

DEPARTMENT OF ENVIRONMENTAL QUALITY – WATER DIVISION
 FY 2012 APPLICATION FOR VIRGINIA CLEAN WATER REVOLVING LOAN FUND
 WASTEWATER AND STORMWATER PROJECTS

SECTION A - ORGANIZATIONAL DATA

Name of Loan Applicant: Eastern Shore of Virginia Public Service Authority

Applicant Address: P.O. Box 66
Eastville, VA 23347

Contact Person: Katherine H. Nunez, Executive Director

PHONE: 757-678-0440 ext. 19 FAX 757-678-0483 EMAIL knunez@co.northampton.va.us

Name of Consulting Engineer: Hurt & Proffitt, Incorporated

Engineer Address: 2524 Langhorne Road
Lynchburg, VA 24501

Contact Person: Wiley V. "Bif" Johnson, III, PE

PHONE: 434-847-7796 FAX 434-847-0047 EMAIL WWJ@HandP.com

SECTION B - PROPOSED FINANCING

PROJECT FUNDING

a) Amount of VRLF Loan Funds Requested		\$ <u>11,251,066.00</u>
SOURCE	CHECK <input type="checkbox"/> IF COMMITTED	AMOUNT
1) _____	<input type="checkbox"/>	\$ _____
2) _____	<input type="checkbox"/>	\$ _____
3) _____	<input type="checkbox"/>	\$ _____
b) Total Other Funding Available (1 + 2 + 3 ...)		\$ <u>0.00</u>
c) Total Project Cost (a + b)		\$ <u>11,251,066.00</u>

5 YEAR CASH FLOW NEEDS PROJECTION (LOANS OF \$10,000,000 OR MORE)

If the Amount of VRLF Loan Funds Requested (*line a above*) is \$10,000,000 or greater, provide a realistic projection of your cash flow needs from this loan over the following calendar years. (*Should add up to the amount of the total loan request in line a*)

	2011	2012	2013	2014	2015
\$	\$0	\$ 1,350,128	\$ 4,950,469	\$ 4,950,469	\$ 0

TYPE OF SECURITY

CHECK THE BOX BESIDE THE TYPE OF SECURITY APPLICANT ANTICIPATES PROVIDING

- Pledge of Revenue of the Sewer System Only
- Pledge of Revenue of Water and Sewer System
- General Obligation of the Locality

SECTION C - WATER QUALITY DATA

Location of Project Longitude Exmore - 75.83 Degrees West Latitude 37.55 Degrees North

(Longitude and Latitude of project is a required entry on this application)

NPDES Permit Number: VA NA
Name of Stream to which flow is, or will be discharged NA
River Basin for Receiving Stream NA

SECTION D - BRIEF PROJECT DESCRIPTION AND STATEMENT OF NEED

Please include a description of Treatment units, capacities of treatment works, sizes and respective lengths of sewer line, new service being provided, system upgrade and/or expansion, Rehabilitation etc. Describe the need for the proposed project. Needs should be in areas of restoring, protecting or preventing pollution in State waters. Reference and attach all pertinent documentation, i.e.: noncompliance letters from regulatory agencies, Consent or Special Orders, documentation of public health concerns, etc.

(attach additional pages if necessary)

This project is a potential multi-phased project with Phase I focused on the establishment of collection system for the Town of Exmore through a vacuum system that will convey the wastewater to a single vacuum station, requiring 14,038 feet of 4" - 8" low pressure main lines. At this point, the wastewater will be pumped via force main to the treatment plant site south of Nassawadox, requiring 36,300 feet of 6" - 8" force mains. Along the force main route and in Nassawadox, individual low pressure grinder pumps will discharge to the force main from Exmore and will be conveyed further to the treatment plant. The collection system will allow connections of the existing medical campus and some future connections for the Town of Nassawadox and the county areas between Exmore and Nassawadox known as Hare Valley. The project will serve an estimated 421 equivalent residential connections in the initial service area.

The treatment method selected is a packed bed filter, FAST. The treatment facility will be located south of Nassawadox and will provide a septage receiving station, ultraviolet disinfection, and sludge dewatering. (Add. pg)

SECTION E - DEMONSTRATION OF ANY EXTRAORDINARY NEEDS

Describe any extraordinary trends and/or conditions such as reduction or loss in tax base and/or revenues, high utility cost, etc., which should be taken into consideration by reviewing agency.

(attach additional pages if necessary)

This project is the culmination of a dedicated regional effort involving the County and 4 of its incorporated towns to examine and develop plans to provide wastewater solutions for the areas of need in the County and incorporated towns. We have recognized that a regional effort involving county areas and one or more incorporated towns is the only means of developing a service area with sufficient population that is afflicted with similar environmental limitations and challenges and faced with significant financial limitations that impact the development and delivery of services.

The environmental conditions described below require attention but must be addressed in a manner that recognizes the financial limitations that exist in the service area as well as the County generally. Following is a summary of critical factors considered in developing the project, both environmental and economic: (continued on attached pages)

SECTION D – BRIEF PROJECT DESCRIPTION and STATEMENT OF NEED

A Component of this project is providing service to the medical campus located in Nassawadox, including Shore Memorial Hospital, Heritage Hall Nursing Home, and other medical facilities. Currently, these medical facilities are serviced by a wastewater treatment plant that discharges into Warehouse Creek under the private ownership of Shore Health Services, Inc. This treatment plant has significant operating issues; needed improvements are necessary to maintain the system but those improvements are costly; and it actively discharges into Warehouse Creek. In addition, this system participates in a nutrient exchange program due to the inability to meet discharge limits. This regional project would provide an alternative for Shore Health Services, Inc. in the provision of wastewater treatment and would allow them to cease operations of their system, including the termination of discharge into Warehouse Creek.

GROUND WATER RESOURCES

Ground water is the only source of supply for domestic use in Northampton County. Water used in industrial and agricultural operations is supplied from groundwater and surface waters.

In 1976 the Virginia State Water Control Board designated the Eastern Shore of Virginia, including Northampton County, as a “Ground Water Management Area.” The purpose of this action was to protect the groundwater from localized groundwater contamination and prevent the limited aquifer sources from being overdrawn. The Eastern Shore of Virginia Groundwater Committee was formed in 1990 and adopted the “Groundwater Supply Protection and Management Plan for the Eastern Shore of Virginia” in 1992. An update of this plan is in progress but has not been fully completed and adopted at this time. The purpose of this plan is to make recommendations for the protection and management of the groundwater resource. In 1997 the entire Eastern Shore of Virginia was designated a “Sole Source Aquifer System” by the U.S. Environmental Protection Agency.

Preliminary analysis of the proposed project area, located in the northern part of the county in the Exmore-Nassawadox area, has indicated that implementation of centralized wastewater treatment could eliminate over 421 septic tank and drainfield systems. Therefore, one of the goals this project will accomplish is to protect the fragile aquifer from increasing pollution that may result from failing septic systems.

GROUNDWATER

The two major components of the Eastern Shore groundwater system are the shallow Columbia aquifer and the deep Yorktown-Eastover aquifer. The shallow aquifer is recharged by 12 to 24 inches per year of rainfall out of the total 43 inches per year of rainfall that falls in the county. Most of this water flows from the middle of the peninsula and discharges to the Chesapeake Bay or the Atlantic Ocean providing an important source of fresh water for the tidal creeks and bays.

This aquifer is used primarily for private on-site domestic wells and agricultural irrigation. Approximately 2 million gallons per day are withdrawn from this aquifer by private on-site wells for domestic use. The continued use of this source for drinking water supply is limited in many areas due to pollution from agricultural runoff and septic system failure. Although this aquifer may become increasingly more contaminated with future development from a number of factors, the elimination of large numbers of septic tank systems in concentrated development areas at this time will remove a significant source of potential pollution. It will also decrease the pollution level of the water in this aquifer that ultimately reaches the tidal creeks and bays. This pollution level is characterized by high nitrate levels primarily associated with drainage from septic systems and overuse of fertilizers.

The majority of water for domestic consumption in the County comes from the deep wells that tap the Yorktown-Eastover aquifer system. There is evidence that this aquifer

SECTION E – DEMONSTRATION OF ANY EXTRAORDINARY NEEDS, Continued

could become contaminated as future development occurs due to the fact that this lower aquifer is recharged to some degree by the upper Columbia aquifer. Increased pumping over time in the lower aquifer will increase the vertical recharge of this aquifer and may induce the vertical flow of pollutants where wastes are located within a large cone of depression.

One of the immediate benefits from this project is the elimination of a source of groundwater pollution by removing over 421 septic tank and drainfield systems, which are a source of groundwater pollution on the Eastern Shore. It will also prevent additional septic tank and drainfield systems from being installed in the concentrated growth areas in and around the towns where this project proposes to provide service.

NASSAWADOX SEWAGE TREATMENT PLANT

This system is owned by Shore Health Services, Inc. and is being operated under VPDES Permit VA0027537 and discharges into Warehouse Creek. Shore Health Services, Inc. is the operating entity of the local hospital, known as Riverside Shore Memorial Hospital. This system also provides service for the local nursing home, the cancer center and several other related medical facilities. This plant is an extended aeration type facility permitted for 100,000 gallons per day. Current average flows to the facility are approximately 45,000 gpd and the facility has not been operating satisfactorily for an extended period of time. Some maintenance, including replacement of the in-stream communitor, and structural repairs to the aeration lagoon are required. The existing treatment plan lacks nutrient removal capacity and would require an upgrade in the future to meet nutrient removal limits. Currently, the facility owner participates in a nutrient exchange program due to the inability to meet discharge limits.

Our project would allow Shore Health Services, Inc. to cease its operations of its sewage treatment plant, including its discharge into Warehouse Creek (a Chesapeake Bay tributary). While Shore Health Services, Inc. has recently announced its intentions to move the hospital to Accomack County within the next five years, there will still be significant medical facilities remaining at this location who utilize the Shore Health Services treatment plan that justify and support the need for a regional wastewater solution as our project provides.

SEPTIC SYSTEMS

Public sewer as of 1990 serves less than 15% of the housing units in the County. The remaining units are served by septic tank and drainfield systems, cesspools, pit privies or alternative on-site systems. With the combination of a large number of conventional septic systems and the poor soils in much of the county, these systems are suspected to be a major source of groundwater pollution. The sandy nature of the Eastern Shore soils coupled with typically high water tables that allow septic tank drainfield effluent to rapidly reach groundwater aquifers without adequate treatment results in high nitrate levels in the groundwater table. This causes bacterial and nutrient contamination of bay

SECTION E – DEMONSTRATION OF ANY EXTRAORDINARY NEEDS, Continued

or seaside waters if adjacent to those waters. This project will reduce the potential of pollution of the delicate aquifer by bacterial and nutrient contamination.

POPULATION

County population and growth data provides an essential foundation for planning of capital improvements, including, among other things, water and sewer facilities. Significant population trends revealed in this data indicate:

- The County's population declined by 5.4% between 2000 and 2010, compared to a growth rate for Virginia of 13.03% for the same period.
- There was an increase in the median age of citizens in the County, from 37.9 years in 1990 to 42.4 years in 2000. This was well above the median age in Virginia in 2000 of 35.7 years. The Census Bureau has estimated that in 2008 20.4% of the County's residents were aged 65 years or older compared to 12.1% of Virginia's residents.
- The County appears to be experiencing an increase in seasonal population.
- There was a significant decrease in the population between the ages of 25 to 34 during 1990-2000, which, coupled with a declining school-age population, suggests an out-migration of young families in search of either work or housing. During the same period there was an increase in the population in ages 35-54 which reflects the aging of the adult population.
- The 2010 Census revealed that the largest population growth in the County occurred in the Town of Exmore, increasing from 1,136 residents to 1,460 residents or a 28.5% increase. However, the County overall experienced a population decrease of 704 individuals, bringing our total population to 12,389. This was a 5.4% reduction in population overall.

The improvements to housing stock and development of a commercial center in the Town of Exmore provides a rationale for the increased population in this area; nevertheless, these developments have not been significant enough to allow the County population to remain stable or even to grow.

The extremely low growth rate of the overall population and the significant decrease in the number of residents aged 25 to 34 suggest that more new jobs need to be created in the County to reverse the out-migration of families from the County.

The implementation of this project would be expected to bring new economic benefits to the County by providing needed infrastructure to serve new and existing businesses, which in turn would be expected to provide more opportunities for the working population.

ECONOMIC ANALYSIS

The County has traditionally had a low rate of unemployment with the exception of 2009 and 2010 which experienced a higher than normal unemployment rate as a factor of the overall economic conditions of the country. Virginia Employment Commission data, based on the 2000 Census, indicate that there are more in-commuters than out-commuters in the County workforce. The construction, hospitality, resort maintenance and health care industries are dependent to some extent on imported workers. The average annual wages in Northampton County are well below the statewide average.

Based on some of the more significant economic factors there is a strong relationship between the economy and environmental quality:

- The largest major industry sector in the County is Agriculture, Forestry, Fishing and Hunting. This accounts for approximately 32% of the employment in the County.
- The Agriculture sector is increasing both in number and in the market value of production while the average farm size is decreasing.
- The Aquaculture industry is significantly increasing in gross revenue with more emphasis on farming of fish and shellfish as opposed to harvesting them from the sea. It is therefore important to minimize any degradation in water quality by avoiding to the fullest extent possible any land-based activity that would cause negative impacts on this industry.
- Tourism is another industry that should be protected in the planning of any project. The undeveloped stretches of pristine coastline and the traditional rural and marine-based lifestyles offer a significant attraction to this area.
- Other significant industries in the County that should be considered in the planning process for utilities are Retail Trade, Accommodations and Food Services and Manufacturing. These industries combined amount to 24% of employment in the County.

Implementation of the proposed project will serve to help protect the water resources that are vital to the tourism and aquaculture industries. The project will also provide infrastructure needed for continued operation and expansion of existing commercial and industrial operations in designated County growth areas where natural soil conditions are a limited factor for the installation of adequate individual wastewater treatment facilities. The presence of centralized wastewater treatment facilities would also serve to foster clustering of development, thereby preserving agricultural, open space and the rural character of the County.

One significant benefit from this project is the reduction of significant pollution in the groundwater aquifer by providing a high degree of treatment to the sewage being generated in this concentrated growth area of the County before wastewater enters the ground.

UTILITY COSTS AND ABILITY TO PAY

The median household income (MHI) for Northampton County in 2009 was \$34,501. This is 58% of the MHI for Virginia as a whole, which is \$59,372. This demonstrates a very limited ability for the residents in this area to afford central water treatment systems. Guidelines from federal agencies would indicate that the affordable rate per month for the local MHI would be \$43. Financial analysis of the project cost indicate the need for a significant amount of grant money and low interest loans for this project to become financially feasible for the residents of the area.

Our financial analysis clearly shows that this project is not sustainable without grant assistance or loan forgiveness programs, minimally at a level of 65% of the project cost or \$7.3 million, in order to achieve a monthly use rate within the guidelines. Without that type and level of assistance, Northampton County and this project area does not have the financial wherewithal to advance this project.

SECTION F - READINESS-TO-PROCEED

PROJECT STATUS

Status of Preliminary Engineering Complete

Status of Environmental Review Not Complete

If the Environmental Assessment is complete provide items 1) and 2) below

1) Name of clearance and issuing agency _____

2) Date issued _____

Status of Final Plans & Specifications Incomplete

ANTICIPATED SCHEDULE

<i>Schedule Item Description</i>	<i>Date</i>
a. Submittal of Final Plans	<u>March 2012</u>
b. Plans and Specs Approved (VHD/DEQ)	<u>April 2012</u>
c. Advertise for Bids	<u>June 2012</u>
d. Award Contracts	<u>August 2012</u>
e. Estimated Construction Time	<u>18</u> (expressed in months)

SECTION G - STATISTICAL DATA

SEWER USERS

SERVICE AREA JURISDICTIONS	NUMBER OF EXISTING RESIDENTIAL SEWER CONNECTIONS	NUMBER OF PROJECTED RESIDENTIAL SEWER CONNECTIONS AT COMPLETION OF PROJECT
Northampton County/Exmore/Nassav	0	421

Existing Wastewater Treatment Flows (gpd) _____

% Domestic Flow _____

% Industrial/Commercial Flow _____

Existing Average Monthly Charge Per Household for Sewer \$ _____ **Attach Currently Approved Sewer Rate Schedule**

Average Residential Connection Fees for Sewer \$ _____

When were rates last increased? Date of Increase _____

Details of Rate Increase _____

SECTION H - PROJECT BUDGET INFORMATION

Administration Expense	\$	728,403	
Land, right-of-way	\$	300,000	
Architectural Engineering Basic Fees	\$	597,287	
Project Inspection Fees	\$	182,100	
Other (Explain) _____	\$		
Treatment Plant Construction	\$	2,922,011	
Interceptor Line Construction	\$	774,954	
Collector System Construction	\$	5,501,707	
I & I Rehabilitation	\$	0	
Equipment Purchase/Installation	\$	0	
Contingencies	\$	900,167	
TOTAL			\$ 11,251,066

SECTION I - FINANCIAL DATA

ANNUAL OPERATION, MAINTENANCE & REPLACEMENT COST (O, M & R) FOR PROPOSED SEWER FACILITIES

a) Labor	\$	50,000	
b) Utilities	\$	23,517	
c) Materials	\$	42,520	
d) Miscellaneous Expenses	\$	42,520	
e) Equipment Replacement	\$	9,450	
f) Other _____	\$	133,994	
g) TOTAL O, M & R COST FOR PROPOSED SEWER FACILITIES			\$ 302,001

ESTIMATED TOTAL ANNUAL FACILITIES COSTS (SEWER FACILITIES ONLY)

Existing + Proposed Sewer Facilities Only - Exclude water operation cost.

h) Net O, M & R (for existing facilities)	\$	0	
i) Existing Annual Debt Service	\$	0	
j) O, M & R for Proposed Facilities (from line g)	\$	302,001	
TOTAL ESTIMATED ANNUAL FACILITIES COST (h+i+j)			\$ _____

SOURCES OF REVENUES AS A PERCENTAGE OF TOTAL ANNUAL SEWER REVENUES

Residential Share 49.0 % Non-Residential Share(Industrial/Commercial) 51.0 % *

*this is composed of commercial/industrial septage receiving fees and contribution from medical community

SECTION J
(FOR ALL PROJECTS REQUESTING CONSIDERATION FOR GREEN RESERVE PROJECT FUNDING)
DESCRIPTION OF HOW PROJECT RELATES TO
WATER EFFICIENCY/REUSE - ENERGY EFFICIENCY - GREEN INFRASTRUCTURE- ENVIRONMENTAL
INNOVATION

Please include a description of how project relates to Water Efficiency/Reuse, Energy Efficiency, Green Infrastructure and/or Environmental Innovation.

(attach additional pages if necessary)

SECTION K – REQUIRED FOR ALL STORMWATER MANAGEMENT PROJECTS

Has loan applicant adopted a dedicated source of revenue to implement a stormwater control program in accordance with §15.2-2114 ? *(If so, attach program documentation)* YES NO

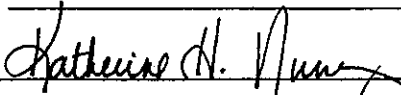
Is the loan applicant subject to an MS4 discharge permit in accordance with §10.1-603.2.2 ? YES NO

Has the loan applicant adopted a stormwater management program in accordance with Article 1.1 (§10.1-603.1 et seq.) of Chapter 6 of Title 10.1 ? YES NO

SECTION L - ASSURANCES AND CERTIFICATIONS

The undersigned representative of the applicant certifies that the information contained herein and the attached statements and exhibits are true, correct and complete to the best of their knowledge and belief. The undersigned also agrees to clarify or supplement information pertaining to this application upon request.

CHIEF ADMINISTRATIVE OFFICER OF APPLICANT

Name Katheirne H. Nunez
 Title Executive Director for the ESVA Public Service Authority
 Signature  Date July 14, 2011

SECTION M - REQUESTED ATTACHMENTS

- I. Attach one copy of the Latest Interim (unaudited) Financial Statement
- II. Attach two copies of the current year budget
- III. Attach current rate schedule for water and sewer rates
- IV. Attach listing of 10 largest users of sewer system and of water system (reference page 3)