 2001, Hanover County submitted a new application (01-V2032) proposing the construction of the Lee Davis pump station in lieu of the originally proposed Totopotomoy interceptor. The remainder of the project (treatment plant, forcemain and discharge outfall) remains the same as originally proposed. At the same time, the County formally withdrew their application for the Totopotomoy interceptor.

In a brief dated 27 November 2001, Mrs. Crutchfield and Mr. Broaddus (plaintiffs) alleged that Hanover County's permit application fails to "fully and fairly disclose all of the activities the County has planned that (1) are 'reasonably related' to this project, and (2) will require Corps authorization." The plaintiffs claim that the proposed Lee Davis Road pump station will serve a completely different area of the county than the Totopotomoy Interceptor and that the County intends to provide wastewater collection and treatment services to areas within the developing Totopotomoy Creek watershed and others. They alleged, therefore, that the overall project will actually have greater impacts than those disclosed to the Corps, rather than lesser impacts.

In response, Hanover County indicated in their brief dated 29 November 2001 that the proposed Lee Davis pump station would replace the formerly proposed Totopotomoy interceptor as the source of wastewater supply for the Totopotomoy wastewater treatment plant. The County also indicated that on 28 November 2001, the Board of Supervisors had voted to amend the Wastewater Treatment Facility Capital Improvement Plan to replace the interceptor extension with the Lee Davis pump station. Therefore, there is no longer funding for the interceptor extension and the County has indicated that they have no current plans to pursue the project. Hanover County stated that the Comprehensive Plan does not require the construction of the interceptor extension, rather it requires that the County provide sewer capacity in an area when it comes into phase, but does not require that specific collection lines be constructed. Although the interceptor sewer extension would have originally been the most likely way of providing sewer collection in the Totopotomoy basin, it is not the only way to provide sewer capacity. Sewer capacity for a portion of the area had been provided in 1998 by the Shelton Pointe pump station.

On 6 December 2001, the Corps met with Hanover County and DEQ to discuss the County's future plans so that the Corps could determine if any of those activities would be reasonably related to the currently proposed project. The County explained that the interceptor extension was originally proposed to provide initial flow to the Totopotomoy wastewater treatment plant from the existing pump station No. 5 to offload wastewater being sent to Henrico County and to provide enough flow to economically operate the wastewater treatment plant. Although the Lee Davis pump station will serve a portion of the Beaverdam Creek basin rather than the Totopotomoy Creek basin that would have been served by the Totopotomoy interceptor, the resultant reduction in flow being sent to Henrico County will allow for the continued transfer to Henrico County of sewage collected in the Totopotomoy Creek basin. Furthermore, the Lee Davis pump station will provide wastewater flow to the Totopotomoy wastewater treatment plant in quantities nearly comparable to the Totopotomoy interceptor and will allow Hanover County to remain within its contractual limits of 5.4 mgd of treatment capacity with Henrico County for an additional 7 to 10 years with the anticipated 3 to 4% growth. The County stated that when the Lee Davis pump station comes on line, flow from the existing Shelton Pointe pump station would be diverted from Henrico County to the proposed treatment plant through the Lee Davis pump station. Later, when warranted by development, the replacement of a portion of the proposed 16-inch pipe from the Lee Davis pump station with a 20 to 24-inch pipe and other upgrades to the Shelton Point pump station would provide additional capacity for the Totopotomoy service area well beyond the anticipated 10-year period. This alternative would eliminate the need for the originally proposed Totopotomoy interceptor in the reasonably foreseeable future.

The County presently anticipates much less development (with less demand for sewer service) along the originally proposed interceptor route than was expected when it was originally added to the Comprehensive Plan. Large tracts of land have been designated as historic districts (Totomoi Historic District and Rural Plains Historic District), and the County's hopes to attract a chip plant to locate within the county did not materialize. The County anticipates that the existing Avondale Pump Station, Berkeley Forest Pump Station, Royal Glen Pump Station and Pump Station No. 5, (all of which currently send flow to Henrico County and are expected to continue to do so for the next 7 to 10 years) would continue to serve their respective areas of the county. Upgrades of the Avondale and Number 5 pump stations to allow for additional flow, if needed, would involve larger pumps and possibly a new force main along Route 301. The County also indicated a new pump station for the Powhite Creek basin may be constructed as early as 2007 to pump flow to Henrico or to the new treatment plant in order to offload more flow from Henrico in the future. Although the County does not claim that some portion of the interceptor will never be built in the future by the County or others, they have stated that their more detailed evaluation does not justify spending \$7 million for a new interceptor when they have much less expensive options to satisfy their needs for the next 7 to 10 years which can be phased in as needed.

The Corps regulations at 33CFR 325.1(d)(9) state that an application for an individual permit will be considered complete when sufficient information is received to issue a public notice and the issuance of a public notice will not be delayed to obtain information necessary to evaluate an application. According to 33CFR 325.1(d)(2), all activities which the applicant plans to undertake which are reasonably related to the same project and for which an individual Department of the Army permit would be required should be included in the same permit application and district engineers should reject as incomplete any such application which fails to comply with this requirement.

The County has formally withdrawn their permit application (00-V1332) for the Totopotomoy interceptor and outlined a number of future options for handling sewage within the County that do not involve the construction of the Totopotomoy interceptor. Furthermore, the proposed Lee Davis pump station will provide virtually the same initial flow to the Totopotomoy wastewater treatment plant as would the Totopotomoy interceptor. Based on the above, the District Engineer determined prior to the issuance of the public notice that Hanover County has fully disclosed all of the activities that are reasonably related to the project, and that the application before the Corps is for a single and complete project with independent utility from the previously proposed Totopotomoy interceptor as well as from any future improvements to the conveyance of wastewater within the County.

The Norfolk District began a public interest review of the new application under an individual Department of the Army permit. A 30-day Public Notice was issued on 11 December 2002 with expiration on 11 January 2003. At the request of the U. S. Fish and Wildlife Service, the principal opponents and other opponents of the project, the comment period was extended to 25 January 2003. A field meeting to hear the concerns of the principal opponents was conducted on 18 January 2003. Mrs. Crutchfield, Mr. Broadus and their attorneys and consultants outlined their concerns about water quality, inclusion of the Totopotomoy interceptor as part of the project, consideration of other alternatives and potential effects to anadromous fish in the Pamunkey River.

A site visit was conducted by Corps staff on 14 December 2001 in order to verify the wetland impacts of the previously proposed portions of the project and to evaluate the potential impacts of the newly proposed Lee Davis pump station. Based on the findings of the 14 December 2001 field evaluation and other field observations, as well as a desk-top review of information available at the time, it was concluded that the magnitude of the proposed and completed impacts on wetlands and waters of the U. S. are minimal, both individually and cumulatively and would qualify for authorization under general permits. The originally proposed Totopotomoy interceptor has been replaced by the proposed Lee Davis

pump station. The wetland impacts associated with the Totopotomoy interceptor are neither a part of the project that is before the Corps nor are they in their entirety reasonably foreseeable cumulative impacts of the project. Therefore, it appeared that the proposed discharge outfall structure would qualify for Nationwide Permit 7; the completed wetland impacts at the Totopotomoy wastewater treatment plant would qualify for Nationwide Permit 39; the proposed utility line activities at the Lee Davis pump station would qualify for Nationwide Permit 12; and the proposed diversion structure and manhole would qualify for Nationwide Permit 18. However, this preliminary determination was contingent upon verification that the project would meet the other terms and conditions of these Nationwide Permits as well as a review of comments received from state, federal and local agencies and the general public in response to the Corps' Public Notice. According to 33 CFR 330.4(e)(3), "The division or district engineer will restore authorization under the NWP's at any time he determines that his reason for asserting discretionary authority has been satisfied by a condition, project modification or new information."

**5. Wetland Impacts:** Hanover County is seeking authorization for 30 square feet (0.0007 acres) of permanent and 5,600 square feet (0.1285 acres) of temporary wetland impacts associated with the proposed Lee Davis pump station as well as authorization for the completed 7,044 square feet (0.1617 acres) of permanent impacts to non-tidal headwater wetlands associated with the construction of the treatment plant, and temporary impacts to 207 square feet (0.0048 acres) of subaqueous bottom in the Pamunkey River for the installation of the discharge pipe. No impacts to wetlands occurred during the construction of the five completed forcemain crossings of jurisdictional areas. The project would result in a total of 7,074 square feet (0.1624 acres) of permanent impacts and 5,807 square feet (0.1333 acres) of temporary impacts.

The wetland delineation for the treatment plant site submitted by Timmons, Inc. on 11 September 1998 for project number 98-E152 was verified by the Corps in a jurisdictional determination and wetlands delineation confirmation letter dated 9 November 1998. As stated in the letter, the confirmation of delineation is valid for a period of 5 years from the date of the letter (until 9 November 2003).

A wetland delineation that was submitted on 17 October 1997 by Timmons, Inc. on behalf of Kimley-Horn and Associates, Inc. for the extension of Old Hickory Road (97-E134) was verified by the Corps in a confirmation of wetland delineation letter dated 3 December 1997. As stated in the letter, the confirmation of delineation is valid for a period of 5 years from the date of the letter (until 3 December 2002). The Corps' confirmation of jurisdictional areas on approximately 12.46 acres of land included the area where the pump station is now proposed as well as a portion of the wetlands where the utility line easement will cross. The field jurisdictional determination on 14 December 2001 confirms that the proposed pump station would be constructed on uplands. A portion of the proposed 30-foot wide utility easement would fall within the palustrine forested wetland fringe depicted on the 1997 Timmons delineation and the remainder of the utility lines and the junction box would be constructed in waters of the U. S., including a scrub-shrub wetland community within the proposed and existing utility easements.

**Avoidance and Minimization:** In selecting the proposed Totopotomoy wastewater treatment plant site, Hanover County chose a site where wetlands could be largely avoided because they are located along the fringes of the property. Design plans for the construction of the wastewater treatment plant further reduced the potential for wetland impacts. By locating and orienting the footprint in the central portion of the property, impacts to forested headwater wetlands on the eastern portion of the property will be avoided with future expansions. Furthermore, maintaining a vegetated upland buffer between the facility and the wetlands and waters of Totopotomoy Creek will further reduce indirect impacts to these resources.

Even with these measures to reduce wetland impacts, the filling of 0.16 acres of jurisdictional wetlands and waters of the U. S. in the northern portion of the treatment plant site was integral to the original treatment plant design and was unavoidable. These wetlands were impacted by grading and site preparation in conjunction with the construction of the influent pump station and drainage improvements. The County no longer proposes to continue constructing the influent pump station (see Section 11, below) and all existing structures will be removed to 4 feet below the surface and the area will be filled, graded and seeded. Without the influent pump station, these wetland impacts most likely could have been avoided. However, restoration of the wetlands in their original location is not feasible, because a sedimentation basin required to prevent sediment from entering Totopotomoy Creek and other required grading for drainage improvements and erosion and sediment controls will continue to impact this same area.

During the final design of the Lee Davis pump station, the County was able to modify their plans for the structure intersecting the proposed gravity sewer line to the existing trunk sewer line to further avoid permanent wetland impacts. The originally proposed 240 square feet of wetland impacts for the construction of a junction box have been reduced to 30 square feet for the construction of a diversion structure and manhole.

Wetland Compensation: A sedimentation basin has been constructed at the bottom of the slope below the influent pump station site (see figures 01-V2032-7 and 01-V2032-8). The applicant proposes to establish a multi-project wetland mitigation site in this location as one of their mitigation options. The site would provide 7.83 acres of wetland preservation, 0.82 acres of wetland creation, and 1.31 acres of riparian buffer which could potentially be used as compensation for future County projects within the Totopotomoy Creek watershed. However, mitigation planting cannot begin until the basin is no longer needed to control sedimentation from the work site. Hanover County anticipates that if construction at the site is allowed to resume, the treatment plant will be completed in 12 to 24 months. The DEQ's VWPP permit would require that mitigation commence before that time, therefore, DEQ would prefer that the County utilize their other stated mitigation option of contributing to the Virginia Wetlands Restoration Trust Fund.

The Virginia Wetlands Trust Fund provides permittees an additional mechanism to compensate for wetland impacts authorized by Corps permits under section 404 of the Clean Water Act. The Trust Fund is managed by the Nature Conservancy (TNC) in accordance with a Memorandum of Understanding with the Corps. TNC is a passive recipient of mitigation funds and submits proposals to the Corps for the expenditure of funds to restore, create, enhance, and preserve wetlands. The proposed compensation ratio for contribution to the Trust Fund is 2:1 for forested wetland impacts, 1.5:1 for scrub-shrub wetland impacts, and 1:1 for waters of the U. S. impacts. The sediment basin appears to be a suitable site for the establishment of wetlands. It is adjacent to existing wetlands and if properly graded and planted, should support wetland vegetation. The Norfolk District is equally satisfied that the proposed in-lieu fee contribution to the Virginia Wetlands Restoration Trust Fund would be appropriate for this minimal level of wetland impacts. On 20 February 2002, DEQ issued their VWP General Permit for this project including a contribution of \$42,759 to the Virginia Wetlands Restoration Trust Fund as compensation for the associated wetland and intermittent stream impacts.

EPA's Region III Acting Director of the Office of Environmental Programs considers the wetland impacts to be minimal. He stated in his 4 February 2002 letter: "EPA has considered the impacts to wetlands associated with this project, and has concluded that these impacts will be minimal, and acceptable, provided that the compensatory mitigation proposed by the applicant is fully and effectively implemented."

The District Engineer concurs with EPA and DEQ that the magnitude of the proposed and completed impacts to wetlands and waters of the U. S. associated with this project are minimal and acceptable and concurs with DEQ's stated mitigation requirement for in-lieu fee contribution to the Virginia Wetlands Restoration Trust Fund.

**6. Historic Resources:** A portion of the forcemain pipeline has been constructed along the Route 360 right-of-way that passes through the boundaries of the Marlbourne National Historic Landmark (Register No. 66000837). Hanover County modified the proposed method of installation of the forcemain through the two crossings of waters of U. S. that fell within the limits of the Marlbourne National Historic Landmark to avoid wetland impacts. Therefore, there is no Corps jurisdiction over any of the completed work within Marlbourne. Also, the outfall location and a portion of the forcemain which runs parallel to an existing farm road lie approximately 150 feet north of the defined boundary of the archaeological site known as Newcastle Town (44HN860). Newcastle Town is listed on the Virginia Landmarks Register and is considered to be eligible for listing on the National Register of Historic Places. The Corps' Area of Potential Effect (APE) for the outfall structure is from the top of the bank to the end of the outfall in the Pamunkey River and is outside of the boundaries of Newcastle Town.

The Corps determined that based on the information submitted by the County, no historic resources listed or eligible for listing in the National Register of Historic Places have been found within the Corps' identified APE for this project. In accordance with coordination procedures between the Corps and the Virginia Department of Historic Resources, in a letter dated 4 May 2000, the Norfolk District provided the Corps' original opinion that Hanover County's proposal to construct the Totopotomoy wastewater treatment plant, forcemain and diffuser outfall will have no effect on historic resources within the APE.

In a letter dated 7 June 2000, the Virginia Department of Historic Resources (VDHR) concurred with the Corps' findings and stated that project number 99-V1877 for the Totopotomoy wastewater treatment plant, forcemain and outfall discharge structure (VDHR File No, 98-0066) would have no adverse effect on historic resources.

The new permit application (01-V2032) was coordinated with VDHR by public notice. When the Norfolk District had not received comments on the Public Notice from VDHR at the end of the comment period, the project manager called VDHR on 30 January 2002 to seek the status of their comments. During this telephone conversation, the Corps' project manager identified the APE for the Lee Davis pump station to be the entire easement for the pipeline, but not the upland portion of the project. The APE for the remainder of the project had already been identified during the previous coordination.

In a letter dated 31 January 2002, VDHR indicated that their prior finding of no adverse effect, conditioned on coordination of design changes, is still valid for the sewer line, Totopotomoy wastewater treatment plant and outfall, and remains in effect; and also reached the same finding for the Lee Davis pump station. VDHR added the following condition to the no adverse effect finding: "The Corps will coordinate with the DHR regarding the potential development of a multi-project wetlands mitigation site at the wastewater treatment plant site." VDHR also advised that burials have been encountered elsewhere in the project area and that since the possibility of encountering additional burials exists within the present project boundaries, their office should be notified immediately if human remains are discovered during project implementation.

The District Engineer concurs with VDHR that as proposed and completed, the outfall structure, Lee Davis pump station, Totopotomoy wastewater treatment plant and forcemain will have no adverse effect

on any historic resources that are listed or eligible for listing in the National Register of Historic Places. The District will include VDHR's recommendations as conditions of any permit issued on this project.

**7. Threatened and Endangered Species:** During coordination for the VPDES permit for the originally proposed Totopotomoy wastewater treatment plant project (99-V1877), the U. S. Fish and Wildlife Service (FWS) commented to DEQ on the potential impacts to the federally listed endangered dwarf wedge mussel (*Alasmidonta heterodon*) in the area of the Pamunkey River within the influence of the proposed wastewater discharge. In a letter dated 11 March 1999 to DEQ, the FWS stated that they could not concur with the findings of the first survey for the dwarf wedge mussel and requested that another survey be conducted in May or June in the same area. In a letter dated 29 March 1999, EPA wrote to the Virginia Department of Environmental Quality that they had reviewed draft VPDES permit VA0089915 and had "no objection to the issuance of the permit." However, EPA did have concern for DEQ's consideration of the FWS's recommendation that a second freshwater mussel survey be conducted prior to issuance of the permit to ensure compliance with the Endangered Species Act. After review of the second survey, the FWS stated in a letter addressed to Hanover County's environmental consultants dated 8 September 1999 their opinion that appropriate habitat for the dwarf wedge mussel does not occur at the project site and found that the project is not likely to adversely affect the species.

DEQ indicated in a letter to the FWS dated 27 April 1999: "The high degree of treatment required by the permit, the use of an effluent diffuser, the conservative assumptions made in the effluent mixing analysis and the use of UV light rather than chlorine for effluent disinfection all combine to make it highly unlikely for the discharge to have an impact should any endangered species exist in this reach of the Pamunkey River."

The new application (01-V2032) was coordinated with the FWS by public notice. No threatened or endangered species were identified on the Norfolk District's Threatened and Endangered Species database search of one minute Latitude and Longitude around each project location. However, a 15 January 2002 letter from the Virginia Department of Conservation and Recreation's (DCR) Division of Natural Heritage indicated the potential for appropriate habitat within the project area for the federally listed threatened small whorled pogonia (*Isotria medeoloides*) which is also a state-protected plant. DCR recommended that the project site be surveyed for the species. In a letter dated 25 January 2002 responding to the Public Notice for application 01-V2032, the FWS maintained their earlier determination that the project was not likely to adversely affect the dwarf wedge mussel. They noted, however, that the project occurs within the range of the small whorled pogonia and recommended a survey within appropriate habitat at the project site. The Corps project manager confirmed with FWS staff that all of the project component locations were within the area that should be surveyed, and this information was relayed to the applicant. A letter dated 6 February 2002 from Resource International, Inc. reported on the results of the investigation to identify potential habitat for the species and concluded that "none of the areas observed during this investigation meet the criteria for suitable habitat for the small whorled pogonia." In a letter dated 20 February 2002, the FWS stated that after review of the report and discussion with Resource International, Inc., "... it is the opinion of the Service that appropriate habitat for this species does not occur at the project site and therefore, this project is not likely to adversely affect the small whorled pogonia."

The District Engineer concurs with the FWS that no component of the project will adversely affect a federally listed threatened or endangered species.

**8. Water Quality:** Water quality is one of the public interest factors considered by the Corps when conducting a public interest review. The issuance of the State's VPDES permit and VWPP/401 Water Quality Certification is considered conclusive with respect to water quality considerations unless the EPA Regional Administrator advises the Corps otherwise. Some commenters expressed concern that the State may not have fully considered the Section 303(d) listing of the Pamunkey River, the reduction in releases from Lake Anna, or other water quality concerns in their permit reviews. EPA reviewed Hanover County's VPDES permit as well as Virginia Power's VPDES permit for Lake Anna and did not object to these DEQ actions. Although the Corps is not required to validate another agency's permit process, the District Engineer has conducted a review of each of these factors to determine whether all issues were considered and addressed in the State's review of Hanover County's proposal.

**a. Impaired Waters Status (303(d)):** Section 303(d) of the 1972 Clean Water Act requires states to develop a list of impaired waters within their jurisdiction. Impaired waters are those that fail to meet water quality standards established by the state and based on criteria set by EPA. Numeric standards are set based on designated uses such as drinking water, recreation and fish and wildlife uses. Virginia began developing its list in September 1997 after completing five-years of data collection between 1992 and 1997. Virginia submitted its draft report to EPA on 29 April 1998. A revised draft, based on EPA's comments, was made available for public comment in June of 1998. On 14 October 1998, Virginia submitted its final 303(d) package to EPA.

On 16 November 1998 EPA issued a letter to DEQ partially approving and partially disapproving Virginia's 303(d) list. EPA believed that waters on the State's non-inclusion list should be on the 303(d) list. Among those waters were the tidal York River and the tidal portions of the Pamunkey and Mattaponi Rivers. On 30 December 1998, EPA notified the public of a public hearing and requests for comment in response to its intent to list the tidal portion of the Pamunkey River as well as other impaired waters.

On 11 May 1997, Hanover County applied for a permit under the Virginia Pollutant Discharge Elimination System (VPDES) for the proposed Totopotomoy wastewater treatment plant. The VPDES permit (VA0089915) was issued on 28 April 1999. According to DEQ memorandum written on the same day as issuance of the VPDES permit, the application was not complete until 13 October 1998, the day before the 303(d) package was submitted to EPA. According to the same memorandum, EPA submitted comments on the VPDES permit application on 5 August 1998, 6 November 1998 and 29 March 1999. EPA's review of the VPDES permit overlapped with their review of Virginia's 303(d) list of impaired waters; and in their 29 March 1999 letter to DEQ, EPA stated that they had no objection to the issuance of the permit (VA0089915). These comments were made three months after EPA had notified the public of their intent to include the Pamunkey River on Virginia's 303(d) list.

The District Engineer has concluded that EPA was aware of the impending 303(d) listing of the Pamunkey River at the time they reviewed and commented on Hanover County's draft VPDES permit. Furthermore, the District Engineer accepts the issuance of the VPDES permit as conclusive in that all water quality matters related to Section 303(d) and Section 402 of the Clean Water Act have been adequately addressed.

**b. Numeric Criteria for Pollutants of Concern (poc's):** Effluent limitations for poc's are established for 303(d) waters by individual waste load analyses. Models based on EPA criteria are used to model water quality characteristics upstream and downstream of the proposed effluent discharge location. The modeling results are used to establish effluent limitations sufficient to protect water quality standards for the receiving water. Initial modeling results for the Pamunkey River indicated that there is

a significant degree of tidal mixing in the river at the outfall location and the project will, therefore, not impair water quality standards. However, DEQ determined that conventional models are inappropriate for use on tidal portions of the Pamunkey River and have instead relied on best professional judgement. A DEQ memorandum dated 2 June 1997 recommended effluent limitations, based on their staff's best professional judgement, set at 10 mg/l for Biochemical Oxygen Demand (BOD), 10 mg/l for Total Suspended Solids (TSS), and 3 mg/l for Total Kjeldahl Nitrogen (TKN); or 10-10-3.

DEQ believed the best professional judgement approach was warranted based on the difficulty of modeling tidal systems and the concern that dissolved oxygen (DO) in the river is fully allocated. According to a 13 October 2001 letter to VIMS, DEQ stated that domestic sewage contains approximately 3.0 mg/l of nitrogen compounds that are not subject to biological degradation. Adding nitrogenous compounds increases microbial activity which places additional demand on DO levels. DEQ has concluded that limiting effluent TKN to 3.0 mg/l achieves water quality standards established for DO in the river. Also, in response to public comments concerning DO, the VPDES permit holds Hanover County to a higher standard for the discharge than would normally be required. The VPDES requires that the dissolved oxygen level of the effluent from the Totopotomoy wastewater treatment plant be increased to 6.5 mg/l rather than the usual standard of 5.0 mg/l. The proposed cascade aerator will add oxygen to the treated effluent in order to comply with this condition of the VPDES permit.

An internal DEQ memo dated 9 March 1987 recommended the 10-10-3 restriction for those waters that cannot be modeled by conventional methods. The memo stated that DEQ's experience in applying modeling technology to small streams indicates that the 10-10-3 limits are representative of effluents that are self-sustaining. Self-sustaining levels are those that normally will not violate stream standards.

DEQ considers the "self-sustaining" standard of 10-10-3 to be valid regardless of flow regimes. The Virginia Institute of Marine Science (VIMS) modeled dilution characteristics to assess instream waste concentrations for both 5mgd and 10 mgd scenarios. Modeling results indicate that flows in the river in combination with tidal current velocities and the use of a "diffuser" will provide for a complete mix of effluent. These results have led DEQ to conclude that the 10-10-3 limits will neither contribute to substantial increases in BOD, nor add oxygen demanding substances to the river at either the 5 mgd or 10 mgd discharge rates. Also, VPDES permit conditions require Hanover County to submit a plan of action detailing continued compliance with the permit conditions when influent flows reach 95 percent of the design capacity.

In a letter to VIMS dated 13 October 2000 DEQ stated that, given a moderate degree of dilution, limits similar to those in the VPDES permit "...have resulted in impacts in the receiving stream that are generally very difficult or impossible to distinguish by routine monitoring." DEQ further stated that "Given that there is approximately 4:1 dilution available for the effluent, it is unlikely that the permitted limits will result in elevating the cBOD5 concentration in the river by more than about 2 mg/l beyond that naturally occurring." DEQ stated their belief that "...the stream will be able to assimilate the additional concentration without any significant lowering of the existing quality." In addition, any changes to effluent flow rates beyond the permitted flows will require a permit modification. This will result in additional public comment and an evaluation of water quality impacts by DEQ. In the same letter, DEQ stated "...although the permit does not directly limit flow, the permittee cannot increase the effluent flow beyond the current design flow without a permit modification and the public review and comment that is part of such a modification."

The District Engineer has concluded that the effluent limits established by DEQ, based on their extensive experience in employing similar methodologies to waters that cannot be modeled by conventional means, are not unreasonable and are within their purview. Impacts from poc's should be minor.

**c. Lake Anna Releases:** The Virginia Power-North Anna Nuclear Power Station operates Lake Anna, located on the North Anna River, a tributary to the Pamunkey River. The VPDES permit under which Virginia Power operated was due to expire on 2 October 2000. An application for the re-issuance of the permit was received by DEQ on 5 April 2000 and forwarded to EPA for comment. A public meeting was held on 7 June 2000, the draft Lake Level Contingency Plan (LLCP) was sent for comments on 1 August 2000, and a public hearing was held on 6 November 2000. According to a DEQ memorandum dated 17 November 2000, EPA and the Virginia Department of Health notified DEQ that they had no objections to the re-issuance of the permit.

The DEQ memorandum also stated that recent legislation required any VPDES permit issued for a surface water impoundment designed to provide cooling water to power generators must contain a Lake Level Contingency Plan (LLCP). The LLCP contains measures to minimize adverse impacts to downstream users in the event releases must be reduced during drought conditions. The LLCP provides for the operators of Lake Anna to reduce flows from 40 cfs to 20 cfs when the lake water level drops below designated levels due to drought conditions. The LLCP stipulates that flows may not be reduced below 20 cfs and that DEQ and the downstream users (Hanover County Public Utilities, Bear Island Paper Company, Engel Farms, Inc. and the Pamunkey Indian Tribal Government) must be notified 72 hours in advance. Releases from Lake Anna may not be such that established water quality standards downstream are impaired or numeric criteria for poc's violated. DEQ requires monitoring in the North Anna River when flows are reduced below 40 cfs. Furthermore, if a downstream user identifies an adverse effect and DEQ concurs, releases must be returned to 40 cfs in 5 cfs increments.

During public comment on the LLCP, DEQ addressed the potential for reduced flows from Lake Anna to affect the Totopotomoy wastewater treatment plant's compliance with its VPDES permit. In their response to comments, DEQ stated that the wastewater treatment plant's VPDES permit and its compliance with the permitted effluent limitations should not be affected.

Although DEQ was not aware that flows from Lake Anna would be reduced when the VPDES permit was issued for the Totopotomoy wastewater treatment plant, DEQ has since stated that the limits allowed under 10-10-3 protect water quality regardless of river flow or effluent discharge rate. DEQ does not believe that these flow changes would interfere with the capacity of the waterbody to assimilate and process pollutants or to maintain State-established water quality standards.

The District Engineer has concluded that DEQ appropriately considered the effect of reduced flows from Lake Anna on the effluent limits set for the Totopotomoy wastewater treatment plant. Furthermore, the District Engineer has concluded that sufficient administrative and regulatory controls are in place to ensure that water quality standards in the Pamunkey River are met downstream of Lake Anna.

**d. Federal Agency Comments on Water Quality:** In a letter dated 25 January 2002, commenting on application 01-V2032, the FWS expressed concern for the potential degradation of water quality and cited water quality issues that they believe should be addressed by the Corps in consultation with EPA: (1) federal listing under Section 303(d) of the Clean Water Act of the Pamunkey River as an impaired water due to violations of the dissolved oxygen (DO) water quality standard, (2) reduction in minimum releases from Lake Anna, (3) potential for impacts to anadromous fish spawning and nursery habitat from possible reduction in DO, and (4) determination that there are no anthropogenic sources causing or contributing to the dissolved oxygen deficit in the Pamunkey River. The FWS recommended that the Corps require that the EPA reevaluate this project and its effects on the water quality of the Pamunkey River.

In a letter dated 4 February 2002, the Acting Director of the Office of Environmental Programs of EPA Region III EPA noted the concerns expressed in the FWS' 25 January 2002 letter and stated that "Most of these concerns appear to derive from events subsequent to the issuance of VPDES Permit No. VA0089915 for the facility." EPA suggested that the Corps work with EPA Region III and the Commonwealth of Virginia to ensure that Virginia's analysis of water quality impacts pursuant to Section 401 of the Clean Water Act considers the issues raised by the FWS letter.

The primary consideration of water quality impacts from effluent discharges has been vested by Congress with EPA. EPA has delegated this authority to the states and oversees their programs. According to the preamble to the Corps' Nationwide Permit Program implementing regulations (22 November 1991) at 33 CFR 330 regarding Nationwide Permit 7 for Outfall Structures, "It is the responsibility of EPA pursuant to Section 402 of the Clean Water Act to regulate the effluent of outfall structures. The Corps has responsibility for those activities associated with the construction of these structures." As the EPA letter was not signed by the Regional Administrator, the Corps regulations instruct the District Engineer to conclude that the effluent discharge complies with the provisions of Sections 401 and 402 of the Clean Water Act. Nevertheless, the Corps has reviewed the concerns expressed in the FWS letter and found that the State has considered and satisfactorily addressed all water quality issues in their permit reviews. In a telephone conversation on 28 March 2002, District staff informed EPA that a review of the State's analysis documented that all issues had been considered in their permit reviews and the Norfolk District would consider the State's permit issuance as conclusive. EPA indicated that they were satisfied with the District's efforts and the Regional Administrator would not advise the District of other water quality aspects to be taken into consideration.

**e. District Engineer's Findings on Water Quality:** Sections 401 and 402 of the Clean Water Act are administered by the State of Virginia. Issuance of 401 water quality certification by the State is considered conclusive in that water quality requirements have been met. DEQ advised Hanover County on 9 November 1999, that a Virginia Water Protection Permit/401 Water Quality Certification (VWPP) would not be required for application 99-V1877 provided the County received and complied with a Corps of Engineers Regional or Nationwide Permit for which DEQ has waived or issued certification. After reviewing Permit application 01-V2032, DEQ issued their VWP General Permit/401 Water Quality Certification on 20 February 2002, stating that the activity "...if conducted in accordance with the conditions set forth herein, will protect instream beneficial uses and will not violate applicable water quality standards. The board finds that the effect of the impact, together with other existing or proposed impacts to wetlands, will not cause or contribute to significant impairment of state waters or fish and wildlife resources."

Similarly, the issuance of an NPDES permit by a state is also considered conclusive. Only in the event that the Regional Administrator of the Environmental Protection Agency advises the Corps there are unresolved water quality issues under either Section 401 or 402, would the Corps conclude otherwise. The Corps' regulations at 33 CFR 320.4 (d) state: "Certification of compliance with applicable effluent limitations and water quality standards required under provisions of Section 401 of the Clean Water Act will be considered conclusive with respect to water quality considerations unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other water quality aspects to be taken into consideration." As discussed above, EPA's review of Hanover County's VPDES permit coincided with their review and intent to include the tidal portions of the Pamunkey River on the 303(d) list. Given the fact that DEQ issued the VPDES permit and the EPA Regional Administrator has not otherwise advised the Corps that the permit is invalid, regulations instruct the District Engineer to

conclude that the effluent discharge complies with the provisions of Sections 401 and 402 of the Clean Water Act.

As outlined above, the Virginia DEQ, as the permitting authority, has determined that the 10-10-3 restrictions will ensure compliance with numeric criteria established for the designated beneficial use of this section of the Pamunkey River. DEQ's reliance on 10-10-3 is the result of considerable experience in its application of modeling technology for small streams. These same effluent limits have been included in the permit conditions and reviewed by EPA. After reviewing the evidence and analytical results submitted by Hanover County, DEQ, the Virginia Department of Game and Inland Fisheries (VDGIF), VIMS and by the public, the District Engineer has concluded that all questions concerning effluent limits, DO and effects on aquatic life have been satisfactorily addressed. There is no reasonable evidence to conclude that impacts to water quality would be more than minimal.

Therefore, the District Engineer has confirmed that the State agencies have considered and satisfactorily addressed all water quality issues in their permit reviews. DEQ has issued a VPDES permit with limits that will be fully protective of water quality in the Pamunkey River regardless of river flow or effluent discharge rate. EPA's Regional Administrator has not advised the Corps that either the VPDES permit or the VWPP/401 Water Quality Certification is invalid, therefore, the District Engineer accepts as conclusive that the effluent discharge complies with the provisions of the Clean Water Act.

## **9. Anadromous Fish:**

**a. VPDES Permit Review:** In a letter to DEQ dated 4 February 1999, the Virginia Department of Game and Inland Fisheries (VDGIF) indicated that since spawning and nursery areas of anadromous fishes such as striped bass, river herring and American shad have been documented at the project site, they supported dissolved oxygen monitoring to prevent adverse impacts to these species. Also, because chlorine can act as a chemical barrier to anadromous fish migrations, VDGIF indicated in the 4 February 1999 letter that they supported Hanover County's use of ultraviolet disinfection to reduce impacts to aquatic biota.

DEQ's VPDES permit, issued on 28 April 1999, specifies effluent limitations, requires water quality monitoring of the effluent for cBOD5, suspended solids, TKN, total phosphorous, total nitrogen, fecal coliform, pH and dissolved oxygen; and requires biological toxicity monitoring of the effluent. In a letter to the U. S. Fish and Wildlife Service dated 27 April 1999 concerning potential impacts to endangered species, DEQ stated: "The high degree of treatment required by the permit, the use of an effluent diffuser, the conservative assumptions made in the effluent mixing analysis and the use of UV light rather than chlorine for effluent disinfection all combine to make it highly unlikely for the discharge to have an impact should any endangered species exist in this reach of the Pamunkey River."

Because the Pamunkey River is already experiencing naturally occurring dips in dissolved oxygen, the VPDES permit holds Hanover County to a higher standard for the discharge than would normally be permitted. The usual minimum dissolved oxygen level of 5.0 mg/l has been increased to 6.5 mg/l for the Totopotomoy wastewater treatment plant effluent outfall in order to ensure the protection of fish and wildlife resources. In a letter dated 13 October 2000, DEQ responded to comments from VIMS regarding water quality concerns. DEQ stated that limits similar to those in the VPDES permit "...have resulted in impacts in the receiving stream that are generally very difficult or impossible to distinguish by routine monitoring." DEQ further stated "Given that there is approximately 4:1 dilution available for the effluent, it is unlikely that the permitted limits will result in elevating the cBOD5 concentration in the river by more than about 2 mg/l beyond that naturally occurring." DEQ stated their belief that "...the

stream will be able to assimilate the additional concentration without any significant lowering of the existing quality.”

In a letter dated 20 October 2000 to VMRC, DEQ responded to comments in a 17 October 2000 letter from Dr. Paul Jacobson concerning potential effects of the sewage outfall from the Totopotomoy treatment plant on anadromous fish in the Pamunkey River. DEQ stated the following: “Dr. Jacobson is correct that our agency is considering a permit modification that would allow Virginia Power to reduce minimum release flow from 40 cfs to as low as 20 cfs under severe drought conditions. However, the proposal under consideration includes a provision that would require the 40 cfs minimum release flow to be restored if any adverse effects are reported downstream. In the event of such a flow reduction from Lake Anna, the affected dischargers and DEQ staff would closely monitor conditions in the river. While we think that the 10-10-3 limits will be protective of water quality even under the reduced conditions, we would take appropriate steps to restore flow if significant dissolved oxygen reductions or other water quality problems are noticed.”

The District Engineer has concluded that in issuing their VPDES permit, DEQ considered all applicable chemical, physical and biological measures to reduce impacts of the discharge to anadromous fish and other aquatic biota in the Pamunkey River.

**b. VMRC Permit Review:** VMRC advised Hanover County in a letter dated 27 October 2000, that their decision on the County’s request to install a wastewater diffuser structure in the Pamunkey River had been deferred from the 29 August 2000 meeting so that the Commission staff could meet with representatives of DEQ and VIMS to further evaluate any water quality impacts the project might have on fishery resources. Their attached memo entitled “Habitat Management Division Evaluation” stated that Commission staff met with DEQ and VIMS representatives on 19 September 2000. In a Shoreline Permit Application Report dated 16 August 2000, VIMS recommended that construction of the outfall diffuser be avoided from mid-March through June to minimize adverse impacts on anadromous fish. VIMS provided further comments to VMRC on impacts to anadromous fish in a letter dated 11 October 2000. VIMS commented on the potential for adverse effects in the Pamunkey River downstream of the proposed discharge and concluded, “Through our review of the environmental situation surrounding this project, which took into account the permitted effluent limits and discharges, we determined that the probability of occurrence of a DO sag event sufficient to adversely impact anadromous fish is low.” ...and... “Our extended analysis has confirmed that the daily flows and effluent limits proposed for this treatment plant have a low probability of adversely affecting anadromous fish resources in the Pamunkey River. Future growth and growth patterns may change this conclusion but are beyond the scope of the present analysis.” In their memo, VMRC stated: “Based on the VIMS assessment and the discharge permit limits established by DEQ, staff anticipates no adverse effects on fishery resources in the Pamunkey River from the project as currently proposed.”

The Commission considered all documents in the official record, including agency comments and evidence provided by the County and protestants and voted at their regularly scheduled meeting on 24 October 2000 to approve the project contingent on the following conditions: 1) all areas of state-owned bottom and adjacent lands disturbed by the construction be restored to their original contours and natural conditions within 30 days of the date of completion of the work, 2) all excess materials shall be removed to an upland site and contained to prevent reentry into state waters, and 3) no work shall occur involving state-owned submerged lands during the period 15 March through 30 June in order to protect anadromous spawning species. The Virginia Marine Resources Commission permit, including these three special conditions, was issued on 18 December 2000.

The District Engineer has determined that in issuing their permit, VMRC considered all comments concerning potential adverse effects of the installation of the outfall to anadromous fish and addressed concerns for their protection in the special conditions of the VMRC permit.

**c. Corps Permit Review:** Potential adverse effects to anadromous fish were considered by the Corps and addressed in the special conditions of the District's original verification of compliance with Nationwide Permit 7. In a memo dated 15 February 2000, the Norfolk District requested comments and recommendations on construction methods for the proposed outfall structure from the National Marine Fisheries Service. In their 31 August 2000 comments on application 00-V1332 for the Totopotomoy interceptor, the NMFS indicated that anadromous fish have been collected in the proximity of the outfall site on the Pamunkey River and that the river is documented spawning and nursery habitat for alewife, striped bass, white perch, and yellow perch. The NMFS recommended that the permit be conditioned so that in-stream work is prohibited from 15 February through 30 June, that stream bottom contours be restored to their original elevation to prevent the creation of blockages, and that excavated material stored on site be stabilized and contained to prevent sedimentation during storm events. Accordingly, in a letter dated 3 October 2000, the Norfolk District modified the Nationwide Permit authorization to include a special condition prohibiting construction of the outfall structure from 15 February through 30 June of any year in order to protect spawning and nursery habitat for anadromous fish. The time-of-year restriction imposed by the Corps begins one month earlier than that imposed by VMRC. The permittee must abide by the most restrictive permit conditions. The NMFS did not respond to the Corps public notice for application 01-V2032.

In their 25 January 2002 comments on Public Notice 01-V2032, the FWS stated that the Pamunkey River provides spawning and nursery habitat for numerous anadromous fish. Instream dissolved oxygen levels, which can be exacerbated during low flow conditions, are critical to these species' reproduction success. A dissolved oxygen level of 5 milligrams per liter (mg/l) has been generally accepted as necessary to the survival of anadromous fish eggs, larvae and juveniles. The State-established standard for dissolved oxygen limits has been set at 5.0 mg/l for this portion of the Pamunkey River primarily for the protection of aquatic life. However, because the Pamunkey River is already experiencing naturally occurring dips in dissolved oxygen, DEQ has increased the required level to 6.5 mg/l for the Totopotomoy wastewater treatment plant effluent outfall in order to ensure the protection of fish and wildlife resources.

The District Engineer has determined that potential adverse effects to anadromous fish have been adequately considered and addressed in the state and federal reviews of the permit applications for the proposed discharge outfall on the Pamunkey River. A time of year restriction prohibiting construction of the outfall structure from 15 February through 30 June of any year would be included as a special condition of any permit issued on this project. While there is some potential for minor impact, the various protective conditions included in the necessary permits should minimize any such impact. Although impacts to fish and wildlife resources is a Corps Public Interest Review consideration, primary consideration of water quality impacts from effluent discharges is vested by Congress with EPA, as delegated to the states.

## **10. Socioeconomics:**

**a. Native Americans:** A letter dated 6 August 2000 was received from the Chief William P. Miles of the Pamunkey Tribe asking for information on the proposed Totopotomoy wastewater treatment plant and expressing concern that there had been no public hearings or environmental impact study on the project. The Norfolk District responded on 18 September 2000, describing the project components and their minimal environment impacts and advising Chief Miles that the Corps had previously authorized

the project under Nationwide Permits 7, 12 and 26. Chief Miles was informed that Nationwide Permits are a class of General Permits developed by the Corps of Engineers for projects that have been determined to result in minimal impacts on the aquatic environment. For all such General Permits, the assessment of environmental impacts and the opportunity for public comment had been completed when the Nationwide Permits themselves were developed by Corps Headquarters.

The Virginia Council on Indians wrote on 18 January 2001 expressing their opposition to Hanover County's proposed Totopotomoy wastewater treatment plant and Pamunkey River discharge. The letter stated: "Based on the information that has been presented to the Virginia Council on Indians, we do not believe the Pamunkey River can sustain the impact of the project and Hanover County may have overstated its need for this wastewater treatment plant." The Virginia Council on Indians stated that as the "original caretakers of the land" they consider it necessary for them to comment on "...any project that might have possible adverse affects on the environment and the surrounding communities."

In a letter dated 22 January 2002, Chief William P. Miles of the Pamunkey Tribe again commented on the project. He stated the importance of the American shad as sustenance and income for his people and described the Tribe's hatchery operation and efforts to increase shad populations. He stated his belief that "...the proposed discharge of wastewater into the Pamunkey River will only have a detrimental effect on Pamunkey River shad populations and our shad hatchery operations." He cited the significant reduction of Pamunkey River flows associated with recent Virginia General Assembly legislation as resulting in a reduced ability of the river to absorb wastewater discharges during periods of drought. He said that the aboriginal rights of the tribe to maintain their culture should be considered in any action affecting the Pamunkey River.

The Pamunkey Tribe operates a shad hatchery on the Pamunkey River approximately 20 river miles downstream of the proposed discharge outfall location. The Tribe has worked for many years in cooperation with the Chesapeake Bay Program, VDGIF and VMRC to provide shad from their hatchery for the State's bay-wide shad restoration effort. It is highly unlikely that State agencies would authorize any action that would adversely affect the State's own shad restoration program. In fact, during their permit review for the discharge outfall, VMRC deferred their decision to allow further consultation and evaluation of any water quality impacts that the project might have on fishery resources.

The VIMS review concluded that the proposed daily flows and effluent limits for the treatment plant would have a low probability of adversely affecting anadromous fish resources in the Pamunkey River. In their evaluation of VPDES VA0089915 permit for Hanover County, DEQ concluded that with the approximately 4:1 dilution available for the effluent, "...it is unlikely that the permitted limits will result in elevating the cBOD5 concentration in the river by more than about 2 mg/l beyond that naturally occurring." DEQ stated their belief that "...the stream will be able to assimilate the additional concentration without any significant lowering of the existing quality." The usual dissolved oxygen level of 5.0 mg/l has been increased to 6.5 mg/l for the Totopotomoy wastewater treatment plant effluent outfall in order to ensure the protection of fish and wildlife resources. DEQ determined that the discharge would not decrease dissolved oxygen in the Pamunkey River and would not affect anadromous fish habitat or spawning. Furthermore, ultraviolet light will be employed instead of chlorine for effluent disinfection to avoid a chemical barrier to fish migration; restoration of pre-construction contours is required to eliminate any physical barriers to movement of fish; and time of year restrictions for in-stream construction work are required by the VMRC permit to protect anadromous fish spawning habitat. Any Corps permit issued on this project will also include as a special condition a time of year restriction prohibiting construction of the outfall structure from 15 February through 30 June of any year.

In issuing VPDES permit VA0052451 for the Virginia Power-North Anna Nuclear Power Station, DEQ included a Lake Level Contingency Plan "...to allow specific reductions in the lake discharge flow when the lake water level drops below designated levels due to drought conditions, taking into account and minimizing any adverse effects of any release reduction requirement on downstream users." This requires that the Pamunkey Indian Tribal Government, and other downstream users, be given at least 72 hours notice by Virginia Power prior to the initiation of flow reductions. If an adverse effect is found from the flow reductions, the flow will be increased in 5 cfs increments until the flow reaches 40 cfs or until the adverse effect has been eliminated.

Therefore, the District Engineer has determined that potential adverse effects to anadromous fish have been considered and addressed in both the State and federal reviews of this project. All necessary requirements and conditions have been incorporated in order to protect fish and wildlife resources. The issuance of a permit for this project should not adversely affect the Pamunkey Indian Tribe's ability to operate their shad hatchery or to maintain their culture.

**b. Residents of Hanover County:** If constructed, the project would potentially provide a small number of permanent jobs for local residents as well as temporary employment opportunities during the construction phase. Construction activities should generate revenue for local contractors and building supply companies. Construction of the project as a public works effort will come at a cost to the local taxpayers. Hanover County has indicated that between 50 to 75 construction workers (contractor employees and subcontractors) have been laid off as a result of the court-ordered shut down of their originally permitted construction. The County estimates that the cost of about \$200,000 per month associated with the shut down will be passed on to utility customers of Hanover County. While the costs to the applicant (and the taxpayers) of not proceeding with the work are real, these costs and the fact that some of the work has already begun did not prejudice the District Engineer's evaluation of the project.

The economic impact of certain categories of activities with minimal individual and cumulative adverse effects on the environment was addressed when the Nationwide Permits were developed by Corps Headquarters. Therefore, such public interest factors as economic impact are not normally considered in the review of a project that meets the terms and conditions of Nationwide Permits.

## **11. Cumulative Impacts:**

**a. Past Projects:** From a review of the Norfolk District's permits database of permits issued for projects in the Pamunkey River, Totopotomoy Creek and Beaverdam Creek in Hanover County over the past five years, it appears that a total of 8.88 acres of wetland impacts were permitted in this region. Mitigation required for these impacts was 6.09 acres, resulting in a net loss of 2.79 acres of wetlands. This net loss of wetlands resulted largely from projects that qualified for authorization under categories of Nationwide Permits for which compensation is not required. The cumulative impacts of these past project have been determined to be minimal.

### **b. Current Projects:**

**(1) Belle Creek Development:** The Belle Creek development on Academy Creek (pending application 01-V2172 submitted by The Hanover Group in December 2001) is a multi-use development that would utilize a portion of the Totopotomoy interceptor alignment. The developer anticipates having houses constructed and occupied by the fall of 2002.

The sewer line serving the Bell Creek development would consist of approximately 9,700 linear feet of pipeline from the development to the existing Shelton Point pump station that currently pumps to a trunk sewer and then to Henrico County for treatment. However, sewage from the Bell Creek development will eventually be pumped to Hanover County's proposed Totopotomoy wastewater treatment plant, if it is approved and constructed. An estimated 7,500 feet of 12 to 24-inch sewer line would be constructed along Academy Creek and approximately 2,200 feet of 30-inch sewer line would be constructed along the same or nearly the same alignment that the Totopotomoy interceptor would have followed. The current application proposes a permanent loss of 2.09 acres of wetlands and temporary impacts to 3.37 acres of wetlands. The Hanover Group proposes to contribute to the Virginia Wetlands Restoration Trust Fund on a 1 to 1 basis and to preserve 23.8 acres of uplands, wetlands and waters of the U. S. as compensatory mitigation for the permanent wetland impacts. The review of this project and its impacts has not yet been completed.

While this portion of the Bell Creek sewer line is proposed to occupy the original sewer easement obtained by Hanover County for the Totopotomoy interceptor, the Bell Creek sewer line will be a 30-inch line capable of carrying approximately 4.8 mgd of flow. The Totopotomoy interceptor would have been a 42-inch line with a flow capacity of 12 mgd. The Bell Creek sewer line is sized to serve the Hanover Group's development and would not serve the same function as the originally proposed Totopotomoy interceptor.

In a letter dated 1 February 2002, the Hanover County Department of Public Utilities stated that the proffers to the County for the Bell Creek development project provide that if the County does not build the Totopotomoy interceptor, the developer would build a sewer from Academy Creek to the Shelton Pointe pump station. The County's standard practice is to pay for part of the construction in accordance with their November 2000 development agreement and the County's oversizing policy. Hanover County has stated that they have no plans to construct any portion of the Totopotomoy interceptor and are not aware of any other current project that would require the construction of any portion of it.

**(2) Beaverdam Creek Forcemain:** The Beaverdam Creek Forcemain (pending application 00-V0106 submitted by Hanover County) is a proposed 3.3-mile sanitary sewer forcemain extending from the existing Beaverdam Creek pump station in Hanover County to the existing Strawberry Hill pump station in Henrico County. The force main would be installed by trenching and backfilling except for the Chickahominy River crossing which would be accomplished by directional drilling. The currently submitted application indicates that 12.2 acre of wetlands adjacent to the Chickahominy River would be impacted by conversion and temporary access impacts. The application is currently inactive while Hanover County works on a redesign to reduce the wetland impacts and effects on historic resources. This section of forcemain would be needed with or without the County's proposed Totopotomoy wastewater treatment plant. However, if the wastewater treatment plant comes on line first, construction of the new forcemain would be postponed.

Although the actual net loss or gain in wetlands is unknown at this time, it is anticipated that through avoidance, minimization and mitigation, the cumulative impacts of these currently proposed activities should be minimal.

### **c. Reasonably Foreseeable Projects:**

**(1) Totopotomoy Interceptor:** The Totopotomoy interceptor extension was originally proposed to provide initial flow to the Totopotomoy wastewater treatment plant from the existing pump station No. 5 to offload wastewater being sent to Henrico County and to provide enough flow to

economically operate the wastewater treatment plant. The Lee Davis pump station will serve a portion of the Beaverdam Creek basin rather than the Totopotomoy Creek basin that would have been served by the Totopotomoy interceptor. However, the Lee Davis pump station will provide initial wastewater flow to the treatment plant in quantities nearly comparable to the Totopotomoy interceptor. The reduction in the flow being sent to Henrico County by the construction of the Lee Davis force main will allow for the continued transfer to Henrico County of sewage flow collected in the Totopotomoy Creek basin. The Lee Davis pump station will therefore allow Hanover County to remain within its contractual limits of 5.4 mgd of treatment capacity with Henrico County for an additional 7 to 10 years with the anticipated 3 to 4% growth. Hanover County has stated that when warranted by development, additional flow from the existing Shelton Pointe pump station would be diverted via the proposed 16-inch pipe from Henrico County to the proposed treatment plant through the proposed Lee Davis Pump station. Later, when warranted, the replacement of the proposed 16-inch pipe with a 20 to 24-inch pipe would provide additional capacity for the Totopotomoy service area well beyond the anticipated 10-year period. This alternative would eliminate the need for the originally proposed Totopotomoy interceptor.

Hanover County formally withdrew their permit application for DOA permit 00-V1332 for the Totopotomoy interceptor on 16 November 2001. The County also withdrew their permit application for the Totopotomoy interceptor from the Virginia Department of Environmental Quality on November 19, 2001. On November 28, 2001, the Board of Supervisors removed the Totopotomoy interceptor from the County's Capital Improvement Plan (CIP) and replaced it with the Lee Davis Road pump station and forcemain. Therefore, the Totopotomoy interceptor no longer exists as a County funded project. Although the County does not claim that some portion of the interceptor will never be built in the future, they have stated that they have no intention of constructing the Totopotomoy interceptor as it was presented to the Corps. The County's recent and more detailed evaluation does not justify spending \$7 million for a new interceptor when much less expensive options are available to satisfy the County's needs for the next 7 to 10 years and which can be phased in as needed. Therefore, the District Engineer has concluded that the Totopotomoy interceptor in its entirety is not a reasonably foreseeable future impact.

**(2) Comprehensive Plan:** Hanover County's 1 February 2002 letter from the Department of Public Utilities Director stated: "As we have represented to the Corps of Engineers since the initial preapplication meeting for our previous projects in July 1999, a sewer may never be required between Rural Point Road and the WWTP along Totopotomoy Creek, an area outside of the Suburban Service Area. Sewage can be pumped from the Shelton Pointe Pump Station or another station to either Henrico County or to the new WWTP, if it is permitted and constructed. The County is currently in the process of updating the Comprehensive Plan and a series of public meetings were conducted just this week. As part of this update process, I will be recommending that the section of the sewer line shown in the Comprehensive Plan outside of the Suburban Service Area along Totopotomoy Creek be eliminated. Please note that a change to Comprehensive Plan involves multiple public hearings, review by the Planning Commission, and then a recommendation by the Planning Commission is provided to the Board of Supervisors for action. In terms of the CIP, I will be recommending improvements to facilities in the Lower Totopotomoy Creek Basin within the Suburban Service Area on an as needed basis and in response to the actual development that occurs. This is just as I would do in any other part of the Suburban Service Area." Based on the County's intention to eliminate the section of sewer line outside of the Suburban Service Area along Totopotomoy Creek between Rural Point Road and the Totopotomoy treatment plant from their Comprehensive Plan, the District Engineer has determined that this section of sewer line is not a reasonably foreseeable project.

**(3) Easements Outside the Suburban Service Area:** While many of the easements required for the Totopotomoy interceptor have been purchased, a continuous corridor has not been obtained and the County is not making any further efforts to obtain additional easements outside of the Suburban Service Area. No easements were condemned for the Totopotomoy interceptor and the County's plans to begin condemnation proceedings for the outstanding easements were halted when the decision was made to cancel the project. The Hanover County Department of Public Utilities Director stated in a letter dated 1 February 2002 that, "I see no reason for the County to keep the easements it obtained between Rural Point Road and the WWTP. It is not possible for the County to demand that property owners return the funds that they were paid in return for having these easements vacated. I also do not believe it is appropriate for the County to vacate these easements without the return of the funds paid. At this time, I will represent to the Corps of Engineers that if any owner of property located outside of the Suburban Service Area were to agree to return the funds that they were paid for an easement that I would recommend to the Board of Supervisors that the easement be vacated. Vacating easements requires both a public hearing and approval by the Board of Supervisors. I obviously cannot promise that the easements would be vacated at this time but it would be my recommendation to do so under the conditions outlined above."

The District Engineer has determined that the County's willingness to vacate the easements they have obtained outside of the Suburban Service Area is further evidence that the section of sewer line between Rural Point Road and the Totopotomoy treatment plant will be eliminated from their Comprehensive Plan.

**(4) Influent Pump Station:** In that same letter, the Director further stated: "...the influent pump station (IPS) was included in the County's application because of the unusual situation we found ourselves in. We were far into construction on the WWTP project, discharge force main and discharge diffuser when work was stopped. All wetlands that were to be taken at the WWTP site had been physically taken and no longer existed. Work on the IPS began early in the project and this facility was partially constructed when construction was halted by Court order. The IPS served multiple functions including pumping wastewater from the Totopotomoy Creek Interceptor up to the WWTP; collecting and pumping plant process water; and collecting, grinding and pumping septage delivered to the WWTP by septage hauling contractors. The Lee Davis Road Wastewater Pump Station and Force Main, which replaces the Totopotomoy Creek Interceptor, could discharge to either the IPS or directly to the WWTP screening facilities and each discharge point has its advantages and disadvantages. At this point it appears it will be more cost effective to have the Lee Davis Road facilities discharge directly to the WWTP screening facilities therefore the IPS is no longer needed to pump wastewater to the WWTP. This means the IPS would only be used to handle the plant process water and septage processing functions which means that facility, as originally designed, would be under utilized. As Mr. Herzog informed you, the County was having an analysis performed to determine whether it made more sense to abandon the IPS and construct a new, smaller station or to complete the IPS and let it serve this more limited function. The County has completed its analysis and has decided to halt any additional IPS construction and we are proposing to abandon it. As is standard practice within the County, we will remove all improvements to 4 feet below the ground surface and fill the IPS with soil material, grade and seed."

Based on the County's plans to abandon the influent pump station, the District Engineer has determined that the influent pump station is no longer a component of the currently proposed Totopotomoy wastewater treatment plant. A special condition requiring the removal of any existing structures associated with the influent pump station to 4 feet below the ground surface will be included in any Corps authorization for this project.

**(5) Other Options to Handle Sewage in the Future:** The County presently anticipates much less development (with less demand for sewer service) along the originally proposed Totopotomoy interceptor route than was expected when it was originally included in the Comprehensive Plan. Large tracts of land have been designated as historic preservation districts (Totomoi Historic District and Rural Plains Historic District), and the County's hopes to attract a chip plant to locate within the County did not materialize. Hanover County has outlined a number of future options for handling sewage within the County that do not involve the construction of the Totopotomoy interceptor. The County anticipates that the existing Avondale Pump Station, Berkeley Forest Pump Station, Royal Glen Pump Station and Pump Station No. 5, (all of which currently send flow to Henrico County and are expected to continue to do so for the next 7 to 10 years) would continue to serve their respective areas of the County. Upgrades of the Avondale and Number 5 pump stations to allow for additional flow, if needed, would involve larger pumps and possibly a new force main along Route 301 in the existing easement. The County also indicated that a new pump station and forcemain for the Powhite Creek basin is proposed to come on line around 2007 to serve the Powhite Creek area. Sewage from this area would initially be pumped to Henrico County. By 2014, Hanover County expects to again be reaching their contractual capacity of 5.4 mgd with Henrico County and plans to construct a larger pump station so that sewage could be pumped to the new Totopotomoy wastewater treatment plant (if permitted.) The exact location of the Powhite Creek pump station and forcemain have not been identified, therefore, the extent to which the project would be within the Corps' jurisdiction cannot be determined at this time. However, pumping rather than relying on gravity flow to transport sewage should reduce the impacts on wetlands and waters of the U. S.

The County anticipates that the initial 5 mgd capacity of the Totopotomoy wastewater treatment plant will handle sewage flows until about 2012. The first expansion of the Totopotomoy treatment plant's capacity to 10 mgd would handle flows until 2027. Impacts beyond 2027 are not reasonably foreseeable, however, Hanover County's long range planning indicates that expansion to a 20-mgd capacity would accommodate the County's needs through 2047. The need for the entire designed 30-mgd capacity would occur at build-out of the Suburban Service Area, which is expected around 2060. The footprint of the treatment plant has been aligned so that none of the future expansions would involve wetland impacts.

The District Engineer has determined that Hanover County has fully disclosed all of the activities that are reasonably related to the project presently before the Corps. Based on Hanover County's plans to abandon the influent pump station, to eliminate the section of the sewer line shown in the Comprehensive Plan outside of the Suburban Service Area along Totopotomoy Creek, and to voluntarily vacate the easements the County has obtained between Rural Point Road and the Totopotomoy wastewater treatment plant, if requested, the County has demonstrated to the satisfaction of the District Engineer that they have no plans to construct the Totopotomoy interceptor in the reasonably foreseeable future. Furthermore, the County has identified a number of feasible future alternatives for handling sewage within the County in lieu of constructing the Totopotomoy interceptor. Future pump station construction, treatment plant and pump station upgrades and the currently proposed construction of a sewer line by others along a portion of the originally proposed Totopotomoy interceptor alignment would be considered as cumulative impacts of the project that would occur within 7 to 10 years. However, the project that is currently before the Corps has been determined to have independent utility from these other projects and is therefore treated as a single and complete project. The County has clearly demonstrated through its actions that the Totopotomoy interceptor is neither a necessary adjunct to the wastewater treatment plant, nor is it any longer the County's preferred alternative.

Some of the future activities in the vicinity of this project are likely to result in wetland impacts, although the specific acreages of impact cannot presently be defined. However, it is anticipated that through avoidance, minimization and mitigation, the cumulative impacts of these reasonably foreseeable future activities should be minimal. Because the wetland impacts of this project will be more than offset by compensatory mitigation, the proposed outfall structure, Lee Davis pump station and the Totopotomoy wastewater treatment plant will not contribute cumulatively to the loss of wetlands. The District Engineer has also determined that the cumulative wetland impacts of this project, when taken into consideration with past, current, and reasonably foreseeable future activities, should likewise be minimal.

**12. Coordination with State and Federal Resource Agencies:** The various components of the project were coordinated with applicable State and federal resource agencies as a joint site visit candidate for pre-application 99-R0875 for the Totopotomoy interceptor, Totopotomoy wastewater treatment plant, five wetland crossings of the forcemain, and the outfall structure on the Pamunkey River; and permit application 99-V1877 for the Totopotomoy wastewater treatment plant, three wetland crossings of the forcemain, and the outfall structure on the Pamunkey River; and by two separate public notices for permit applications 00-V1332 for the proposed Totopotomoy interceptor alone and 01-V2032 for the currently proposed wastewater treatment plant, the outfall structure on the Pamunkey River and the Lee Davis pump station.

In order to fully evaluate certain public interest factors, official correspondence and reports were reviewed from the prior administrative record for the above listed previous actions. Also, the applicant forwarded to the Norfolk District copies of other previous official agency correspondence which they had received but had not submitted for the prior administrative record. Most, but not all, applicable state and federal agencies submitted separate comment letters on application 01-V2032. Correspondence from the following agencies were reviewed and considered in the evaluation of permit application 01-V2032:

**a. Virginia Department of Environmental Quality (DEQ):**

**(1) Virginia Water Protection Permit (VWPP):** In a letter dated 9 November 1999 concerning application 99-1877 to construct the forcemain and discharge outfall in the Pamunkey River, DEQ advised Hanover County that the water quality impacts of the proposed project should be minimal and temporary in nature and determined that a Virginia Water Protection Permit/401 Water Quality Certification (VWPP) would not be required provided the County received and complied with a Corps of Engineers Regional or Nationwide Permit for which DEQ has waived or issued certification.

In a letter dated 28 December, 2001, DEQ advised Hanover County's environmental consultant that project 01-2032 qualified for authorization under the Virginia Water Protection General Permit WP2, pending submission of the permit application fee.

In a telephone conversation with the District on 29 January 2002, DEQ indicated that they had drafted a general permit for this project (WP2 for utility projects) which they intended to issue by 26 February 2002. Their decision to issue a general permit was based on the fact that the impacts are minimal and that the VPDES and VMRC permits have been issued. DEQ indicated that they did not intend to provide comments on the Public Notice for 01-V2032.

On 20 February 2002, DEQ issued their VWP General Permit for this project stating that the activity "...if conducted in accordance with the conditions set forth herein, will protect instream beneficial uses and will not violate applicable water quality standards. The board finds that the effect of the impact,

together with other existing or proposed impacts to wetlands, will not cause or contribute to significant impairment of state waters or fish and wildlife resources.”

**(2) Virginia Pollutant Discharge Elimination System Permit (VPDES):** VPDES permit (VA0089915) was issued on 28 April 1999 by the State Water Control Board for both 5 mgd and 10 mgd discharge from the treatment plant. The VPDES permit specifies effluent limitations; requires water quality monitoring of the effluent itself for cBOD5, suspended solids, TKN, total phosphorous, total nitrogen, fecal coliform, pH and dissolved oxygen; and requires biological toxicity monitoring of the effluent. The VPDES permit also requires annual in-stream quantitative monitoring of benthic macroinvertebrates in the Pamunkey River.

In a letter dated 21 June 2000, DEQ advised Hanover County that their plans and specifications for the Totopotomoy wastewater treatment plant had been conditionally approved by DEQ and that the Virginia Department of Health had recommended conditional approval by letter dated 3 April 2000. In a letter dated 18 January 2001, the Water Permits Manager of the DEQ Piedmont Regional Office advised Hanover County that the Director of the Department of Environmental Quality had approved the plans for the Totopotomoy wastewater treatment plant, outfall forcemain and discharge structure and that the letter constitutes their Certificate to Construct.

On 29 January 2002, the Corps’s project manager spoke with the DEQ Piedmont Regional Office Director to discuss the VPDES permit and comments on Corps’ Public Notice 01-V2032. DEQ stated that they had issued the VPDES permit as they had determined that the project would not be a threat to water quality, and that DEQ did not intend to comment on the Corps’ Public Notice. DEQ stated that the portion of the Pamunkey River at the discharge outfall was un-modelable because of tidal influence and that in such cases, DEQ policy requires the most stringent effluent limits that are self-sustaining.

DEQ informed the District that problems with dissolved oxygen in portions of the Pamunkey River are most likely due to naturally occurring inflow from swamps that drain into the river. They indicated that the VPDES permit review included consideration of the maximum discharge, but that discharge volume does not matter since the 10-10-3 limits set for tertiary treatment performance must be met. (The Health Department approves the technology to achieve the performance.) The VPDES permit requires water quality monitoring and monthly reporting of the discharge at the end of the pipe. If the standards are not met, enforcement action is taken. The Piedmont DEQ Office indicated that it is not routine for DEQ to require downstream water quality monitoring. DEQ requires water quality monitoring of the discharge rather than the river itself since they would not be sure whether the discharge, naturally occurring conditions, or other anthropogenic disturbances were responsible for individual dips in dissolved oxygen in the river, whereas they are able to monitor and enforce what comes out of the discharge pipe. The VPDES permit does include river monitoring of macroinvertebrates near the effluent.

DEQ stated that the issue of a 20 cfs release versus a 40 cfs release from Lake Anna would not change their determination. Water quality monitoring is required at a gage at the Route 30 Bridge, and if a problem is found there, the State can require the release to be increased. DEQ’s evaluation of the impacts to fish and wildlife resources is based on State-wide water quality standards set by the State with input from all State agencies. DEQ determined that the discharge would not decrease dissolved oxygen in the Pamunkey River and would not affect anadromous fish habitat or spawning, and with the conditions imposed, would not be in violation of the State’s water quality standards. DEQ stated that although the VPDES permit has been challenged in court, the challenges have not been successful and the permit is still valid.

DEQ indicated that at the time the VPDES permit was issued, they were not aware that flows from Lake Anna would be reduced by 50 percent during times of drought. However, DEQ stated that the reduced flows would not make any difference to water quality since DEQ considers the 10-10-3 water quality restriction (10 mg/l cBOD, 10 mg/l TSS, 3 mg/l TKN) to be self-sustaining. The limits allowed under 10-10-3 protect water quality regardless of river flow and do not interfere with the capacity of the waterbody to assimilate and process pollutants. DEQ further stated that regardless of the effluent discharge rate, the 10-10-3 restriction would maintain State-established water quality standards.

**b. Virginia Marine Resources Commission (VMRC):** Permit 99-1877 (same as Corps permit application 99-V1877) to install a treated wastewater diffuser structure in the Pamunkey River was issued by the Virginia Marine Resources Commission on 18 December 2000. Special conditions of the permit included: 1) all areas of state-owned bottom and adjacent lands disturbed by the construction be restored to their original contours and natural conditions within 30 days for the date of completion of the work, 2) all excess materials shall be removed to an upland site and contained to prevent reentry into state waters, and 3) no work shall occur involving state-owned submerged lands during the period 15 March through 30 June in order to protect anadromous spawning species.

On 30 January 2002, the Corps project manager spoke to VMRC regarding their lack of comments on Public Notice 01-V2032 for this project. VMRC indicated that they had written a letter to Hanover County on 11 December 2001 with a copy to the Corps. As the Corps had not yet received a copy, VMRC agreed to send it by FAX. VMRC indicated that they had approved the discharge diffuser structure and no additional action was required on that portion of the project. VMRC stated that the remainder of the project did not fall within areas in VMRC's jurisdiction and would not require authorization from them. VMRC's 11 December 2001 letter commenting on permit application 01-2032 for the Totopotomoy wastewater treatment plant, forcemain, discharge diffuser, and the Lee Davis Road pump station stated that the discharge diffuser portion of the project was approved by the Commission under permit 99-1877 on 24 October 2000 (permit issued on 18 December 2000) and that no additional action is required from VMRC. The letter stated that the remaining impacts are in areas over which VMRC is not currently exerting jurisdiction, therefore, no additional authorization from VMRC is required.

**c. Virginia Department of Historic Resources (VDHR):** In a letter dated 7 June 2000, the Virginia Department of Historic Resources (VDHR) concurred with the Corps' finding of no adverse effect for project number 99-V1877 for the Totopotomoy wastewater treatment plant, forcemain and outfall discharge structure (VDHR File No, 98-0066).

In a letter dated 31 January 2002, VDHR indicated that their initial finding of no adverse effect, conditioned on coordination of any design changes, is still valid for the sewer line, Totopotomoy wastewater treatment plant and outfall, and is also valid for the Lee Davis pump station. VDHR added a condition to the no adverse effect as follows: "The Corps will coordinate with the DHR regarding the potential development of a multi-project wetlands mitigation site at the wastewater treatment plant site." VDHR advised that since burials have been encountered elsewhere in the project area and the possibility of additional burials also exists within the present project boundaries, their office should be notified immediately if human remains are discovered during project implementation.

**d. Virginia Department of Health:** In a letter dated 4 April 2000, the Virginia Department of Health (VDH) commented to DEQ concerning Hanover County's plans for the Totopotomoy wastewater treatment plant. The letter advised that the plans and specifications are technically adequate and are recommended for approval by the Health Department with four conditions that must be met before a

Certificate to Operate is issued (submission and approval of an Operations and Maintenance Manual, Sludge Management Plan, design for process Instrumentation, and design and construction of one or more treatment units to meet permit limits if the treatment plant fails to meet the permit effluent limits).

In a letter dated 5 December 2000, VDH advised DEQ that Hanover County's plans for the wastewater treatment plant, outfall forcemain and discharge structure are technically adequate and are recommended for approval by VDH. VDH advised that issuance of a construction permit is a matter for DEQ's office.

In a telephone conversation with the District on 31 January 2002, VDH indicated that they had not seen the Public Notice advertising permit application 01-V2032, but remembered the original application for the Totopotomoy wastewater treatment plant and outfall. VDH stated that from the Health Department's point of view, the treatment plant is "where it ought to be" and that it was a good project. VDH stated that the discharge location is "where it has to be" and that the water from the discharge pipe would actually be cleaner than the water in the Pamunkey River. VDH stated that they could foresee no water quality problems associated with this discharge.

In a letter dated 27 February 2002, the VDH indicated that their comments are limited to the impact on public health of (1) downstream drinking water intakes, (2) shellfish sanitation, and (3) recreational uses. VDH coordinated the project with their Division of Drinking Water, Division of Shellfish Sanitation and local Health District and reported that "None has objections to the sufficiency of the documents nor to issuance of the permit. VDH indicated that they had reviewed and recommended to DEQ approval of the treatment work design and transport facilities as they are "...technically adequate to achieve the stream standards established by DEQ for protection of the Pamunkey River."

**e. Virginia Department of Game and Inland Fisheries:** In a letter to DEQ dated 4 February 1999, the Virginia Department of Game and Inland Fisheries (VDGIF) indicated that since spawning and nursery areas of anadromous fishes such as striped bass, river herring and American shad have been documented at the project site, they supported dissolved oxygen monitoring to prevent adverse impacts to these species. Also, because chlorine can act as a chemical barrier to anadromous fish migrations, VDGIF indicated that they supported Hanover County's use of ultraviolet disinfection to reduce impacts to aquatic biota. VDGIF did not comment on the Public Notice for the present application.

**f. Virginia Institute of Marine Science (VIMS):** VIMS' 16 August 2000 comment report on application 99-1877 recommended that construction be avoided from mid-March through June to minimize adverse impacts on anadromous fish; and that the river bank and bottom contours be returned to pre-construction condition and the bank stabilized to minimize adverse impacts to non-vegetated wetlands, subaqueous bottom and local water quality from bank erosion. These recommendations were included as special conditions of VMRC permit 99-1877. VIMS did not provide separate comments to the Corps on Public Notice 01-V2032. However, these VIMS recommendations and similar previous recommendations made by the NMFS would be included as special conditions of any Corps authorization under 01-V2032.

In a letter to VMRC dated 11 October 2000, VIMS commented on the potential for adverse impacts to anadromous fish in the Pamunkey River downstream of the proposed discharge and concluded, "Through our review of the environmental situation surrounding this project, which took into account the permitted effluent limits and discharges, we determined that the probability of occurrence of a DO sag event sufficient to adversely impact anadromous fish is low." VIMS noted that their analysis did not consider cumulative impacts from development which generally follows sewage treatment upgrade and expansion projects. However, they concluded, "Our extended analysis has confirmed that the daily flows and

effluent limits proposed for this treatment plant have a low probability of adversely affecting anadromous fish resources in the Pamunkey River. Future growth and growth patterns may change this conclusion but are beyond the scope of the present analysis.”

**g. Virginia Department of Conservation and Recreation (DCR):** In a memo dated 26 June 2000 commenting on application 99-1877, DCR commented that appropriate habitat for the dwarf wedge mussel does not occur at the project site. In addition, DCR stated “...the proposed project is not anticipated to have any adverse impact on existing or planned recreational facilities, nor will it impact any streams on the National Park Service Nationwide Inventory, Final List of Rivers, potential Scenic Rivers or existing or potential State Scenic Byways.”

In a 15 January 2002 letter commenting on application 01-V2032, DCR’s Division of Natural Heritage commented that the potential for appropriate habitat for the federally listed threatened small whorled pogonia (*Isotria medeoloides*) (also a state-protected plant) exists at the site. DCR recommended that the project site be surveyed for the species. The results of the survey are contained in the Threatened and Endangered Species discussion in Section 7 above.

**h. U. S. Environmental Protection Agency (EPA):** In a letter dated 29 March 1999, EPA wrote to the Virginia Department of Environmental Quality that they had reviewed draft VPDES permit VA0089915 from the Piedmont Regional Office for the Totopotomoy wastewater treatment plant and had “no objection to the issuance of the permit”. However, they did have concern for DEQ’s consideration of the FWS’s recommendation that a second freshwater mussel survey be conducted prior to issuance of the permit to ensure compliance with the Endangered Species Act (see Threatened and Endangered Species discussion above).

In a telephone conversation on 11 December 2001, EPA informed the District that they did not plan to comment on the project at all since the wetland impacts were so minor. However, because of the water quality concerns, EPA was requested to provide written comments addressing whether the impaired status of the Pamunkey River or the modified Lake Anna release schedule would affect their concurrence with DEQ’s issuance of VPDES permit VA0089915. In a later telephone conversation with the District on 30 January 2002, EPA indicated that they would have no comments on the wetland impacts of the project since they were so minimal, but did intend to comment on the water quality issues.

In a letter dated 4 February 2002, the Acting Director of the Office of Environmental Programs of EPA Region III stated “EPA has considered the impacts to wetland associated with this project, and has concluded that these impacts will be minimal, and acceptable, provided that the compensatory mitigation proposed by the applicant is fully and effectively implemented.”

EPA further stated that subsequent to the 28 April 1999 issuance of the DEQ’s permit VA0089915 (VPDES permit), EPA identified the Pamunkey River as a water impaired by fecal coliform; and the Virginia State Water Control Board notified the public in October of 2000 that the release of water by the Virginia Power North Anna Nuclear Power Station from Lake Anna may be decreased by up to half the previously authorized minimum (from 40 cfs to 20cfs) in times of drought. EPA noted the 25 January 2002 letter from the U. S. Fish and Wildlife Service that identified concerns regarding whether the construction and subsequent operation of the project may adversely affect water quality in the Pamunkey River. EPA stated that “Most of these concerns appear to derive from events subsequent to the issuance of VPDES Permit No. VA0089915 for the facility.” EPA suggested that the Corps, in connection with its review pursuant to 33CFR 320.4(d), work with EPA Region III’s Office of Watersheds and the

Commonwealth of Virginia to ensure that Virginia's analysis of water quality impacts pursuant to Section 401 of the Clean Water Act considers the issues raised by the FWS letter. (See Section i, below.)

**i. U. S. Fish and Wildlife Service (FWS):** In a letter dated 11 March 1999 to DEQ, the FWS stated that they could not concur with the findings of the first survey for the dwarf wedge mussel and requested that another survey be conducted in May or June in the same area. After reviewing the second survey, the FWS stated in a letter addressed to Hanover County's environmental consultants dated 8 September 1999 their opinion that appropriate habitat for the dwarf wedge mussel does not occur at the project site and found that the project is not likely to adversely affect the species.

In a letter dated 25 January 2002 responding to the Public Notice for application 01-V2032, the FWS maintained their earlier determination that the project was not likely to adversely affect the dwarf wedge mussel. They noted, however, that the project occurs within the range of the small whorled pogonia and recommended a survey within appropriate habitat at the project site. The FWS also expressed concern for the potential degradation of water quality and listed following four water quality issues that they believe should be addressed by the Corps in consultation with EPA:

- "Issuance of the VPDES permit to discharge to the Pamunkey River for this facility occurred shortly before the federal listing under Section 303(d) of the Clean Water Act of the Pamunkey River as an impaired water due to violations of the dissolved oxygen (DO) water quality standard. The Virginia DEQ has numerous years of data from the late 1980's through the 1990's that document instream dissolved oxygen violations. At the time of the VPDES permit issuance, the Virginia DEQ was aware that the EPA was in the process of listing the Pamunkey River as impaired for dissolved oxygen violations.
- The Virginia State Water Control Board provided Public Notice of October 10, 2000 that the release of water by the Virginia Power North Anna Nuclear Power Station from Lake Anna, which is a tributary to the Pamunkey River, shall be decreased up to half the previously authorized minimum (from a minimum release flow of 40 Cubic feet per second (cfs) to an authorized minimum of 20 cfs) in time of drought conditions. There are several newly permitted VPDES wastewater treatment facilities, including the above-referenced facility for which the modeling to determine the effect of both carbonaceous and nitrogenous biochemical oxygen demands have not been fully considered and accounted for given the decreased flows from North Anna Reservoir.
- The Pamunkey River is spawning and nursery habitat for numerous anadromous fish. Instream dissolved oxygen levels, which can be exacerbated during low flow conditions are critical to these species' reproduction success. A dissolved oxygen level of 5 milligrams per liter has been generally accepted as necessary to the survival of anadromous fish eggs, larvae and juveniles.
- The Virginia DEQ has agreed that before a 303(d) listed waterbody may be removed from the 303(d) list due to naturally occurring conditions, it must determine that there are no anthropogenic sources causing or contributing to the dissolved oxygen deficit. This process has not been completed for the Pamunkey River and actions to curb the anthropogenic sources of pollution that cause and contribute to dissolved oxygen deficits have not been implemented fully.

The FWS commented that "For projects which may adversely affect quality of the waters of the United State, the Corps' regulations state that 'Certification of compliance with applicable effluent limitations and water quality standards require under provisions of Section 401 of the Clean Water Act will be

considered conclusive with respect to water quality considerations unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other water quality aspects to be taken into consideration' (33CFR320.4(d)). Based on the information provided above, the Service recommends that the Corps require that the EPA reevaluate this project and its effects on the water quality of the Pamunkey River." The District Engineer's responses to the FWS's water quality concerns are contained in Section 8 above.

In a letter dated 20 February 2002, the FWS stated that after reviewing and discussing the small whorled pogonia survey report with its author, "... it is the opinion of the Service that appropriate habitat for this species does not occur at the project site and therefore, this project is not likely to adversely affect the small whorled pogonia."

**j. National Marine Fisheries Service (NMFS):** In a letter dated 31 August 2000 commenting on application 00-V1332 for the Totopotomoy interceptor, the National Marine Fisheries Service (NMFS) indicated that anadromous fish have been collected in the proximity of the outfall site on the Pamunkey River and that the river is documented spawning and nursery habitat for alewife, striped bass, white perch, and yellow perch. The NMFS recommended that the permit be conditioned so that in-stream work is prohibited from 15 February through 30 June, that stream bottom contours be restored to their original elevation to prevent the creation of blockages, and that excavated material stored on site be stabilized and contained to prevent sedimentation during storm events. The NMFS did not provide separate comments on Public Notice 01-V2032. However, their above listed recommendations for in-stream work would be included as special conditions of any Corps authorization under 01-V2032.

**13. Public Participation and Opportunity for Comment:** Hanover County, DEQ, the SWCB, VMRC and the Corps of Engineers have provided considerable opportunity for public participation and comment on the various aspects of this proposal.

- Between March 1997 and February 2002, Hanover County held a series of public hearings and public information meetings on various aspects of the project.
- On 17 December 1998, the State Water Control Board and DEQ solicited public comments by newspaper advertisement of the draft VPDES permit.
- On 19 January 1999, the State Water Control Board and DEQ conducted a public hearing on the draft VPDES Permit. The hearing was advertised in local newspapers.
- On 11 March 1999, the State Water Control Board held a meeting to consider Hanover County's VPDES permit application and to listen to comments from opponents to the issuance of the permit.
- On 29 August 2000, the Virginia Marine Resources Commission conducted a public hearing. VMRC advertised the permit application by public notice for written comments.
- On 16 October 2000, the Norfolk District published a Joint Public Notice for application 00-V1332 for the Totopotomoy Interceptor Sewer Project. The 30-day notice expired on 14 November 2000.
- On 11 December 2001, the Norfolk District published a Joint Public Notice for application 01-V2032 for the Lee Davis Road pump station and forcemain, the Totopotomoy wastewater

treatment plant, a discharge forcemain, and discharge structure with a 30-day comment period to end on 11 January 2002. The District received several requests for a 2 week extension of the comment period since it coincided with the holiday season. The deadline for comments was extended to 25 January 2002.

In order to fully evaluate the public interest factors and the public opinion regarding the project, the Corps initiated the review of application 01-V2032 as an individual permit and a Corps Public Notice was issued requesting public comment. However, based on the 14 December 2001 site inspection, the magnitude of impacts to wetlands and waters of the U. S. in this application appeared to be minimal and therefore potentially capable of being authorized by Nationwide general permits. Nevertheless, the comment period was maintained and all comments were reviewed and evaluated in order to determine whether the project met all of the terms and conditions of the Nationwide Permits. Many of the comment letters received requested that the Corps conduct a public hearing.

Corps' public hearings are one process by which the public is afforded an opportunity to present views, opinions and information which will be considered by the Corps in evaluating a proposed permit action. Generally, public hearings are held when the District Engineer determines that additional information is needed from the public in order to resolve substantive issues.

The Norfolk District has received and reviewed an estimated total of 1,600 comments in response to the Corps's Public Notice on this project. In accordance with 33 CFR 325.2(a)(3), the applicant was given an opportunity to review the comments and to furnish their views on substantive issues. In addition, the District conducted a meeting at the proposed Pamunkey River discharge site with the principal project opponents, Mrs. Frances Crutchfield and Mr. Henry Broaddus, and their attorneys and consultants in order to hear their concerns. Based on a review of these comments, and coordination with applicable State and federal resources agencies, it has been determined that the District has a full understanding of all of the substantive issues and concerns raised on this proposal. All issues which are within the Corps' purview and within the scope of review appropriate to the level of impacts have been fully considered and addressed in this decision document. EPA's 404 (b)(1) Guidelines at 40 CFR 230.6 (b) state: "The Guidelines user, including the agency or agencies responsible for implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impacts and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity." Also, as outlined above, there have been numerous other opportunities for public input during the State's review of the project and the Corps has reviewed reports of the information provided during the State conducted public hearings. Therefore, the District Engineer has determined that no valid interest would be served by conducting a Corps' public hearing.

**14. Summary of Public Comments:** According to 33 CFR 325.3, "The public notice is the primary method of advising all interested parties of the proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable impact on the public interest." An estimated total of 1,600 written comments were received from the public in response to Public Notice 01-V2032. The overwhelming majority of these letters expressed opposition to the project and were either form letters or letters following a suggested format found on a website called SaveOurRiver.org. Approximately 2 percent of the letters received were in favor of the project. However, the purpose behind soliciting public comment is not to conduct a vote, it is to gather information necessary to evaluate the probable impact on the public interest (see 33 CFR 325.3). All letters received from the general public have been reviewed and all comments were given full consideration in the District Engineer's decision on this project. (A list of the names and addresses of all commenters is contained in

the administrative record for this project.) Substantive comments are addressed below by subject. Other issues raised that are not pertinent to the District Engineer's decision have not been individually addressed.

**a. The Corps should prepare an Environmental Impact Statement.** In reviewing this project, the Corps of Engineers has complied with the requirements of the National Environmental Policy Act (NEPA) and its implementing regulations found at 40 CFR Parts 1500-1508 and 33 CFR Part 325 Appendix B. Environmental Impact Statements are prepared when the District Engineer determines that the decision is a major federal action significantly affecting the quality of the human environment. When the analysis results in a Finding of No Significant Impact (FONSI), an EIS is not necessary. The individual and cumulative adverse impacts of this project to the aquatic environment have been found to be minimal and to qualify for authorization under General Permits. Therefore, the District Engineer determined that an EIS is not warranted. Nationwide Permits are a class of General Permits developed by the Corps of Engineers for activities that have been determined to result in minimal individual and cumulative impacts to the aquatic environment. For all such General Permits, the assessment of environmental impacts and the opportunity for public comment was completed when the Nationwide Permits themselves were developed by Corps Headquarters.

**b. The Corps should extend the public comment period and recognize commenters as interested parties.** As stated in Section 13 above, the Norfolk District granted the two week extension of the comment period that was requested by the principal opponents of the project as well as the FWS. Although the extended comment period officially ended on 25 January 2002, the Norfolk District has acknowledged, placed in the administrated record and considered all comments that have been received after the comment period closed. All comment letters from the general public were acknowledged by letter and the names (when legible) and addresses (when provided) of all commenters were compiled in a database in order to advise commenters of the District Engineers' final decision on this project.

**c. The Corps should conduct a Public Hearing to allow for debate of environmental impacts, alternatives and costs.** A Corps public hearing is not a forum for public debate, rather it is an information gathering session conducted when the District Engineer needs more information in order to gain a better understanding of the issues. Ample opportunity for public participation and comment has been provided on this project and approximately 1,600 written comments were received in response to the Public Notice. Through coordination of public concerns with the applicant and applicable State and federal agencies, the District Engineer has attempted to resolve the substantive issues informally and has determined that no additional information is needed to make a decision. As stated in Section 13 above, the District Engineer has a full understanding of all of the substantive issues and concerns raised on this proposal and has determined that a Corps' public hearing is not warranted.

**d. The stated 105-day review period is inadequate for the Corps' required review.** Projects similar in nature to Hanover County's proposal that would not result in more than minimal individual and cumulative adverse impacts to the aquatic environment would generally satisfy the terms and conditions of Corps General Permits. Similar projects are normally reviewed within the 45-day pre-construction notification interval. Therefore, the District Engineer has determined that a 105-day review period is more than adequate to evaluate this project.

**e. Hanover County has not submitted a complete permit application and has not included all activities reasonably related to this project and still plans to build the Totopotomoy interceptor or have it built by others.** As stated in Section 4 above, the District Engineer has determined that Hanover County has fully disclosed all of the activities that are reasonably related to the project and has

determined that the application before the Corps is for a single and complete project with independent utility from the previously proposed Totopotomoy interceptor as well as from any future improvements to the conveyance of wastewater within the County.

As stated in Section 11 b. above, Hanover County has formally withdrawn their permit application for the Totopotomoy interceptor, removed it from the County's Capital Improvement Plan and replaced it with the Lee Davis Road pump station and forcemain. Therefore, the Totopotomoy interceptor no longer exists as a County funded project. Although the County does not claim that some portion of the interceptor will never be built in the future, they have stated that they have no intention of constructing the Totopotomoy interceptor as it was presented to the Corps. Hanover County has identified a number of future options for handling sewage within the County that do not involve the construction of the Totopotomoy interceptor. Also, the proposed Lee Davis pump station will provide virtually the same initial flow to the wastewater treatment plant the Totopotomoy interceptor would have provided. Based on the version of the project for which authorization is currently sought in this permit application, which includes ample justification for alternatives to the Totopotomoy interceptor that are not only less environmentally damaging than the Totopotomoy interceptor, but also less expensive, it is difficult to imagine how or why the Totopotomoy interceptor as originally proposed would again be proposed.

The County is currently in the process of updating their Comprehensive Plan and began conducting public meetings to eliminate the section of sewer line shown on the Comprehensive Plan along Totopotomoy Creek between Rural Point Road and the Totopotomoy wastewater treatment plant. The County recently stated that they are willing to vacate the easements for this section of the originally proposed alignment if property owners will return the funds they were paid for an easement. Also, the County recently advised the District of their plans to abandon the influent pump station. Therefore, the County has demonstrated to the satisfaction of the District Engineer that they have no plans to construct the Totopotomoy interceptor. Therefore, it is not a reasonably foreseeable cumulative impact of the project currently before the Corps.

While Hanover County has no current plans to construct any portion of the originally proposed 5.55-mile long (29,320 linear foot) Totopotomoy interceptor, The Hanover Group proposes to construct 2,200 feet (0.42 miles) of 30-inch sewer line along the same or nearly the same alignment that a portion of the Totopotomoy interceptor would have followed in order to provide sewer service to the Belle Creek multi-use development on Academy Creek. The Bell Creek sewer line will be a 30-inch line capable of carrying approximately 4.8 mgd of flow, whereas the Totopotomoy interceptor would have been a 42-inch line with a flow capacity of 12 mgd. The Bell Creek sewer line is sized to serve the Hanover Group's development and would not serve the same function as the originally proposed Totopotomoy interceptor. Corps authorization for the Bell Creek sewer line and other activities in wetlands and waters of the U. S. is being evaluated under The Hanover Group's permit application 01-V2172.

**f. The applicant has previously attempted to piecemeal this project.** The basis for this comment seems to rely on the fact that two previous applications and a pre-application have been submitted to the Corps for these same activities. It is not unusual for an applicant to submit a pre-application plan for a Corps jurisdictional determination as was done for pre-application 99-R0875. The Norfolk District chose to assert discretionary authority over the Totopotomoy interceptor separately (00-V1332) because it would have resulted in more than minimal impacts to the aquatic environment and the District had determined that the outfall, forcemain and wastewater treatment plant had utility independent of the Totopotomoy interceptor. Nationwide Permit verifications were issued for the original application for the Totopotomoy wastewater treatment plant, forcemain and outfall on the Pamunkey River under permit 99-V1877.

The most recent application (01-V2032) was submitted for re-authorization of the wastewater treatment plant, and outfall after the Nationwide Permit verification had been invalidated by the court. In this application, the Lee Davis pump station replaced the originally proposed Totopotomoy interceptor. Therefore, the District Engineer does not agree with allegations that the submission of multiple applications in this case was an attempt to “piecemeal the project” or to “avoid regulatory scrutiny.”

**g. If Hanover County does not intend to construct the Totopotomoy interceptor, then the permit must be denied because the wastewater treatment plant and influent pump station do not have to be located in wetlands and will violate the Section 404 (b)(1) Guidelines.** As stated in Section 11 b. (4) above, Hanover County has decided to halt any additional construction of the influent pump station and propose to abandon it. All improvements will be removed to four feet below the ground surface and the area will be filled, graded and seeded. On-site avoidance and minimization of wetland impacts at the Totopotomoy wastewater treatment plant site have been accomplished through site selection and footprint orientation, however, the consideration of off-site alternatives is not required for the evaluation of projects with minimal individual and cumulative impacts that would qualify for general permits.

EPA’s 404 (b)(1) Guidelines at 40 CFR 230.6 (b) state: “The Guidelines user, including the agency or agencies responsible for implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impacts and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity.” The preamble to the Corps’ 1996 Nationwide Permits states, “Furthermore, the “sequencing” requirement for individual permits for off-site avoidance under the 404(b)(1) Guidelines does not apply to general permits.”

**h. Less damaging alternative locations for the outfall are available, therefore the location of the outfall and diffuser violates the Section 404(b)(1) Guidelines and must be denied.** EPA’s 404 (b)(1) Guidelines recognize that the level of analysis required varies with the nature and complexity of impacts and state at 40 CFR 230.7 (b)(1) “...consideration of alternatives in Section 230.10 (a) are not directly applicable to General Permits.” The Guidelines at 40 CFR 230.10 state “Although all requirements in Section 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impact on the aquatic ecosystems posed by specific dredged or fill material discharge activities. Also the preamble to the Corps’ 1996 Nationwide Permit regulations (page 65911 Paragraph 4 states, “...the “sequencing” requirement for individual permits for off-site avoidance under the section 404(b)(1) Guidelines does not apply to general permits.” The District Engineer has evaluated the alternatives analysis as is appropriate for the level of impact of the project.

**i. The Corps should conduct an independent assessment of other alternatives to Hanover County’s proposed project including regional cooperation with the City of Richmond and Henrico County, expansion of existing wastewater treatment plants, reduction of Hanover County’s inflow and infiltration problems, creation of storage and land application, and discharge of treated sewage into the Chickahominy River.** The District Engineer has evaluated the alternatives analysis as is appropriate for the level of impact of the project. Hanover County submitted with their permit application an analysis of the various off-site alternatives that they had considered to provide treatment, conveyance and disposal of wastewater, including reports on engineering, feasibility, wastewater treatment plant site selection, and outfall discharge location prepared by several consulting firms. This alternatives analysis was reviewed as a part of the District Engineer’s evaluation of the project for on-site minimization of wetland impacts.

On-site avoidance and minimization of wetland impacts was accomplished through selection of a site for the wastewater treatment plant where wetlands are located along the fringes of the property and could be largely avoided. Orienting the footprint in the central portion of the property also avoids potential future impacts to forested headwater wetlands on the eastern portion of the property if and when the wastewater treatment plant is expanded. Also, the County was able to further minimize wetland impacts at the Lee Davis pump station from 240 square feet to 30 square feet by replacing the originally proposed junction box with a smaller diversion structure and manhole.

EPA's 404 (b)(1) Guidelines at 40 CFR 230.7 (b)(1) state "...consideration of alternatives in Section 230.10 (a) are not directly applicable to General Permits." It is stated in 40 CFR 230.10 that "Although all requirements in Section 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impact on the aquatic ecosystems posed by specific dredged or fill material discharge activities." Also the preamble to the Corps' 1996 Nationwide Permit regulations (page 65911 Paragraph 4 states, "...the "sequencing" requirement for individual permits for off-site avoidance under the section 404(b)(1) Guidelines does not apply to general permits."

**j. The discharge will damage water quality in the Pamunkey River because the river already fails to meet minimum water standards, there is not sufficient tidal action and there will not be enough continuous fresh water flow to prevent pollution.** As outlined in Section 8 above, the District Engineer has concluded that in their permit review, the State agencies have considered and addressed all water quality issues. DEQ has issued a VPDES permit with limits that will be fully protective of water quality in the Pamunkey River. EPA has reviewed the VPDES permit and the EPA's Regional Administrator has not advised the Corps that the VPDES permit is invalid.

DEQ was not aware that flows from Lake Anna would be reduced from 40 cfs to 20 cfs during times of drought when the VPDES permit was issued for the Totopotomoy wastewater treatment plant. However, DEQ has since stated that the limits allowed under 10-10-3 protect water quality regardless of river flow or effluent discharge rate. DEQ does not believe that these flow changes would interfere with the capacity of the waterbody to assimilate and process pollutants or to maintain State-established water quality standards. The District Engineer does not find reason to disagree with DEQ's assessment.

**k. The Corps should not rely on the issuance of the VPDES permit as conclusive of water quality issues and should consider water quality impacts of the project as part of its review.** Water quality is one of the public interest factors considered by the Corps when conducting a public interest review. As outlined in Section 8, above, the District Engineer has reviewed the evidence and analytical results submitted by Hanover County, DEQ, VDGIF, VIMS and by the public, and has concluded that all water quality issues have been considered and satisfactorily addressed. The Corps' regulations at 33 CFR 320.4 (d) state "Certification of compliance with applicable effluent limitations and water quality standards required under provisions of Section 401 of the Clean Water Act will be considered conclusive with respect to water quality considerations unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other water quality aspects to be taken into consideration." EPA's Regional Administrator has not advised the Corps that either the VPDES permit or the VWPP/401 Water Quality Certification is invalid, therefore, the District Engineer accepts as conclusive that the effluent discharge complies with the provisions of the Clean Water Act. According to the preamble to the Corps' Nationwide Permit Program implementing regulations (22 November 1991) at 33 CFR 330 regarding Nationwide Permit 7 for Outfall Structures, "It is the responsibility of EPA pursuant to Section 402 of the Clean Water Act to regulate the effluent of outfall structures. The Corps has responsibility for those activities associated with the construction of these structures." The Corps is

not required to validate another agency's permit process. However, the District Engineer has confirmed that when making their permit decisions, all issues and concerns were considered in the State agencies' reviews of this proposal.

**l. The Corps should consider the impacts on wetlands of residential development and sprawl that will result from the construction of the Totopotomoy sewage treatment plant.** Hanover County's Comprehensive Plan is their primary tool for managing growth that incorporates a phased urban development strategy for the quantity, quality, location and timing of residential, commercial and industrial development in order to prevent urban sprawl and preserve the rural character of the County. Prior to adoption of its Comprehensive Plan, early urban-style development occurred in sprawling, leap-frog style on private, central water and sewer systems. Under Hanover County's Comprehensive Plan, 80 percent of the County will remain rural. Public water and sewer are not planned to be made available in this part of the County and principal land uses will continue to be agricultural, silvicultural, and low density residential. Development in this portion of the County will only be to the level that can be naturally supported by the land. Hanover County has designated the remaining 20 percent of its land as a "Suburban Service Area" where public water and sewer will be made available and more intense development allowed. Under their urban development strategy for this area, more intense urban-type land uses will occur in small, contiguous areas which are brought into phase to allow for logical, economical, and more environmentally sensitive development.

According to the Corps regulations at 33 CFR 320.4 (j)(2), "The primary responsibility for determining zoning and land use matters rest with state, local and tribal governments. The district engineer will normally accept decisions by such governments on those matters unless there are significant issues of overriding national importance."

**m. The discharge will adversely affect fish and wildlife in the Pamunkey River especially anadromous fish.** This portion of the Pamunkey River is a spawning area for several species of anadromous fish. In their VPDES permit, DEQ has established discharge limits which are fully protective of water quality and fish and wildlife resources in the Pamunkey River. Likewise, the VMRC permit for the discharge structure has been conditioned to protect migrating fish populations. The National Marine Fisheries Service recommended that no instream work be performed between 15 February and 30 June; that stream bottom contours be restored to their original elevation to prevent the creation of blockages, and that excavated material stored on site be stabilized and contained to prevent sedimentation during storm events. These recommendations will be incorporated as special conditions into any Corps authorization of the work. The District Engineer has determined that potential adverse effects to anadromous fish have been adequately considered and addressed in the State and federal reviews of the permit applications for the proposed discharge outfall on the Pamunkey River. While there is some potential for minor impact, the various protective conditions included in the necessary permits should minimize any such impact.

**n. The discharge will adversely affect the Pamunkey Tribe's shad fishing and shad hatchery which is located 10 miles from discharge site and will endanger shad spawning habitat.** The Pamunkey Reservation is located about 10 linear miles downstream of the outfall, but the distance by river miles is closer to 20 miles because of the numerous wide meanders in that section of the Pamunkey River. As outlined in Section 10, above, the District Engineer has determined that potential adverse effects to anadromous fish have been considered and addressed in both the State and federal reviews of this project. All necessary requirements and conditions have been incorporated in order to protect fish and wildlife resources. The issuance of a permit for this project should not adversely affect the Pamunkey Indian Tribe's ability to operate their shad hatchery or to maintain their culture.

**o. The discharge will adversely affect recreational uses of the Pamunkey River such as swimming, fishing, boating, and a guided canoe and kayak river tour operation.** The Division of Drinking Water, Division of Shellfish Sanitation and local Health District of the Virginia Department of Health have concluded that the project will not result in adverse impacts to public health regarding downstream drinking water intakes, shellfish sanitation, and recreational uses. VDH indicated that they had recommended approval of the treatment work design and transport facilities as they are "...technically adequate to achieve the stream standards established by DEQ for protection of the Pamunkey River." The District Engineer concurs with these findings.

**p. The project will adversely affect the Marlbourne National Historic Landmark, the Newcastle Town archaeological site which is a Virginia Landmarks Register property and the grave of an unknown colonist who has been called "Sybil" by the property owners.** As outlined in Section 6 above, the District Engineer concurs with VDHR that as proposed and completed, the project will have no adverse effect on any historic resources that are listed or eligible for listing in the National Register of Historic Places.

**q. Hanover County has overstated their need for additional wastewater treatment capacity and has left unused 26% of the existing capacity purchased from Henrico County.** Because Hanover County's stormwater system ties into their sewage system, actual wastewater flows fluctuate with the amount of precipitation. Hanover County is currently under their projections for wastewater flow to Henrico primarily due to the extended drought conditions the entire region has been experiencing. However, this has not always been the case. Exact predictions for sewage flow are not possible because future weather conditions and the precise number of new connections to the system are unknown. Since 1998, Hanover County has added over 1,500 new customers to their sewer system and another 4,000 lots currently zoned for development could be connected to the sewer system at any time.

Both the Acting County Manager of Henrico County and the City Manager of the City of Richmond wrote on 25 January 2001 in support of Hanover County's proposal to provide additional wastewater treatment capacity for the region. Henrico County stated "We believe the construction of a wastewater treatment plant in Hanover County is part of the regional solution of providing utility service within the metropolitan Richmond area. A regional solution does not simply mean that one locality provides services to another locality but that localities work together to provide services to their citizens in the most efficient and effective manner, which is precisely what the jurisdictions in the metropolitan Richmond area have done." Henrico County indicated that in 1997, they advised Hanover County that Henrico County could not satisfy its long-term wastewater treatment needs and suggested that they pursue other alternatives.

The Office of the Governor's Secretary of Natural Resources wrote on 20 December 2001 in support of Hanover County's proposed Totopotomoy wastewater treatment plant and related facilities. The Secretary stated "The additional wastewater treatment that will be provided by this facility is essential to ensure the health, safety and welfare of Hanover citizens and to enable the continued environmentally sound development of the county."

The public and private need for certain categories of activities with minimal individual and cumulative adverse effects on the environment was addressed when the Nationwide Permits were developed by Corps Headquarters. Therefore, such public interest factors as need are not normally considered in the review of a project that meets the terms and conditions of Nationwide Permits.

**15. Findings and Decision of the District Engineer:** The District Engineer has determined that the decision on this project is not a major Federal action significantly affecting the quality of the human environment. Therefore, no Environmental Impact Statement will be prepared. This finding is based on information contained in the District's evaluation of the project and comments received from Federal, State and local agencies and the general public.

The District Engineer has fully evaluated Hanover County's application and has determined that it represents a single and complete project and that the applicant has disclosed all reasonably related activities. This determination was made prior to issuance of the District's public notice for permit application 01-V2032. The wetland impacts associated with the originally proposed Totopotomoy interceptor are no longer a part of the project that is before the Corps and are not reasonably foreseeable impacts of this project. The proposed work by others along a portion of the original Totopotomoy interceptor alignment is not reasonably related to Hanover County's project and will be evaluated by the Corps as a part of The Hanover Group's application for a multi-use development. Future treatment and conveyance projects that will be developed by the County when the need arises must be reviewed for compliance with applicable State and federal laws and approved or denied as appropriate.

The individual and cumulative wetland impacts associated with this project are minimal, and there will be no adverse effects to historic resources and no impacts to federally-listed threatened or endangered species. Potential impacts to water quality and anadromous fish have been addressed above and in the State's permits, and EPA did not object to the issuance of the State's VPDES permit or VWPP/401 Water Quality Certification.

Analysis and Documentation: The Norfolk District began a public interest review of the new application under an individual Department of the Army Permit. According to 33 CFR 330.4(e)(3), "The division or district engineer will restore authorization under the NWP's at any time he determines that his reason for asserting discretionary authority has been satisfied by a condition, project modification or new information." Based on the results of the 14 December 2001 field evaluation, the elimination of the Totopotomoy interceptor as a component of the project, and the fact that no new issues were identified in response to the Public Notice or subsequent coordination with appropriate State and federal resource agencies that would preclude the use of general permits, the District Engineer determined that it was appropriate to consider the project under the Nationwide Permit program.

EPA's 404 (b)(1) Guidelines at 40 CFR 230.6 (b) state: "The Guidelines user, including the agency or agencies responsible for implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impacts and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity." Based on the above findings, the District Engineer has determined that the proposal will result in minimal individual and cumulative impacts to the aquatic environment and that the project qualifies for authorization by Nationwide Permits.

According to EPA's 404(b)(1) Guidelines at 40 CFR 230.6(d), "In the case of activities covered by General permits.....the analysis and documentation required by the Guidelines will be performed at the time of General permit issuance.....and will not be repeated when activities are conducted under a General permit...." EPA's 404(b)(1) Guidelines (40 CFR 230.7(a)), describe the conditions for the issuance of general permits: (1) The activities in such category are similar in nature and similar in their impact upon water quality and the aquatic environment; (2) The activities in such category will have only minimal adverse when performed separately; and (3) The activities in such category will have only minimal cumulative adverse effects on water quality and the aquatic environment. The District Engineer

has determined that projects similar in nature to the one currently before the Corps would generally satisfy the terms and conditions of Corps General Permits as they would not result in more than minimal individual and cumulative adverse impacts to the aquatic environment.

Other Alternatives: Hanover County submitted with their permit application an analysis of the various off-site alternatives that they had considered to provide treatment, conveyance and disposal of wastewater, including reports on engineering, feasibility, wastewater treatment plant site selection, and outfall discharge location prepared by several consulting firms. The analysis includes discussions of regional solutions whereby the County would purchase additional treatment capacity from adjacent localities (Henrico County and the City of Richmond); the expansion of the existing Hanover County treatment plants (Doswell, Ashland and Hanover Courthouse), a number of conveyance and discharge options, and the “no build” alternative. This alternatives analysis was reviewed as a part of the District Engineer’s evaluation of the project for on-site minimization of wetland impacts.

On-site avoidance and minimization of wetland impacts at the wastewater treatment plant site was accomplished through site selection orientation of the footprint and establishment of an upland vegetated buffer. Wetland impacts at the Lee Davis pump station were minimized by replacing the originally proposed junction box with a smaller diversion structure and manhole.

The District Engineer has evaluated the alternatives analysis as is appropriate for the level of impact of the project. EPA’s 404 (b)(1) Guidelines recognize that the level of analysis required varies with the nature and complexity of impacts and state at 40 CFR 230.7 (b)(1) “...consideration of alternatives in Section 230.10 (a) are not directly applicable to General Permits.” It is stated in 40 CFR 230.10 that “Although all requirements in Section 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impact on the aquatic ecosystems posed by specific dredged or fill material discharge activities.” Also the preamble to the Corps’ 1996 Nationwide Permit regulations (page 65911 Paragraph 4 states, “...the “sequencing” requirement for individual permits for off-site avoidance under the section 404(b)(1) Guidelines does not apply to general permits.” Had this permit been processed through completion as an individual permit, off-site alternatives would have been investigated and evaluated relative to the proposed alternative. Once a project is determined to meet the terms and conditions of a Nationwide Permit (or combination of Nationwide Permits), consideration of off-site alternatives is no longer necessary or appropriate.

**a. Nationwide Permits:** After reviewing the project and the modifications incorporated to minimize adverse impacts, the District Engineer has concluded that the proposed work satisfies the terms and conditions of the Corps 2002 Nationwide Permit (NWP) Numbers 7, 12, 18 and 39. The District Engineer’s rationale for reaching this determination is based on the following:

**NWP 7: Outfall Structures and Maintenance.** This Nationwide Permit authorizes:

1. the construction of outfall structures and associated intake structures where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted, or are otherwise in compliance with regulations issued under the National Pollution Discharge Elimination System Program (NPDES) pursuant to Section 402 of the Clean Water Act, and
2. maintenance excavation, including dredging to remove accumulated sediments. The amount of excavated or dredged material must be the minimum necessary to restore the outfalls and/or intakes. The dredged or excavated material must be deposited or retained at an upland site, unless otherwise

approved by the Corps under a separate authorization and proper soil erosion and sediment measures are used to minimize reentry of sediments into waters of the U. S.

Rationale: The proposed discharge outfall structure on the Pamunkey River satisfies the terms of NWP 7 as the effluent from the outfall received NPDES authorization from the Virginia Department of Environmental Quality (see Section 8 of this decision document). In addition, the dredging and excavation needed to install the outfall has been minimized to the maximum extent practicable and all dredged and excavated material will be transported to a contained, upland dredged material management site. The County's outfall structure is similar in nature to many other outfall structures that are commonly authorized by the Corps under NWP 7.

**NWP 12: Utility Line Activities.** This Nationwide Permit authorizes:

1. the construction, maintenance, and repair of utility lines, including outfall and intake structures and associated excavation, backfill, or bedding for utility lines in all waters of the U. S., provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication.

2. Material resulting from trench excavation may be temporarily sidecast (up to 3 months) into waters of the U. S., provided the material is not placed in such a manner that it is dispersed by currents or other forces. This period may be extended for a period not to exceed 180 days. In wetlands, the top 6" to 12" of the trench should normally be backfilled with topsoil from the trench. Furthermore, the trench cannot be constructed in such manner as to drain waters of the U. S.

Rationale: The proposed utility line activities at the Lee Davis pump station on Beaverdam Creek satisfy the criteria for NWP 12 as the sewer line pipes will be installed in an open-cut trench, excess material will be disposed of off-site, and the substrate will be restored to grade and allowed to re-vegetate with the existing scrub-shrub community. The County's utility line construction at the Lee Davis pump station is similar in nature to many other utility line construction projects that are commonly authorized by the Corps under NWP 12.

**NWP 18: Minor Discharges.** This Nationwide Permit authorizes:

Minor discharges of dredged or fill material into all waters the U. S. if the activity meets all of the following criteria:

1. the quantity of discharged material and the volume of area excavated do not exceed 25 cubic yards below the plane of ordinary high water mark or the high tide line.

2. the discharge, including any excavated area, will not cause the loss of more than 1/10 acre of a special aquatic site, including wetlands. For the purposes of this NWP, the acreage limitation includes the filled area and excavated area plus special aquatic sites that are adversely affected by flooding and special aquatic sites that are drained so that they would no longer be a water of the U. S. as a result of the project.

3. If the discharge, including any excavated area, exceeds 10 cubic yards below the plane of ordinary high water or the high tide line or if the discharge is in a special aquatic site, including wetlands,

the permittee notifies the District Engineer in accordance with the “Notification” General Condition. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands.

Rationale: The County satisfied the “Notification” requirement through the submission a joint permit application for the entire project. The proposed 30-square foot fill located in a non-tidal wetland for the purpose of constructing a diversion structure and manhole will not cause any flooding or draining of wetlands. This discharge will amount to 1.67 cubic yards. Therefore, the County’s proposed permanent fill associated with the diversion structure and manhole satisfies the terms of NWP 18. This small fill is similar in nature to many other small fills that are commonly authorized by the Corps under NWP 18.

**NWP 39: Residential, Commercial, and Institutional Developments.** This Nationwide Permit authorizes:

1. Discharges of dredged and/or fill material into non-tidal waters of the U. S., excluding non-tidal wetlands adjacent to tidal waters, for the construction or expansion of residential, commercial, or institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures. Examples of institutional developments include schools, fire stations, government office buildings, judicial buildings, public works buildings, libraries, hospitals, and places of worship.

2. the discharge cannot cause the loss of greater than ½ acre of non-tidal waters of the U. S., excluding non-tidal wetlands adjacent to tidal waters and it cannot cause the loss of greater than 300 linear feet of a stream bed, unless for intermittent stream beds this criterion is waived in writing pursuant to a determination by the District Engineer that the activity complies with the other terms and conditions of the NWP and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively.

3. The permittee must notify the District Engineer in accordance with General Condition 13, if any of the following criteria are met: (1) the discharge causes the loss of greater than 1/10 acre of non-tidal waters of the U.S., excluding non-tidal wetlands adjacent to tidal waters; or (2) the discharge causes the loss of any open waters, including perennial or intermittent streams, below the ordinary high water mark, or (3) the discharge causes the loss of greater than 300 linear feet of intermittent stream bed.

4. For discharges in special aquatic sites, including wetlands, the notification must include a delineation of affected special aquatic sites.

5. The discharge is part of a single and complete project.

6. The permittee must avoid and minimize discharges into waters of the U.S. at the project site to the maximum extent practicable. The notification, when required, must include a written statement explaining how avoidance and minimization of losses of waters of the U.S. were achieved on the project site. Compensatory mitigation will normally be required to offset the losses of waters of the U. S.

7. When this NWP is used in conjunction with any other NWP, any combined total permanent loss of waters of the U.S. exceeding 1/10 acre requires that the permittee notify the District Engineer in accordance with General Condition 13.

8. Any work authorized by this NWP must not cause more than minimal degradation of water quality or more than minimal changes to the flow characteristics of any stream.

9. For discharges causing the loss of 1/10 acre or less of waters of the U.S., the permittee must submit a report, within 30 days of completion of the work, to the District Engineer that contains the following information: (1) The name, address, and telephone number of the permittee; (2) The location of the work; (3) A description of the work; (4) The type and acreage of the loss of waters of the U.S.; and (5) The type and acreage of any compensatory mitigation used to offset the loss of waters of the U.S.

10. If there are any open waters or stream within the project area, the permittee will establish and maintain, to the maximum extent practicable, wetland or upland vegetated buffers next to those open waters or streams consistent with General Condition 19.

Rationale: The examples of institutional developments listed above as qualifying for NWP 39 include several different kinds of municipal buildings similar in nature to this municipal building (the Totopotomoy wastewater treatment plant). The impacts upon water quality and the aquatic environment from construction of the Totopotomoy wastewater treatment plant are similar in nature to the impacts of many kinds of institutional developments commonly authorized by the Corps under NWP 39. The completed wetland impacts for the Totopotomoy wastewater treatment plant adjacent to Totopotomoy Creek consist of fill in non-tidal wetlands for drainage improvements and the preparation of a pad for a future biological treatment tank associated with a public works project.

The activity has resulted in the loss of 0.16 acres of non-tidal headwater wetlands including 239 linear feet of headwater intermittent stream bed, which does not exceed the ½ acre threshold stipulated in NWP 39. Notification of the work was provided in the form of pre-application 99-R0875, and permit applications 99-V1877 and 01-V2032. A wetland delineation for the wastewater treatment plant site was submitted and confirmed by the Corps. The District Engineer has determined that the discharge for the wastewater treatment plant is one of the components that together form a single and complete project. Hanover County submitted a written statement outlining their efforts to minimize wetland impacts at the project site to the greatest extent possible through orienting the footprint to avoid impacts to wetlands on the eastern portion of the property. The applicant has proposed and the Corps has accepted as mitigation for the unavoidable wetland losses, in-lieu fee contribution to the Virginia Wetlands Restoration Trust Fund.

A sedimentation basin constructed at the toe of the slope will protect Totopotomoy Creek from any water quality degradation that might have resulted from erosion and sedimentation from the wastewater treatment plant site. The flow characteristics of 239 linear feet of headwater intermittent stream were impacted by grading and site preparation; however, the stream flow continues to reach Totopotomoy Creek. Submittal of a report containing the information required above will be a condition of the Corps authorization of this project. Through site design, the applicant has maintained a vegetated upland buffer between the facility and the wetlands and waters of Totopotomoy Creek.

**b. Nationwide Permit General Conditions:** All of the Corps' NWPs have general conditions that must be followed in order for any authorization by a NWP to be valid. These general conditions are listed below followed by the District Engineer's assessment of how this project meets the condition.

Condition 1: Navigation. The proposed utility line and wastewater treatment plant are not located in navigable waters of the U. S. and will, therefore, not impact navigation. However, the proposed outfall structure is located in navigable waters of the U. S. The outfall structure will extend

about 60 feet from the base of the bank with only the diffuser structures sitting above the river bottom. The diffusers will be under approximately 10 feet of water at ordinary high water and should not adversely affect navigation.

Condition 2: Proper Maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety. The Hanover County Department of Public Utilities has a maintenance department consisting of 19 employees with full-time responsibility for maintaining the County's water and sewer systems. The County also employs various contractors to assist with maintenance activities when required.

Condition 3: Soil Erosion and Sediment Controls. The County is required to adhere to the provisions of Virginia's Soil Erosion and Sedimentation Control Law to minimize erosion and sedimentation. This includes placement of riprap and an erosion matting material on the Pamunkey River bank to stabilize the slope and prevent erosion; performing work in the river within a turbidity curtain; and the construction of a sedimentation basin at the bottom of the slope between the wastewater treatment plant site and Totopotomoy Creek.

Condition 4: Aquatic Life Movements. No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. The proposed utility line and sewage treatment plant will not be located in navigable waters of the U. S. The proposed outfall structure will be located in navigable waters, however, it has been designed so as not to block aquatic life movements and includes the prohibition of chemical and physical barriers to the movement of anadromous fish.

Condition 5: Equipment. Any equipment that needs to be located in wetlands to install the proposed utility line or the wastewater treatment plant will be placed on mats or other measures taken to minimize soil disturbance.

Condition 6: Regional and Case by Case Conditions: The Norfolk District has developed regional conditions for NWP 12 concerning access roads and notification procedures for discharges involving utility line substations and permanent or temporary access roads. This project does not involve access roads or utility line substations, therefore, the Norfolk District's regional conditions do not apply. Several case-specific special conditions, listed in Section c. below, will be included as conditions of the Nationwide Permit verification.

Condition 7: Wild and Scenic Rivers. The Commonwealth of Virginia has no federally approved wild and scenic rivers.

Condition 8: Tribal Rights. The Pamunkey Indian Tribe is not a federally-recognized tribe, and their treaty is held by the Commonwealth of Virginia, not the federal government. Therefore, the Corps' permit decision could not violate any treaty rights. Nonetheless, the issue of potential impairment of the ability of the Pamunkey Tribe to continue their shad fishing and shad hatchery operations is addressed in Section 10 of this decision document. Potential adverse effects to anadromous fish have been considered and addressed in both the State and federal reviews of this project and all necessary requirements and conditions have been incorporated in order to protect fish and wildlife resources. The issuance of a permit for this project should not adversely affect the Pamunkey Tribe's rights associated with their use of the Pamunkey River.

Condition 9: Water Quality. This issue is addressed in Section 8 of this decision document. The project will result in only minimal adverse impacts to water quality. The District Engineer has concluded

that DEQ considered all applicable chemical, physical and biological measures to be adequately protective of water quality in the Pamunkey River and that sufficient administrative and regulatory controls are in place to ensure that water quality standards in the Pamunkey River are met.

Condition 10: Coastal Zone Management. The project complies with all the enforceable programs under Virginia's Coastal Resources Management Program.

Condition 11: Endangered Species. The project was coordinated with the U. S. Fish and Wildlife Service pursuant to the Corps' responsibility under Section 7 of the Endangered Species Act. In response, the Service advised the District Engineer that the project would not affect any federally-listed threatened or endangered species or any proposed or designated critical habitat.

Condition 12: Historic Properties. The project was coordinated with the Virginia Department of Historic Resources. The District Engineer's review of this public interest factor is contained in Section 6 of this decision document. The District Engineer and VDHR concur that as proposed and completed the project will have no adverse effect on any historic resources that are listed or eligible for listing in the National Register of Historic Places. The District will include all of VDHR's recommendations as conditions of any permit issued on this project.

Condition 13: Notification. The County submitted a pre-application and two permit applications for the proposed activities and has, therefore, clearly complied with this condition.

Condition 14: Compliance Certification. A compliance certification form, which the County must complete and submit to the Corps within 30 days of completion of the project, will be attached to the Nationwide Permit verification.

Condition 15: Use of Multiple Nationwide Permits. This condition prohibits the use of multiple Nationwide Permits except when the authorized loss of waters of the U. S. does not exceed the acreage limit of the Nationwide Permit with the highest specified acreage limit. With respect to this project, the applicable Nationwide Permit with the highest acreage is Nationwide Permit 39 which authorizes up to ½ acre of impacts to waters of the U. S., including wetlands. The total loss of waters and wetlands proposed by this project is 0.1624 acres (7,074 square feet). Therefore, the work can be authorized by multiple Nationwide Permits.

Condition 16: Water Supply Intakes. This condition does not apply to this project as the applicant is not proposing a water supply intake.

Condition 17: Shellfish Beds. There are no shellfish beds in this portion of the Pamunkey River.

Condition 18: Suitable Material. The proposed fill will consist of clean fill and be free of toxic pollutants in toxic amounts.

Condition 19: Mitigation: The 0.1624-acre permanent fill proposed in waters of the U. S. is associated with the Lee Davis pump station utility line (0.0007 acres of scrub-shrub wetlands) and the wastewater treatment plant (0.1417 acres of forested and scrub-shrub wetlands and 0.0200 acres of waters of the U. S.). The applicant submitted a mitigation plan for 0.82 acres of wetland creation, 7.83 acres of wetland preservation, and 1.31 acres of riparian buffer or to make a voluntary contribution to the Virginia Wetlands Restoration Trust Fund. The District Engineer has determined that either of these mitigation plans would offset the loss to wetlands.

Condition 20: Spawning Areas. This portion of the Pamunkey River is a spawning area for several species of anadromous fish. The project was coordinated with the National Marine Fisheries Service who recommended that no instream work be performed between 15 February and 30 June; that stream bottom contours be restored to their original elevation to prevent the creation of blockages, and that excavated material stored on site be stabilized and contained to prevent sedimentation during storm events. These recommendations have been incorporated into the NWP verification as special conditions.

Condition 21: Management of Water Flows. The project does not involve any activity that will affect pre-construction downstream flows or permanently restrict or impede the passage of normal or expected high flows.

Condition 22: Adverse Effects from Impoundments. The project does not involve any work that will impound water.

Condition 23: Waterfowl Breeding Areas. The project is not located in any known migratory waterfowl breeding areas.

Condition 24: Removal of Temporary Fills. The permit verification has been conditioned to require the removal of all temporary fills.

Condition 25: Designated Critical Resource Waters. The project is not located in any designated critical resource waters.

Condition 26: Fills Within the 100-Year Floodplains. The applicant must comply with any applicable FEMA-approved State or local floodplain management requirements. The gravity sewer line and forcemain associated with the Lee Davis pump station will be constructed within the 100-year floodplain above the headwaters. The diversion structure and manhole will result in a permanent above-grade fill. The Hanover County Department of Public Works has verified that the proposed pump station and its appurtenances meet all of the criteria of the Hanover County Floodplain and Drainage Control Ordinances.

Condition 27: Construction Period. For projects that have been verified by the Corps, an extension of the completion date may be requested. The Nationwide Permit verification will be valid until 18 March 2007. If the County needs additional time to complete any work in waters of the U. S., they must request and be granted an extension.

**c. Special Permit Conditions:** As demonstrated above, the District Engineer has determined that the proposed and completed work satisfies the terms and conditions of Nationwide Permits 7, 12, 18 and 39. Therefore, he has determined that authorization of the proposed work under Nationwide Permits, with the appropriate and applicable special conditions listed below, is not contrary to the public interest.

- Any existing structures associated with the influent pump station will be removed to 4 feet below the ground surface and the area will be filled, graded and seeded.
- VDHR and the Norfolk District shall be notified immediately if human burials are discovered within the project boundaries during project implementation.

- In-stream work for the construction of the outfall structure and diffuser in the Pamunkey River is prohibited from 15 February through 30 June of any year in order to protect the spawning and nursery habitat of anadromous fish species.
- Pamunkey River bottom contours must be restored to their original elevation to prevent the creation of blockages, and any excavated material stored on site must be stabilized and contained to prevent sedimentation during storm events.
- The County shall submit to the Norfolk District plans depicting the method of construction access and installation of the discharge outfall, along with the name of the contractor performing the work and anticipated dates of construction prior to the commencement of work in waters of the U. S.
- The County must submit a report within 30 days of completion of the work to the District Engineer that contains the following information: (1) The name, address, and telephone number of the permittee; (2) The location of the work; (3) A description of the work; (4) The type and acreage of the loss of waters of the U.S.; and (5) The type and acreage of any compensatory mitigation used to offset the loss of waters of the U.S.
- The County shall minimize clearing of the wooded bank on the Pamunkey River to the maximum extent practicable and shall employ appropriate measures to control erosion.
- The Pamunkey River bank shall be re-vegetated with a mixture of herbaceous and woody vegetation appropriate to the site. A re-vegetation plan shall be submitted to the Corps of Engineers, Norfolk District for approval. The plan shall include a list of species, planting rates and a schedule for restoring and re-vegetating the bank. Bank disturbance for site preparation and construction may not proceed until the plan for re-vegetation has been approved by the Corps.
- As the sedimentation basin cannot be used for a mitigation site until construction is completed at the wastewater treatment plant site, the County shall make an in-lieu fee contribution of \$42,759 to the Virginia Wetlands Restoration Trust Fund as compensation for the wetland and intermittent stream impacts associated with this project.
- Future development of the multi-project wetlands mitigation site at the wastewater treatment plant site shall not proceed until the Corps has conducted the required coordination with VDHR for potential adverse effects to historic resources.

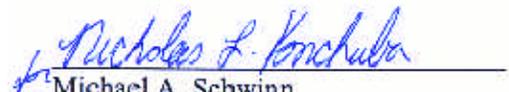
This completes the District Engineer's review of the above activities. His decision is to issue Nationwide Permit verification for the work this date under NWP's 7, 12, 18 and 39.

PREPARED BY:

  
Pamela K. Painter, P.G., P.W.S.  
Environmental Scientist  
Regulatory Branch

4 April 2002  
Date

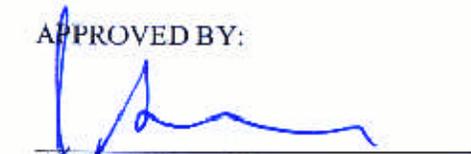
REVIEWED BY:

  
Michael A. Schwinn  
Chief, Western Virginia Regulatory Section

4 April 2002  
Date

FOR AND IN BEHALF OF THE DISTRICT ENGINEER,  
COLONEL DAVID L. HANSEN;

APPROVED BY:

  
J. Robert Hume, III,  
Chief, Regulatory Branch

4 April 2002  
Date