

CALVERT COUNTY COMPREHENSIVE WATER & SEWERAGE PLAN

2011 Update

PREPARED BY THE CALVERT COUNTY
DEPARTMENT OF PLANNING & ZONING

March 2011



Calvert County Division of Water and Sewerage. In addition, the plans and specifications must be submitted to the Maryland Department of the Environment for approval and they will issue the required construction permit.

M. WATER SUPPLY PROBLEM AREAS

Table 7 designates the Water Supply Problem Areas in the County. Water systems with small diameter mains are considered problem areas based on the fact that adequate fire flow could not be delivered to the area. The limited distribution problem is a result of the small diameter mains where it is anticipated that severe low pressure problems would occur if all subdivided lots were developed and homes lived in year round. The limited capacity problems are areas where additional well and storage capacity must be provided to serve the remaining undeveloped lots.

The Maryland Department of the Environment has taken actions in several cases to require owners to take appropriate action to assure provision of public water supply in several areas. The orders of the Department cite as a menace to public health and comfort, not only such items as low pressure and complete loss of pressure; but also, possible abandonment of the system(s) by private owners due to financial loss.

Solutions to these problems are not simple, and will require funding, regulations, administrative/legislative action, and management procedures. Initiative must be exercised by the owners and indirectly by the BOCC to solve the problems in ways which will protect public health, safety and welfare and can be financially supported. Funding sources are listed in Chapter 5. Staff is available to discuss solutions with private companies. Immediate, 5 and 10 year priorities for water development are found in [Table 8A](#) and [Table 8B](#).

Owners of existing water systems are required to collect adequate connection charges to provide escrowed funds for any necessary maintenance, or upgrading of the systems. Communities with existing systems may petition the BOCC for establishment of special taxing districts to finance needed water system improvements.

Area Name	Location	Population	Nature of Problem	Planned Correction
Hunting Hills	Huntingtown	150	Inadequate main sizes for fire flow	Upgrading system in FY12 ¹ Metering in FY 12 ¹
Kenwood Beach	Port Republic	255	Limited distribution, inadequate main sizes for fire flow	Replace old inadequate mains
Western Shores	Port Republic	175	Limited capacity - 50 homes on a single community well: no more connections allowed, inadequate main sizes for fire flow	Replace old inadequate mains in progress
Apple Greene	Dunkirk	500	No fire protection, on-site wells limit septic system replacements.	Construct public water system and interconnect with existing

				wells
Randle Cliff	Chesapeake Beach	150	Limited distribution, inadequate main sizes for fire flow	None
White Sands	Lusby	120	Limited distribution, inadequate main sizes for fire flow	None
Lakewood Estates	Dunkirk		Inadequate main size for fire flow No individual metering	Replace old inadequate mains New individual meters installed in FY2013
Beaches Water Co.	St. Leonard	2000	Inadequate main size for fire flow, inadequate storage, No metering	Upgrade main, add storage, add meters
St. Leonard	St. Leonard	255	Exceeds Groundwater Appropriation Permit	Install Water Meters Construction Well and Elevated Storage Tank

1 Under contract

Table No. 8A
Immediate, 5 and 10 Year Priorities for Water Development – Municipal (Public)

			Estimated Costs ¹			Project Status / Construction Start	
Fiscal Year and Project Number	County Priority Assigned	Description	Total	Federal and/or State	Local	Immediate Priority Projects	5 and 10 Year Period Projects
FY11 Proj. #4807	1a, 1b, 1c, 2c & 2d	East Prince Frederick Water Tower and Well	1.540	1.6 (MDE Loan)	1.0(Cap Conn.)	In Progress Final Design May 2011/Well Installation March 2011 / September 2011	-
FY11 to FY12 Proj. # -4810	1b & 1d	Chesapeake Heights / Dares Beach Water Treatment	0.1625		0.1625 (Loan)	In Progress (Pilot Program + Design) / Fall 2007	-
FY13 (Prior) Proj. #4804	1a, 1b, 1c, 2c & 2d	St. Leonard Well and Tower	1.068		1.068 (Loan)	In Progress (Preliminary Design) / Spring 2008	-
FY12 (Prior) Proj. #4800	2b & 2c	Hunting Hills Water System Upgrade	0.319		0.319 (Loan)	Complete FY13	-
FY08 (+ Prior) Proj. #4801	2b & 2c	Lakewood Water System Upgrade (Tank Replacement) ²	0.040		0.040 (Loan)	Complete FY13	-
FY14 Proj. # -	2b & 2c	Kenwood Beach Tank Replacement	0.391	-	0.391 (Loan)	-	-

1 Preliminary cost estimates based on dollar values as of effective date of plan where applicable, in millions of dollars

2 Lakewood Project split into two subprojects due to different tasks and funding spanning two fiscal years with one year gap in between funding

FY14 Proj. # -	2b & 2c	White Sands Tank Replacement	0.391	-	0.391 (Loan)	-	-
FY16 Proj. # -	2b & 2c	Dowell Road Well Relocation	0.500	-	0.500 (Loan)	-	-
FY16 Proj. # -	2b & 2c	Chesapeake Heights Water System Upgrade	0.535	-	0.535 (Loan)	-	-
FY12 Proj. # -	2b & 2c	Paris Oaks Rehabilitation Project	1.100	-	1.100 (Loan)	-	-

Table No. 8B

Immediate, 5 and 10 Year Priorities for Water Development – Private Community/Commercial

<u>Fiscal Year and Project Number</u>	<u>County Priority Assigned</u>	<u>Description</u>	<u>Estimated Costs¹</u>			<u>Project Status / Construction Start</u>	
			<u>Total</u>	<u>Federal and/or State</u>	<u>Local</u>	<u>Immediate Priority Projects</u>	<u>5 and 10 Year Period Projects</u>
<u>Shoppes at Apple Greene</u>	=	<u>Dunkirk well and storage tank</u>	<u>1.275</u>	=	=	<u>In progress permitting at MDE</u>	=

N. GROUNDWATER PROTECTION PLAN

The goal of this ground water protection plan is to prevent and/or minimize the pollution of the ground waters of Calvert County. Protection of groundwater from pollution achieves two purposes: (1) protection of drinking water quality and (2) protection of surface water quality, Most of Calvert County’s drinking water supply is from deep confined aquifers (see section B above). The confining layers consist-of very fine sediments that seal off the aquifer and protect it from surface contamination. Abandoned wells that penetrate the confining layers pose the greatest threat to drinking water quality by allowing direct access to source water from surface contaminants. To protect drinking water quality, abandoned wells must be sealed and active well heads must be secured to protect the source water from contamination.

It is therefore required that any well that is not being used for potable water (and meets potable water quality standards) shall be sealed and grouted, except those being used for agricultural purposes. In addition, the separation distance between well and septic system which is set by the Calvert County Health Department must be maintained. A wellhead protection plan will be developed for the next comprehensive review that addresses protection of all municipal and community water systems.

By protecting near surface groundwater from contamination, surface water quality is protected.

¹ Preliminary cost estimates based on dollar values as of effective date of plan where applicable, in millions of dollars

- c) Projects that are part of the normal maintenance of a system.

Priority 4

- a) Projects that can be postponed without harming existing programs or the County's water and sewer system.

E. WATER AND SEWER NEEDS ANALYSIS

Based on the priority ranking system described in Section D and building on the problem areas identified in Chapters Three and Four, the Calvert County Department of Public Works Utilities Division has developed a 'Needs' list for water and sewer projects. This list will then become the basis for establishing priorities and developing a Water and Sewer CIP program for implementation.

F. PRIORITIES FOR WATER SERVICE

F.1 MUNICIPAL (PUBLIC)

Recommended priorities for provisions of water service are summarized in Table 8A (repeated below from Chapter 3). The following is a description of each recommended water capital project:

1. The East Prince Frederick Water Tower and Well consists of the construction of an additional elevated water storage tower and additional production well to meet the anticipated growth in the Town Center as well as balance the water being supplied on the west and east sides of Maryland Route 2/4 in the Prince Frederick Town Center [Priorities 1a, 1b, 1c, 2c & 2d].
2. The Chesapeake Heights / Dares Beach Water Treatment Projects shall provide new water treatment facilities at the existing wells to ensure the water supplied meets the MDE water quality standards for arsenic. Additionally, the two systems will be interconnected to improve system pressures and provide operational redundancies that will ensure continual service [Priorities 1b & 1d].
3. The St. Leonard Well, Tower and waterline extension Project consists of installing a new 6" well to supplement the existing 4" wells to keep up with the increasing demand in the Town Center. The proposed improvements will provide additional capacity to the St. Leonard system that will meet existing and future community demands and provide adequate community fire protection [Priority 1a, 1b, 1c, 2c & 2d].
4. The Shores of Calvert Water Tank Project includes the replacement of the existing aged 15,000 gallon water storage tank as well as the treatment plant controls and pump station [Priority 2b & 2c].
5. The Hunting Hills Water System Upgrade is a project to completely rehabilitate the distribution system and replacement of the water storage tank. Rehabilitation shall include the replacement of the distribution lines, installation of new water meters, well housing

- repairs and minor upgrades to the controls and electrical system. The new system capacity will be upgraded to 250,000 GPD [Priorities 2b & 2c].
6. The Lakewood Water System Upgrade consists of replacing the existing aged water storage tank and distribution system [Priorities 2b & 2c].
 7. The Dares Beach Waterline / Tank Repainting project includes the replacement of an aging 40 year old waterline that has a history of leaks and other related problems, as well as the maintenance and painting of the water storage stand pipe at the Dares Beach water facility [Priorities 2b & 2c].
 8. Water Meter Replacement Project to retrofit all of the existing water meters within the Bureau of Utilities, beginning with the existing water meters that are not functioning, ultimately replacing all of the existing Badger Meter water meters with new Master Meter water meters to ensure accuracy and readability. Currently un-metered water systems will ultimately have water meters installed as well. For reference, Badger Meter, Inc. previously terminated their production of the "TRACE" electronic transponder meter reading system equipment and effective June 2007 has terminated their support of this equipment. [Priorities: some areas 1b, 1c, 1e, 2b & 3c; other areas 2a; 3b, 3c].
 9. The Kenwood Beach Tank Replacement Project includes the replacement of an existing aged hydropneumatic tank and rehabilitating the existing pumping station.
 10. The White Sands Tank Replacement Project includes the replacement of an existing aged hydropneumatic tank and rehabilitating the existing pumping station.
 11. The Dowell Road Well Relocation Project will relocate the existing well away from an existing wastewater pump station. The project will include locating a suitable well site, well design and construction, extending a water line from the well site to the distribution network, and abandoning the existing well.
 12. Chesapeake Heights Water System Upgrade will replace aged infrastructure, including distribution lines, and isolation valves throughout the system. The improvements will decrease maintenance burden, improve community service and decrease system water losses.
 13. The Paris Oaks System Rehabilitation Project will includes demolishing an abandoned pump station and explore options to increase well yield or supply additional capacity through an interconnection to an adjacent water system.

Table No. 8A (Repeated from Chapter 3)

Immediate, 5 and 10 Year Priorities for Water Development – Municipal (Public)

			Estimated Costs ¹			Project Status / Construction Start	
Fiscal Year and Project Number	County Priority Assigned	Description	Total	Federal and/or State	Local	Immediate Priority Projects	5 and 10 Year Period Projects
<u>Municipal (Public)</u>							
FY11 Proj. #4807	1a, 1b, 1c, 2c & 2d	East Prince Frederick Water Tower and Well	1.540	1.0 (MDE Loan)	0.540 (Cap Conn.)	In Progress Design May 2011/Well Installation March 2011/ September 2011	-
FY11 to FY12 Proj. # 4810	1b & 1d	Chesapeake Heights / Dares Beach Water Treatment	0.1625	-	0.1625 (Loan)	In Progress (Pilot Testing + Design) / Fall 2007	-
FY12 (Prior) Proj. #4804	1a, 1b, 1c, 2c & 2d	St. Leonard Well and Tower	0.103	-	0.103 (Loan)	In Progress (Preliminary Design) / Spring 2008	-
FY12 (Prior) Proj. #4800	2b & 2c	Hunting Hills Water System Upgrade	0.319	-	0.319 (Loan)	In Progress (Preliminary Design) / Spring 2008project complete Winter 2013	-
FY11 (+ Prior) Proj. #4801	2b & 2c	Lakewood Water System Upgrade (Tank Replacement) ²	0.040	-	0.040 (Loan)	In Progress (Preliminary Design) / Summer 2008Project complete Winter 2013	-
FY09 Proj. #4801	2b & 2c	Lakewood Water System Upgrade (Water Distribution System) ²	0.250	-	0.250 (Loan)	In Progress (Preliminary Design) / Summer 2009Project complete Winter 2013	-
FY14 Proj. # -	2b & 2c	Kenwood Beach Tank Replacement	0.380	-	0.380 (Loan)	-	-
FY14 Proj. # -	2b & 2c	White Sands Tank Replacement	0.380	-	0.380 (Loan)	-	-
FY16 Proj. # -	2b & 2c	Dowell Road Well Relocation	0.500	-	0.500 (Loan)	-	-
FY16 Proj. # -	2b & 2c	Chesapeake Heights Water System Upgrade	0.535	-	0.535 (Loan)	-	-
FY12 Proj. # -	2b & 2c	Paris Oaks Rehabilitation Project	1.100	-	1.100 (Loan)	-	-

¹ Preliminary cost estimates based on dollar values as of effective date of plan where applicable, in millions of dollars

² Lakewood Project was split into two subprojects due to different tasks and funding spanning two fiscal years with one year gap in between funding

Table No. 8B (Repeated from Chapter 3)

Immediate, 5 and 10 Year Priorities for Water Development – Private Community/Commercial

			<u>Estimated Costs¹</u>			<u>Project Status / Construction Start</u>	
<u>Fiscal Year and Project Number</u>	<u>County Priority Assigned</u>	<u>Description</u>	<u>Total</u>	<u>Federal and/or State</u>	<u>Local</u>	<u>Immediate Priority Projects</u>	<u>5 and 10 Year Period Projects</u>
Shoppes at Apple Greene	=	Dunkirk well and storage tank	1.275	=	=	In progress permitting at MDE	=

F.2. PRIVATE COMMUNITY/COMMERCIAL

Recommended provisions of private water service are summarized in Table 8B (repeated below from Chapter 3). The following is a description of each recommended water project:

1. Shoppes at Apple Greene is a multi-use water treatment and distribution system designed and constructed by a developer, and designated as a Non-Community Transient system under the Federal/State Drinking Water Act. Raw water is provided by one (1) well drilled into the Magothy Aquifer Formation to a depth of 520 feet. Water retrieval is regulated by Maryland State Water Appropriation Permit No. CA1989G008 (04) at a daily average of 21,000 gallons on a yearly basis and 33,200 gallons for the month of maximum use. A treatment methodology of oxidation and filtration supplemented by pH control and disinfection will provide potable water to a 200,000 gallon storage tower. The tower will also serve for fire suppression. The system will be privately owned and operated by a Maryland Licensed Operator.

GG. PRIORITIES FOR SEWERAGE DEVELOPMENT

G.1 MUNICIPAL (PUBLIC)

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

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].

1 Preliminary cost estimates based on dollar values as of effective date of plan where applicable, in millions of dollars

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.

G.2. PRIVATE COMMUNITY/COMMERCIAL

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

1. Shoppes at Apple Greene is a multi-use system rated for disposal of a yearly average wastewater flow of 23,639 gallons per day. The effluent limitations are controlled under Groundwater Discharge Permit 13-DP-3400A. The wastewater generated by commercial/retail units is treated in a Sequential Batch Reactor with subsurface disposal of effluent to drip irrigation drain fields sized for one (1) complete system and one (1) replacement system. A storage lagoon sized for 31.6 days of storage (746,818 gallons) is also part of the system. The system will be privately owned and operated by a Maryland Licensed Operator.

Table No. 13A

Immediate, 5 and 10 Year Priorities for Sewerage Development – Municipal (Public)

Fiscal Year and Project Number	County Priority Assigned	Description Total	PL 660 ² Eligibility	Costs ¹		Projected Schedule		
				Other Federal Local	Preliminary Plans	Financial Plans	Start Construction	Complete Construction
FY08 (+ Pridr) Proj. #4859	1a, 1b, 1c & 2b	Solomons Forcemain Study (See G1 Above)	N/A	0.250	Yes	Capital Connections	Spring 2011 (Currently under Evaluation)	FY11~FY12
FY08 to FY09 Proj. #4860	1a, 1b, 1c, 1d & 1e	Solomons WWTP Improvements (See G2 Above)	Anticipated	1.125	Yes	State Loan (or Co. Loan)	FY12 (Engineering in FY08)	FY16~FY17
FY08 to FY09 Proj. #4861	1a, 1b, 1c, 1e & 2c	Solomons Headworks Equipment Retrofit (See G3 Above)	N/A	1.525	Yes	Capital Connections	FY13 (Engineering in FY08)	FY13~FY14
FY09 to FY10 Proj. #4863	1a, 1b & 1c	Solomons WWTP Plant Upgrade (See G4 Above)	Anticipated	1.280	No	State Loan (or Co. Loan)	FY13 (Engineering in FY08)	FY16~FY17
FY08 (+ Pridr) Proj. #4852	1a, 1b, 1c, 2b & 2d	Prince Frederick Sewer Line [CMH to old Calvert Middle School] (See G5 Above)	-	0.360	No	State Loan (or Co. Loan)	FY13 (Engineering in FY08)	FY13~FY14
FY08 (+ Pridr) Proj. #4858	1a, 1b, 1c, 2b & 2d	Prince Frederick Sewer Pump Station #2 Rehabilitation (See G6 Above)	N/A	0.4325	Yes	Capital Connections	FY13 (Engineering in FY08)	FY13~FY14
FY08 to FY09 Proj. # -	1a, 1b, 1c, 2b & 2d	Prince Frederick Sewer Line [Dares Beach Road to Pump Station #3] (See G7 Above)	-	0.550	No	State Loan (or Co. Loan)	FY15 (Engineering in FY08)	FY15~FY16

1 Based on real dollar values, in millions of dollars.

2 Public Law 660, Section 8, Federal Water Pollution Control Act, provides grants for state water-pollution control programs and authorized the granting of funds for construction of necessary treatment works to prevent the discharge of untreated sewage.

Table No. 13A

Immediate, 5 and 10 Year Priorities for Sewerage Development – Municipal (Public)

				Costs ¹	Projected Schedule			
Fiscal Year and Project Number	County Priority Assigned	Description Total	PL 660 ² Eligibility	Other Federal Local	Preliminary Plans	Financial Plans	Start Construction	Complete Construction
FY11 to FY12 Proj. # -	1a, 1b, 1c & 2d	Prince Frederick WWTP #1 Plant Upgrade (See G9 Above)	Anticipated	2.40	No	State Loan (or Co. Loan)	FY14 (Engineering in FY11)	FY14~FY15
FY11 to FY12 Proj. #4855 -	1a, 1b, 1c & 2b	Industrial Park WWTP Plant Upgrade (See G9 Above)		0.630	No	State Loan (or Co. Loan)	FY11 (Engineering in FY08)	FY14~FY15
FY08 to FY10 Proj. # -	1a, 1b, 1c, 1d & 1e	CB WWTP Reconstruction and ENR Upgrade (See G10 Above)	Anticipated	20.0	Yes	BRF Grant (40%) & State Loan for balance	FY12 (Engineering in FY08)	FY14~FY15
FY16 Proj. #4865	1a, 1b, 1c, 2b & 2d	The Dowell Road Wastewater Pump Station Upgrade	N/A	1.105	No	State Loan (or Co. Loan)	FY13 (Engineering FY11)	FY14
FY16 Proj. #4864	1a, 1b, 1c, 2b & 2d	Prince Frederick Forcemain Replacement from PS3 to Church St.	-	0.525	No	State Loan (or Co. Loan)	• FY13	FY14
FY16 Proj. # -	1a, 1b, 1c, 2b & 2d	Prince Frederick Sewer Relining from PS #2 to WWTP #2	-	1.106	No	State Loan (or Co. Loan)	• FY13	FY14
FY16 Proj. # -	1a, 1b, 1c, 2b & 2d	Calvert Memorial Hospital Wastewater PS Upgrade	N/A	0.682	No	State Loan (or Co. Loan)	FY15 (Engineering in FY14)	FY16
FY16 Proj. # -	1a, 1b, 1c, 2b & 2d	Prince Frederick Forcemain Upgrade from WWTP #2 to WWTP #1	-	0.275	No	State Loan (or Co. Loan)	• FY15	FY15
FY16 Proj. # -	1a, 1b, 1c, 2b & 2d	Solomon Harbor Wastewater PS Upgrade	N/A	0.760	No	State Loan (or Co. Loan)	FY17 (Engineering in FY16)	FY19
FY16 Proj. # -	1a, 1b, 1c, 2b & 2d	Prince Frederick Forcemain Extension from PS3 to FM on	-	0.665	No	State Loan (or Co. Loan)	FY17 (Engineering in FY16)	FY17

Table No. 13A

Immediate, 5 and 10 Year Priorities for Sewerage Development – Municipal (Public)

				Costs ¹			Projected Schedule	
Fiscal Year and Project Number	County Priority Assigned	Description Total	PL 660 ² Eligibility	Other Federal Local	Preliminary Plans	Financial Plans	Start Construction	Complete Construction
		231						
FY16 Proj. # -	1a, 1b, 1c, 2b & 2d	Prince Frederick - Upgrade Pump Station #6	N/A	0.780	No	State Loan (or Co. Loan)	FY17 (Engineering in FY16)	FY19
FY16 Proj. # -	1a, 1b, 1c, 1d & 1e	The Solomons WWTP Disposal Fields Rehabilitation	Anticipated	1.080	No	State Loan (or Co. Loan)	FY16 (Engineering in FY15)	FY19

Table No. 13B

Immediate, 5 and 10 Year Priorities for Sewerage Development – Private Community/Commercial

				Costs ¹			Projected Schedule	
Fiscal Year and Project Number	County Priority Assigned	Description Total	PL 660 ² Eligibility	Other Federal Local	Preliminary Plans	Financial Plans	Start Construction	Complete Construction
=	=	Shoppes at Apple Greene	N/A	1.750	Yes	=	FY14	FY15

HH. CAPITAL IMPROVEMENTS FOR WATER AND SEWER

Based on the 'needs' list and priorities list described in previous sections, a Capital Improvement Program (CIP) can be developed. Recommended CIP projects are illustrated in Table 14.

Table No. 14

Capital Improvements Required for Implementation of Water and Sewerage Projects

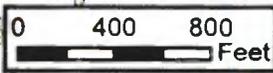
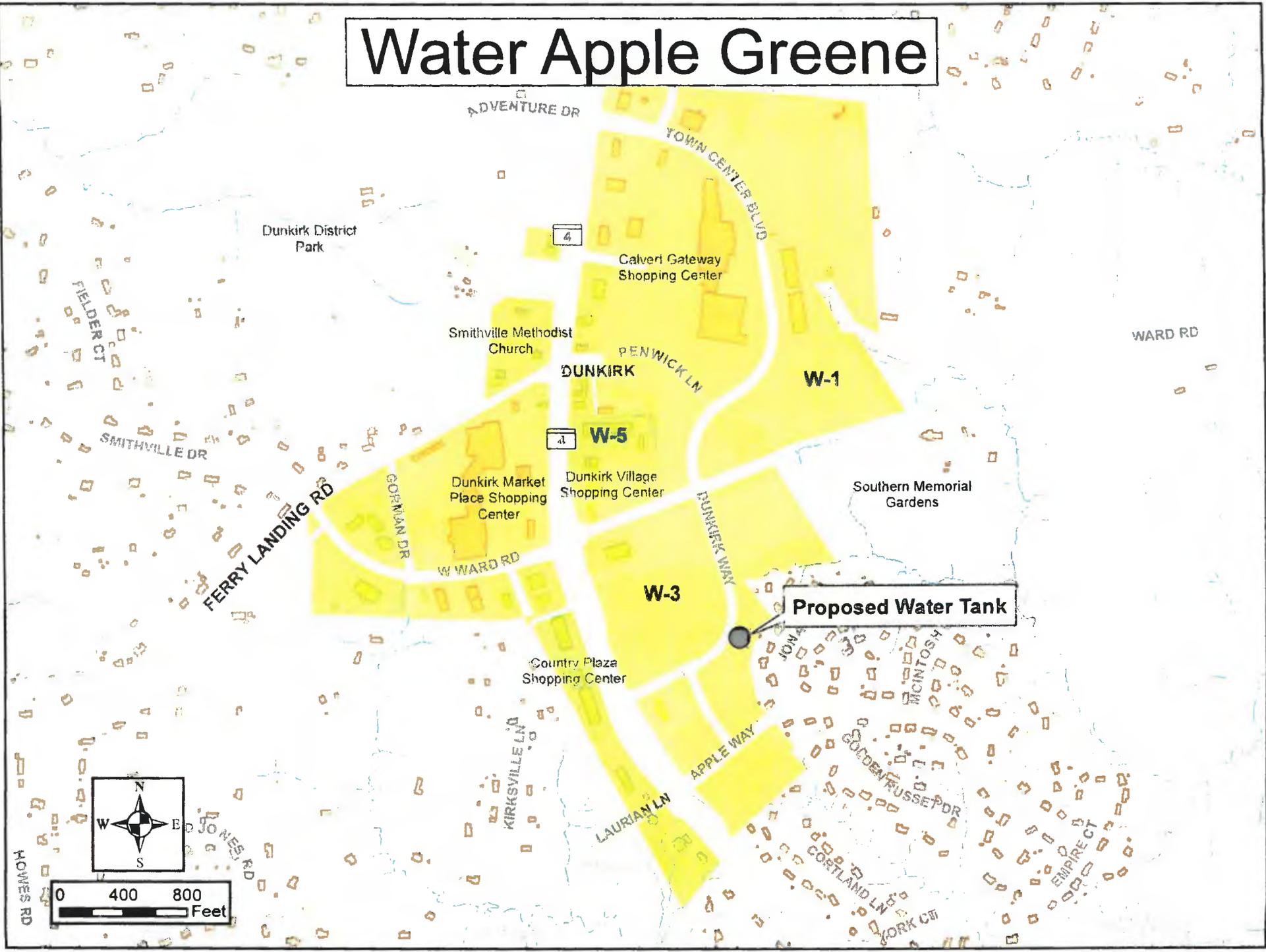
Public Works/ Utilities Bureau Division of Water & Sewerage	Prior Approvals	Five Year CIP					Total thru
		FY11	FY12	FY13	FY14	FY15	FY15

¹ Based on real dollar values, in millions of dollars.

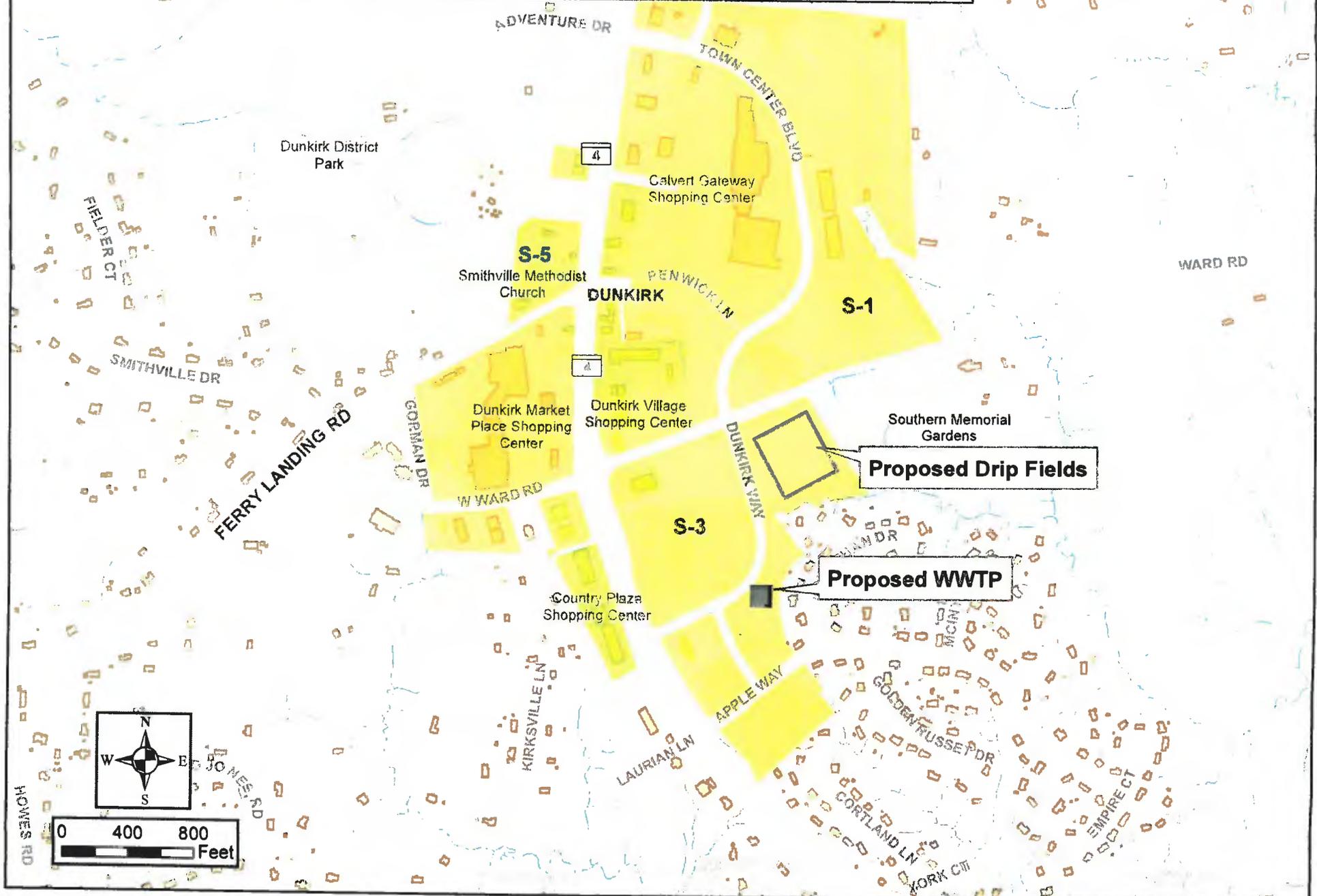
² Public Law 660, Section 8, Federal Water Pollution Control Act, provides grants for state water-pollution control programs and authorized the granting of funds for construction of necessary treatment works to prevent the discharge of untreated sewage.

Water Apple Greene

14



Sewer Apple Greene



15

