

PERTAINING TO THE AMENDMENT OF THE CALVERT COUNTY COMPREHENSIVE
WATER AND SEWERAGE PLAN, 2011 UPDATE, TO DECOMMISSION THE EXISTING
WWTP AND PUMP WASTEWATER FROM HUNTINGTOWN HIGH SCHOOL TO
MARLEY RUN WWTP AND DECOMMISSION THE EXISTING WWTP AND PUMP
WASTEWATER FROM INDUSTRIAL PARK TO PRINCE FREDERICK WWTP #1
(WSTA #13-1).

WHEREAS, pursuant to the authority contained in Title 9, Subtitle 5 of the *Environment Article* of the Maryland Annotated Code, the Board of County Commissioners of Calvert County, Maryland has general powers to adopt and amend a County plan addressing water supply systems and sewerage systems and has heretofore adopted the Calvert County Comprehensive Water and Sewerage Plan, 2011 Update;

WHEREAS, the Calvert County Planning Commission discussed the proposed text amendment (WSTA #13-1) to the current Calvert County Comprehensive Water and Sewerage Plan on February 20, 2013 and found that it was in compliance with the County's Comprehensive Plan and made a recommendation to the Board of County Commissioners concerning the proposed amendment;

WHEREAS, after due notice was published, the Board of County Commissioners conducted a public hearing on March 26, 2013, at which time the proposed amendments were discussed, staff's recommendations were considered, and public comment was solicited; and

WHEREAS, after considering the evidence which had been presented at the public hearing regarding the proposed amendments and the recommendation of the Planning Commission, and in furtherance of the public health, safety and welfare, the Board of County Commissioners of Calvert County, Maryland determined it is in the best interest of the citizens of the County to adopt the recommended amendments to the Calvert County Comprehensive Water and Sewerage Plan as set forth in Exhibit A, attached hereto and made a part hereof.

NOW, THEREFORE, BE IT ORDAINED by the Board of County Commissioners of Calvert County, Maryland, that the text amendment to the Calvert County Comprehensive Water and Sewerage Plan, 2011 Update, WSTA #13-1, included in Exhibit A attached hereto and made a part hereof, **BE**, and hereby **IS, APPROVED** and **ADOPTED**;

BE IT FURTHER ORDAINED by the Board of County Commissioners of Calvert County, Maryland that the Calvert County Comprehensive Water and Sewer Plan shall otherwise remain in full force and effect;

BE IT FURTHER ORDAINED by the Board of County Commissioners of Calvert County, Maryland that the foregoing recitals are adopted as if fully rewritten herein;

BE IT FURTHER ORDAINED by the Board of County Commissioners of Calvert County, Maryland that, in the event any portion of the Calvert County Comprehensive Water and Sewer Plan is found to be unconstitutional, illegal, null or void, it is the intent of the Board of

County Commissioners to sever only the invalid portion or provisions, and that the remainder of the Comprehensive Water and Sewer Plan shall be enforceable and valid; and

BE IT FURTHER RESOLVED by the Board of County Commissioners of Calvert County that this enactment shall be effective upon approval of the Maryland Department of the Environment pursuant to Section 9-507 of the *Environment Article* of the Maryland Annotated Code.

DONE, this 26th day of March, 2013, by the Board of County Commissioners of Calvert County, Maryland, sitting in regular session.

Aye:	<u>All</u>
Nay:	<u>Ø</u>
Absent/Abstain:	<u>Ø</u>

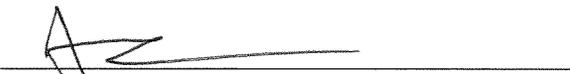
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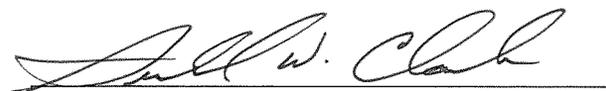
BOARD OF COUNTY COMMISSIONERS OF CALVERT COUNTY, MARYLAND


Maureen L. Frederick, Clerk


Pat Nutter, President

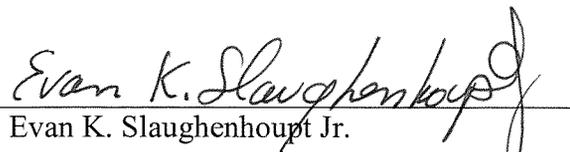
Approved for form and legal sufficiency on April 11, 2013 by:


Steven R. Weems, Vice-President


Gerald W. Clark


John B. Norris, III, County Attorney


Susan Shaw


Evan K. Slaughenhoupt Jr.

Received for Record.....4/17.....2013
at 9:59 o'clock.....A M. Same day
recorded in Liber KPS No. 42
Folio 88.....COUNTY COMMISSIONERS
ORDINANCES AND RESOLUTION.



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D. WATER AND SEWER GOALS AND ACTION PLAN

To implement the goals and objectives of the Comprehensive Plan, a Goals and Action Plan list was developed as part of this Water and Sewerage 2011 Update. The Plan calls for the following:

Water Goal – Maintain a potable and adequate supply of water.

Action Plan: (Please refer to Chapter Three for more details on the planning for water service.)

Actions	
I-120	Continue to use the Calvert County Water and Sewerage Plan as a water resources management implementation document for the Calvert County Comprehensive Plan. [BOCC, CP&B, PW]
I-121	Update the Water and Sewerage Plan data every year and conduct a thorough review every three years. [CP&B, PW]
I-122	Urge the state to conduct groundwater studies to get a better understanding of regional and statewide water consumption and recharge area protection issues as called for in the state's Wolman Report (to view report, go to http://www.mde.state.md.us/programs/Water/Pages/water/wolman_report.aspx). [BOCC]
I-123	If state studies are not conducted, then every six years (or comprehensive plan cycle) work with the Southern Maryland counties to update the aquifer study. [BOCC]
I-124	Continue to urge residents to consume less water. Maintain an education program to prevent waste of water. Establish a progressive surcharge for excess use of water in public water systems for residential uses. Continue to require the use of water saving equipment in all new development and redevelopment. (For systems operated by Calvert County, or within the County, not within the Municipalities which have separate plans.) [PW]
I-125	a. Continue to monitor water quality issues and be proactive in ensuring that the water is safe to use. [CP&B, PW]
	b. Implement procedures to reduce the naturally occurring arsenic in the public water systems to levels that do not exceed the EPA's maximum contaminant level. [PW]
I-126	Review the Water Resources Element every six years and, if necessary, update or refine the analysis. [CP&B]

Sewerage Goal – Reduce the impact of wastewater on the environment.

Action Plan: (Please refer to Chapter Four for more details on the planning for sewerage service.)

Actions	
I-127	Require new wastewater treatment systems to be land application systems and explore other beneficial ways of reusing wastewater. [BOCC]
I-128	Continue the policy of restricting new sewerage service areas for multiple users to Priority Funding Areas, except for connection to septic failure areas. In those cases, only connect to existing developed lots. [BOCC]
I-129	Develop and/or update wastewater capacity management plans for all County owned or operated community sewerage systems. [PW]
I-130	Estimate the approximate number of additional households and the associated commercial and industrial development and approximate quantity of additional wastewater capacity needed to support projected growth in the priority funding areas. [PW, CP&B]
I-131	Work with the Board of Education to upgrade the Northern High School Treatment Plant. [PW]
I-132	Plan for expansion of the Prince Frederick Wastewater Treatment Plant #1. [PW]
I-133	Connect Huntingtown High School to the Marley Run Wastewater Treatment Plant and decommission the on-site wastewater treatment facility at the school. (PW)
I-134	Connect the Calvert County Industrial Park to Prince Frederick Wastewater Treatment Plant #1 via a pumping station and force main, and decommission the Calvert County Industrial Park Wastewater Treatment Plant. (PW)

Public Facilities and General Services –Provide public facilities to support planned growth

Actions	
IV-24	Be proactive in the development of infrastructure in town centers as called for in town center master plans. [F&B, GS]
IV-25	Permit community or shared water and sewer in all town centers when needed to support environmental health and/or to support County-identified economic development goals, when and if cost effective and economically feasible. [CR]

E. ORGANIZATION OF AGENCIES AND COMMISSIONS RESPONSIBLE FOR PLAN DEVELOPMENT, ADMINISTRATION AND IMPLEMENTATION

Several agencies and commissions at various levels of government are included in the

Boats can also be a source of human waste. Nearly all County marinas have pump-out facilities and on-land bathroom facilities, to prevent boat owners from discharging waste from boats. The local Health Department is encouraging the remaining small operators to come into compliance with the use of state grants.

D. PRESENT AND PROJECTED SEWAGE DEMANDS AND PLANNED CAPACITIES

As mentioned, the majority of County residents are not served by community sewerage systems. Most residents of the County use on-site sewerage disposal systems.

Where an area is scheduled to be provided with sewerage service, scattered or low density development should be discouraged for reason of inefficient public servicing. A concentration of development usually can be serviced in the least expensive and most efficient manner. For example, multi-unit housing can accommodate a large portion of the market demand for moderate rentals and/or moderate cost ownership, and such development in or near town centers could be serviced from expansion of existing sewerage facilities much easier than scattered single family houses. Likewise, town centers, industrial parks and office parks are preferable to strip commercial development since the latter is inefficient to service.

The provision of community water and sewerage service can be instrumental in directing growth away from sensitive areas and to land better suited for development. A policy for servicing the highest priority areas could help reduce development costs, public servicing costs, and raise the County's environmental standards. Projections of sewerage service demands and sewerage service capacities are shown in Table 9.

The future design capacities may be adequate to accommodate the residential build-out limit of 37,000 households as called for in the Comprehensive plan. Currently, the County is at 31,000 households, leaving 6,000 to be constructed.

**Table No. 9
Present and Projected Sewerage Demands and Planned Capacity**

SERVICE AREA	Present (2011)						Projected (2020)					
	Population (Residential) ¹			GPCD (gals)	Capacity		Population (Residential) ¹			GPCD (gals)	Capacity	
	Total	Served	Unserved		Demand	Planned ²	Total	Served	Unserved		Demand	Planned ²
Calvert Cliffs Nuclear Power Plant ³	0	0	0	11	12,640	66,500	0	0	0	11	12,640	66,500
Calvert County	0	0	0	-	16,000	30,000/	0	0	0	-	-	-

1 Differences between the "Population (Residential) Served" for the same systems shown on both Table 3 and Table 9 are due to the fact that properties exist where connections were made to the public water supply systems but remained on private septic systems.

2 2010 "Planned Capacity" shown is equal to the most recent Maryland Department of the Environment Discharge Permit Limit (annual average daily flow limit) followed by the actual plant design or rated flow capacity, unless otherwise noted. 2017 "Planned Capacity" shown is equal to the projected plant design flow capacity.

3 Prior data projections for year 2000, source unconfirmed, left unchanged.

Industrial Park						60,000						
Chesapeake Bch. Inter-jurisdiction ¹	2	9,750	⁵	75	850,000	1,180,000/ 1,180,000 ³	⁵	11,500	⁵	75	1,000,000	1,500,000
Chesapeake Bch. Municip.	-	5,070	-	85	517,000	-		5,675	-	85	580,000	-
North Beach Municipality	-	2,050	-	58	134,500	-		2,300	-	58	150,750	-
Calvert Co. (Twin Beaches, Ches. Lgt.hse.)	-	1,540	-	69	113,300	-		1,725	-	69	127,000	-
Anne Arundel Co. (Rose Haven)	-	1,090	-	71	85,200	-		1,220	-	71	95,500	-
Huntingtown High School	-	1,550	-	2	2,400	11,000/ 11,500						
Marley Run	0	155	0	70	11,000	15,000/ 15,000	0	1,950	0	70	30,000	40,000
Naval Ordnance Lab, Solomons	<i>Served by the Solmons Island Sanitary District</i>											
Naval Res. Facility, Randle Cliff	0	0	0	80	30,000	75,000	0	0	0	80	30,000	75,000
Northern High School	-	1,725	-	10	17,000	40,000/ 40,000	-	1,750	-	10	17,500	40,000
Prince Frederick Sanitary District	⁵	2,775	⁵	70	440,000	750,000/ 750,000	⁵	5,500	⁵	70	898,000	1,310,000
Solomons Island Sanitary District	⁵	3,000	⁵	67	335,000	700,000/ 1,017,000	⁵	5,400	⁵	67	603,000	1,250,000

E. DEMAND AND DESIGN MODIFICATION (SEWAGE)

Demand modification in the context of sewerage facilities has many of the same economic and environmental considerations that have been discussed in the preceding chapter dealing with water facilities. A large number of residents of Calvert County depend upon individual sewerage treatment systems and there will be continued heavy reliance on individual systems in the future. While proper design and maintenance of individual septic systems may extend their operational life, numerous problems may be associated with improperly functioning septic systems.

Steps may be taken to modify the quality of influent a septic system must handle. For example, a reduction in the amounts of harsh detergents or volume of water may extend septic system life. However, in some cases the nature of the soil or the water table may mean that continual septic system problems can be expected. One remedy for such problems is construction of a community sewerage system, but where population densities are low this is an expensive last resort.

Several innovative sewage treatment systems have been developed and are being approved by

1 "Population (Residential) Served" is based on average household size of 2.8 persons per dwelling in 2000 Census for Twin Beaches. "Planned Capacity" shown pertains to all four flow contributing jurisdictions.
 2 Data confirmation in progress at the time of current plan update finalization, final data to be provided in the next plan update.
 3 Projects in progress as of July 2010 to increase WWTP capacity to 1,500,000.

the Maryland Department of the Environment which may offer a less expensive remedy than a traditional community system. Most of these experimental systems accelerate the biological breakdown and nitrogen removal by aeration, mixing and other techniques before discharging into a drainage field. Some of these systems include redesigned effluent discharge fields which may operate satisfactorily even in areas where high water tables are present. In large residential areas, it is possible to design systems that serve only problem areas.

As alternative individual systems are more thoroughly tested and proven, steps should be taken at the State and local levels to make provision for their use in areas where they are a viable remedy to existing problems. In addition, if such systems are proven to be superior to conventional septic systems, steps should be taken to initiate their general use in areas not served by community sewage treatment systems, particularly in the critical area.

In 2004, the state adopted new fees for septic systems and community sewer systems with the revenues to go toward reducing nutrients that enter the Bay. The County is using state grants to install nutrient reduction systems in the critical area.

F. EXISTING SEWAGE SYSTEMS

Calvert County has eight existing community sewerage systems identified on the Sewer Plan Map and are described below:

1. Chesapeake Beach Inter-jurisdictional System:

The Chesapeake Beach Municipal System was initially built in 1969. This WWTP was modified through a series of upgrade projects in 1982, 1991 and 1999. This plant was upgraded to 1.0 million gallons per day (MGD) in 1991 and tertiary treatment was implemented. In 1999, the WWTP was approved for expansion up to 1.5 million gallons per day. In 1999, as part of the Biological Nutrient Removal (BNR) upgrades, the Chesapeake Beach WWTP increased its capacity to 1.180 MGD, the current permitted capacity, and implemented tertiary treatment. The plant uses "oxidation ditches" to perform biological nitrogen removal. Phosphorus reduction is accomplished by chemical precipitation. The facility has stand-by methanol feed in case the de-nitrification process requires additional carbon. The facility is designed to meet a 7 milligram per liter total nitrogen limit during the spring, summer and fall months.

Treated effluent discharged into the Chesapeake Bay by means of a 30-inch gravity pipeline that extends into the Chesapeake Bay to a point approximately 200 feet from the seawall in July 2007.

Sludge produced is mechanically dewatered and transported to the King George Landfill in Virginia, where it is reported to be beneficially used as supplemental landfill cover.

The Chesapeake Beach Wastewater Treatment Plant services all portions of the Towns of Chesapeake Beach and North Beach, part of Calvert County outside the municipalities (referenced as "Twin Beaches", as well as the Chesapeake Lighthouse) and portions of Anne Arundel County (Rose Haven and Holland Point). The Chesapeake Beach WWTP land and equipment is owned and operated by the Town of Chesapeake Beach. The

capacity of the facility is jointly-owned by the Town of Chesapeake Beach, the Town of North Beach, and Calvert County. The "Chesapeake Beach Interjurisdictional Agreement" was finalized in 1980 and amended in 1989, 1996 and 2011.

All fixed expenses (non-variable), including capital project costs, incurred in the operation and maintenance of the Chesapeake Beach WWTP are proportionally shared by the respective parties to the interjurisdictional agreement. Each jurisdiction received a fixed allocation (or percentage) of the total treatment plant design capacity of 1.18 MGD based on each jurisdiction's then agreed upon required capacity for anticipated ultimate flow contribution. This allocation is referred to as a number of "taps" (or "EDU's" or "capital connections"), whereby one tap is equal to 200 GPD. According to this agreement, the flow allocation breakdown is as follows:

<u>Jurisdiction</u>	<u>Allocation [Flow in GPD (# of Taps)]</u>	<u>Percentage</u>
Calvert County	302,325 (1,512 Taps)	25.6%
North Beach	250,200 (1,251 Taps)	21.2%
Chesapeake Beach	489,975 (2,450 Taps)	41.5%
<u>Anne Arundel</u>	<u>137,500 (550 Taps)</u>	<u>11.7%</u>
Total Flow	1,180,000 (5,763 Taps)	100.0%

A project identified as the "Chesapeake Beach ENR Upgrade & Reconstruction" project consists of the replacement and upgrade of existing equipment and ENR modifications to the treatment plant. The scope of the ENR Upgrade & Reconstruction project consists of a replacement of remaining deteriorated equipment and rehabilitation of infrastructure at the end of its useful life and modifications to enable the plant to meet the ENR limits for effluent. The ENR Upgrade design is scheduled for completion in March 2016.

2. Prince Frederick:

The original Prince Frederick Wastewater Treatment Plant (located on Tobacco Ridge Road in Prince Frederick) was placed in operation in 1973 with the treated (tertiary) effluent directly discharging into Parkers Creek. This original plant was taken off line subsequent to the completion of the construction of a new wastewater treatment facility located on Sugar Notch Lane in Barstow in April of 1991. The replacement facility, referenced as Prince Frederick Wastewater Treatment Plant #1, utilized aerated lagoon system treatment technology and slow rate land application (spray irrigation) of treated effluent, rated at a capacity of 450,000 gallons per day. The treated effluent is delivered to approximately 100 acres of spray irrigation fields, split up into 5 fields to allow for rotation and drying time where the treated effluent is land applied. This facility eliminated the original Prince Frederick Wastewater Treatment Plant's direct discharge into Parkers Creek.

Subsequently in September 2002, construction was completed on the Prince Frederick Wastewater Treatment Plant #2 on the site of the original decommissioned Prince Frederick Wastewater Treatment Plant on Tobacco Ridge Road utilizing BNR (Biological Nutrient Removal) technology. This new facility provided additional wastewater

capacity for the Prince Frederick Sanitary District with a rated capacity of 300,000 gallons per day. This plant is a Sequencing Batch Reactor (SBR) system utilizing the activated sludge treatment process and slow rate land application (spray irrigation) for discharge of the treated effluent. The treated effluent is delivered to approximately 70 acres of spray irrigation fields, split up into 14 fields to allow for rotation and drying time when the treated effluent is land applied. The construction of an 18 million-gallon storage/holding pond on 4 acres, with an additional 3.8 million gallons of emergency storage, provides 60 days of additional wet-weather effluent holding space. The facility is located approximately 7 miles east of Prince Frederick Wastewater Treatment Plant #1. Approximately 18 dry tons of sludge is transported per week to the Appeal Landfill for collection, loading, transportation and ultimate disposal at an out-of-state landfill in Virginia, and is reported to be beneficially used as supplemental landfill cover.

Prince Frederick Wastewater Treatment Plants #1 and #2 are interconnected via a force main that allows these facilities to work in tandem providing a combined capacity of 750,000 gallons per day of sewage disposal for the Prince Frederick customers. Prince Frederick Wastewater Treatment Plants #1 and #2 service the Prince Frederick, Dares Beach, and Industrial Park Sanitary Districts.

3. Solomons Island:

The Solomons Island WWTP currently has 1.052 MGD of capacity, with an actual flow of 0.335 MGD (CY 2006). Substantially all septage collected in the County by scavengers (e.g., septic tank pumpers) is taken to the County septage receiving facility located at the Solomons Island WWTP. Currently, approximately 1,737 dry tons per year of sludge is transported by the County from the Solomons Island WWTP to the Appeal Landfill for collection, where it is loaded into a sludge trailer by Solid Waste Division staff for final transportation by Duffield Hauling, Inc. for disposal at the King George Landfill in Virginia, and is reported to be beneficially used as supplemental landfill cover.

The Solomons Island Wastewater Treatment Plant was constructed west of the Appeal Landfill site on Sweetwater Lane in Lusby and was placed in operation in May 1986. This facility services the Solomons Island Sanitary District, including Solomons Island Town Center, areas in the vicinity of Back Creek (tributaries to Solomons Harbor) and Department of the Navy facilities (including the Naval Ordinance Research Facility) located in Solomons. In June 2003, the Solomons Sanitary district was extended to service the Lusby Town Center and Patuxent Business Park.

The Solomons Island Wastewater Treatment Plant is a rapid infiltration plant with a design capacity of 700,000 gallons per day. The Solomons Island WWTP was expanded and upgraded to a BNR system process in approximately 2003, capable of handling 1.017 MGD of wastewater. The plant contains the following unit process:

- a. Commutation and surge flow control at the Headworks Site in Solomons.
- b. High service pumps to pump from Solomons Headworks to the Solomons Wastewater Treatment Plant Land Treatment Site.
- c. Primary Clarifiers/Sludge Digestion Tanks.
- d. Rapid Infiltration Basins.
- e. Belt Filter Press.

Rapid infiltration is an innovative type of treatment which uses large infiltration basins as a media for growing particular types of bacteria for nitrogen removal. It is a two-step process resulting in an effluent which is of groundwater quality. Basically, the effluent from the primary clarifiers is dosed to a constructed earthen basin and the nitrogen compounds are nitrified within the aerobic portion of the basin (top 2 - 4 inches). Below the aerobic portion is the anoxic area which denitrifies the fully nitrified compounds using the carbon within the primary effluent resulting in a fully treated effluent.

The construction of the County's landfill adjacent to the site had presented the need to treat the leachate from the landfill at the Solomons WWTP. Furthermore, the Solomons WWTP is the sole location for receiving all septage collected in the County by scavengers (e.g., septic tank pumpers). All septage to be disposed of within Calvert County must be taken to the septage receiving facility located at the Solomons Island WWTP. The existing wastewater treatment plant has a BNR (Biological Nutrient Removal) system capable of handling the septage from various sources, the leachate from the Appeal Landfill and approximately 1.017 million gallons per day of wastewater.

In 2004, upgrades were completed including the addition of a bar screen and improvements to the Septage Receiving Facility, including construction of a septage acceptance plant. In 2005, a screen system upgrade project was completed to add a fully automatic self-cleaning influent screen and rotary screening compactor at the secondary clarifiers.

This site is isolated from the rest of the landfill activities. There is intended to be no public access to this location. The road, approaching the site, is separate from the rest of the system and available to County staff and sludge haulers only.

4. Calvert Cliffs Nuclear Power Plant:

The sewage treatment plant for the Calvert Cliffs Nuclear Power Plant was built for the benefit of the plant employees and guests. The plant has a design capacity of 0.0665 MGD.

The sewage treatment plant is an oxidation ditch type plant with nitrogen and phosphorous reduction (tertiary treatment). Although the effluent is discharged into the Bay, it is of excellent quality where the discharge is in deep water.

5. Calvert County Industrial Park:

The Calvert County Industrial Park sewage plant was completed in 1977. The site, consisting of 11.5 acres, is located southwest of Prince Frederick on Maryland Route 231 and is a part of the County Industrial Park. The flow for the original plant was 0.060 MGD with an expansion that was planned to go to 0.36 MGD by 1999. Secondary treatment of the sewage is provided, prior to discharge to underground drainfields. A new discharge permit has been approved by MDE for an additional 30,000 gallons per day. Currently an alternative treatment option is being designed to construct a new

wastewater pumping station on the existing site and pump all of the flow to Prince Frederick WWTP #1 for treatment. The existing treatment facility will be abandoned and demolished.

6. Northern High School:

The Northern High School sewage treatment plant in Chaneyville was placed in operation in 1972 to serve a population of 2,500 at the new school site. The design capacity of the plant is 0.040 MGD. The site, of approximately one acre, is located west of Maryland Route 4 on Chaneyville Road. The plant is restricted to the processing of sewage generated by Northern Middle and High School and provides secondary and tertiary treatment. Ultra violet disinfection is applied before discharge of treated effluent into a wetland system that leads to Graham Creek.

7. Randle Cliff:

The Randle Cliff facility has a design flow of 0.075 MGD and population loading of approximately 200. The plant was constructed in 1954 and discharges into the Chesapeake Bay. The operation of the treatment facility is under the supervision of the U.S. Navy. The system provides secondary sewage treatment by means of commutation of raw sewage, primary settling, rotor distribution of settled effluent on a trickling filter bed, and unheated sludge digestion with provisions for open sludge drying beds. Ultra Violet disinfection before discharge of treated effluent. No nutrient reduction (tertiary treatment) facilities are provided.

8. Marley Run:

The Marley Run Wastewater Treatment facility is currently a shared community system that serves sixty homes in the Marley Run Subdivision and discharges the treated effluent to nearby drip irrigation fields. The current permitted capacity of the treatment facility is 15,000 gpd. With buildout of the subdivision planned for a total of 160 homes, the permitted capacity of the treatment facility will be 40,000 gpd. The treatment facility is currently being upgraded to meet the required buildout capacity and more stringent treatment limits for the new facility was completed in June 2011. Marley Run WWTP will also service Huntingtown High School.

9. Tapestry North Condominium Association:

The Tapestry North Condominium Association facility is a shared septic facility for 22 customers operated by the County under contract. This facility is a FAST® system manufactured by Smith & Loveless, Inc. In this small "FAST" (Fixed Activated Sludge Treatment) system design, the system is intended to treat and denitrify wastewater via a compartmentalized two zone septic tank containing a submerged media bed and aeration blower. A pump discharges the treated effluent into two subsurface drain fields via a shallow underground pipe leach field system, with alternating field usage every six months. Solids collected in the first zone are pumped once a year and transported to the septage receiving station at the Solomons Wastewater Treatment

G. PRIORITIES FOR SEWERAGE DEVELOPMENT

Recommended priorities for provisions of sewerage facilities are summarized in Table 13.

1. The Solomons Forcemain Study includes the engineering evaluation of the aging Solomons Forcemain Pump Station (and the impacts of other connected pump stations) and the performance of the existing 10" force main (4.7 miles long) which sends Solomons effluent to the Solomons WWTP. For reference, the existing capacity of the Solomons Forcemain has dropped from 700 GPM to 450 GPM. Subsequent construction will include the cleaning and required modifications of the 10" force main (air release stations and check valves), replacement of the degritting unit, as well as the upgrading of the Solomons Sewage Pump Station pumps to meet the growing future demands [Priorities 1a, 1b, 1c & 2b].
2. The Solomons WWTP Improvements Project consists of improvements to increase plant safety, efficiency and to protect electrical equipment on site. This project includes the acquisition of a new rotary fan press, pretreatment for septage receiving, plant safety study and rehabilitation program, lightning protection study and modifications, and the replacement of the existing PLC control system previously destroyed by lightning [Priorities 1a, 1b, 1c, 1d & 1e].
3. The Solomons Headworks Equipment Retrofit Project consists of the retrofitting of the equipment at the Solomons Headworks to accomplish the following: add a mezzanine level, install at Pistagrit system to deal with sand, modify lead/lag time for pump operation, and install Godwin dri-prime stand by pump for emergency operation [Priorities 1a, 1b, 1c, 1e & 2c].
4. The Solomons WWTP Plant Upgrade project will expand the capacity of the Solomons WWTP to handle the projected future flow demands from the Solomons Sanitary District [Priorities 1a, 1b & 1c].
5. Prince Frederick Sewer Line (CMH to old Calvert Middle School) Project consists of the replacement of the aging 6 inch force main sewer line from Calvert Memorial Hospital to Dares Beach Road intersection with MD 2/4 (in vicinity of Calvert Middle School) [Priorities 1a, 1b, 1c, 2b & 2d].
6. Prince Frederick Sewer Pump Station #2 Rehabilitation Project consists of the upgrade of aging infrastructure necessary to meet the increased demands on the system [Priorities 1a, 1b, 1c, 2b & 2d].
7. Prince Frederick Sewer Line (Dares Beach Road to Pump Station #3) Project consists of the replacement of the aging gravity sewer line (south of Dares Beach Road intersection with MD 2/4) through to PF Pump Station #3 (along North Prince Frederick Boulevard) [Priorities 1a, 1b, 1c, 2b & 2d].

8. The Prince Frederick WWTP #1 Plant Upgrade project will provide an upgrade to add capacity to the existing facility. The intent is to add rapid infiltration basins (or alternate measures) to the existing facility and SBR (Sequencing Batch Reactor) technology to the processing [Priorities 1a, 1b, 1c & 2d].
9. Industrial Park WWTP Plant Upgrade Project will include the replacement of aging (30+ years old) and worn out WWTP equipment with a new wastewater pump station to redirect flow from the IPA to the PF WWTP#1 (Priorities 1a, 1b, 1c & 2b).
10. The Chesapeake Beach Wastewater Treatment Plant Reconstruction and ENR Upgrade Project will replace equipment at the Chesapeake Beach WWTP which has reached the end of its useful life. Concurrently with this replacement the plant will be modified for Enhanced Nutrient Reduction. A portion of the project, which Calvert County will not participate in, will also expand the plant capacity. A grant from the state Bay Restoration Funds is expected to cover 40% of eligible project costs. The balance will come from a Maryland Department of the Environment loan [Priorities 1a, 1b, 1c, 2c & 2d].
11. The Dowell Road Wastewater Pump Station Upgrade Project consists of replacing aged equipment, and improving safety features in order to meet the increased demands on the collection system.
12. The Prince Frederick Forcemain Replacement Project will replace the existing forcemain between Prince Frederick Wastewater Pump Station #3 and the intersection of Church Street and Heritage Boulevard. Includes approx. 2,850 feet of 8" forcemain.
13. The Prince Frederick Sewer Relining from PS #2 to WWTP #2 Project consists relining the existing gravity sewer line between Prince Frederick Wastewater Pump Station #2 (off of Main Street in the vicinity of Hawk Hill Drive) through easements north of Calvert Towne through to the Prince Frederick Wastewater Treatment Plant #2 (Tobacco Ridge) Wastewater Pump Station #1.
14. The Calvert Memorial Hospital Wastewater PS Upgrade Project is necessary to meet the increased demands on the system, and to replace aged equipment.
15. The Prince Frederick Forcemain Upgrade from WWTP #2 to WWTP #1 Project will include an evaluation of the capacity and condition of the aging Prince Frederick Forcemain and analyze the impacts and interactions of the pump stations connected to this forcemain. Evaluation will also consider modifications on pumping operations between the Prince Frederick Wastewater Treatment Plants #1 and #2, and evaluate potential changes to existing forcemain connection by Prince Frederick Wastewater Pump Station #3.

Construction will include cleaning the forcemain, clearing of the utility easement corridor to improve routine access and replacement of the existing forcemain check valves and air release valves.

16. Solomon Harbor Wastewater PS Upgrade: Upgrade of the Solomon's Harbor Wastewater Pump Station. This upgrade is necessary to meet the increased demands on the system, as well as replacing aged equipment.
17. The Prince Frederick Forcemain Extension from PS3 to FM on 231 Project will extend a force main from Prince Frederick Wastewater Pump Station to the forcemain on 231. This project is necessary so that costs are reduced in the processing of the sewerage.
18. The Prince Frederick - Upgrade Pump Station #6 Project will provide an upgrade to add capacity to the existing facility and replace aged infrastructure.
19. The Solomons WWTP Disposal Fields Rehabilitation Project will address the failing rapid sand filters at the Solomons Wastewater Treatment Plant. Approximately 14 sand bed needs to be replaced. Each bed is approximately 1/4 acres in size and 3 feet deep. In addition to the rehabilitation of the existing system, a reuse option will be explored in order to reduce the load on the rapid infiltration sand filters.
20. Huntingtown High School WWTP project will include replacing the WWTP that cannot meet the nitrogen removal requirement with a wastewater pumping station and installation of a new force main to redirect all flow from the Huntingtown High School to Marley Run WWTP. This is a Calvert County Board of Education capital project and does not appear on Table 13. The project will result in a nitrogen credit.