THE TENTH BIENNIAL UPDATE TO THE FIVE-YEAR PLAN
For

THE DARLINGTON WATER SUPPLY SERVICE DISTRICT

HARFORD COUNTY, MARYLAND

Prepared by

MARYLAND ENVIRONMENTAL SERVICE

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I. BACKGROUND

A. The Darlington Water System

The Darlington Water Supply System (the System) serves the Darlington community in northeastern Harford County, Maryland. Upgraded in 2003 to replace the original 1950s system, it now provides potable water to both existing and new users. At Harford County's request, the Maryland Environmental Service (MES) established the Darlington Water Supply Service District (the Service District) in 1997 to oversee the system's ongoing operation. The Service District is discussed below in Section II.

The system has a total of 122 possible connections, out of which 96 connections are currently active, including residential units, a school, churches, businesses, a fire station, and a post office. The System's main infrastructure includes two wells: one pump house, one hydropneumatic tank, several thousand linear feet of pipe, and water meters for each connection. There are also additional stub-outs available to provide future service.

The System is described in the Harford County Water and Sewerage Master Plan (the Master Plan) as a community water system lying outside of the Harford County Development Envelope. As such, the Master Plan states that the Darlington water system is "expected to maintain economically viable and physically reliable resources to serve the existing customers," and that "extensive expansion of these systems is not encouraged; however, minor additions to the customer base may be logical and appropriate." The Master Plan also notes that the System does not provide fire flow protection.

B. The Maryland Environmental Service

MES is an Independent State agency created by the Maryland General Assembly to provide, among other things, dependable, effective, and efficient water supply services to public and private instrumentalities in compliance with state laws, regulations, and policies governing air, land, and water pollution. The Act giving MES its powers is set forth in the Annotated Code of Maryland, Natural Resources Article, Section 3-101, and subsequent sections.

II. THE SERVICE DISTRICT

On October 23, 1997, MES created the Service District pursuant to its legal authority set forth in the Annotated Code of Maryland, Natural Resources Article, Section 3-106, 3-108, 3-128, and MES Board of Directors Resolution No. 97-10-1R. Pursuant to its authority and the Resolution, MES purchased the assets of the Darlington Water Company.

The physical boundaries of the Service District include all properties that were served by the original water system and any individual piece of property that is within 50 feet of an existing water main. The Service District may, over time, be modified and enlarged with the appropriate review and approval, but no alteration to the Service District may diminish the level of service rendered to the Service District. MES' goal in establishing the Service District was to maintain the current distribution system configuration and make necessary improvements to allow providing reliable water service to the system

customers.

III. THE FIVE-YEAR PLAN

Integral to the establishment of the Service District was the preparation of a Five-Year Plan. The original Five-Year Plan, prepared in September 1997, is available for review at MES headquarters in Millersville, Maryland, or at MES' website www.menv.com/service/town-of-darlington-water/. MES is required to review, update, and adopt an updated Five-Year Plan for the Service District biennially. The Five-Year Plan may be updated and readopted by MES only after at least one public hearing, at which time MES shall take the actions necessary to implement the revised Plan.

This document is the Tenth Biennial Revision of the Five-Year Plan (the Revised Plan) for the Service District. The Revised Plan describes the current status along with any proposed changes needed to continue providing potable water within the Service District while maintaining consistency with Harford County's Water and Sewer Master Plan.

Specifically, the present plan updates the current financial status of the System and reaffirms the proposed user fee, Capital Improvement, and connection fee for new customers, as previously addressed in the 6th Biennial Update and Revision, the last plan in which these fees were modified.

IV. IMPROVEMENTS

A. Completed Improvements to the System

Following the establishment of the Service District in 1997, MES implemented several capital improvements outlined in the original Five-Year Plan to enhance the System's reliability and performance. Between 1998 and 2003, key upgrades included safety improvements at well houses, installation of a 24-hour emergency alarm system, addition of new mechanical and electrical equipment, relocation of a shut-off valve, and a complete distribution system upgrade. MES also strengthened the System's operations and maintenance program through regular equipment servicing, inspections, recordkeeping, water quality testing, and regulatory reporting to the Maryland Department of the Environment (MDE).

B. PFAS Treatment System Upgrade

On April 10, 2024, the U.S. Environmental Protection Agency (EPA) finalized national drinking water standards for six PFAS compounds, per- and polyfluoroalkyl substances, a group of man-made chemicals often referred to as "forever chemicals" due to their persistence in the environment and resistance to degradation. These substances are potentially harmful to human health and have been linked to a range of adverse health effects.

Under the new regulations, all public water systems are required to test for PFAS. If levels exceed the established Maximum Contaminant Levels (MCLs), systems must implement appropriate treatment technologies to reduce concentration. While the current compliance deadline is set for 2029, the EPA has proposed extending the deadline to 2031 for certain PFAS compounds.

As part of Maryland's statewide PFAS monitoring program, samples collected from the Darlington Water Treatment Plant in 2022 and 2024 showed levels of PFOS, PFOA, and PFHxS exceeding the EPA's Maximum Contaminant Levels (MCLs) of 4 parts per trillion (ppt) for both PFOS and PFOA. These results confirm that 100% of the system's drinking water is impacted and will require treatment to remain in compliance with federal standards.

To address this, MES is planning to install a PFAS removal system at the Darlington Water Treatment Plant. The proposed solution involves granular activated carbon (GAC) vessels, a widely used and effective technology for PFAS removal in drinking water systems. While the system is expected to fit within the existing building, further modifications or expansions may be necessary and will be evaluated during design.

Implementing PFAS treatment will introduce new capital, operational, and maintenance costs. To help offset capital costs, MES is actively pursuing funding opportunities. In 2024, MES applied for a grant from MDE totaling $850,000 and was deemed eligible for a 50/50 split between two federal funding programs: the IIJA General Loan and the IIJA PFAS/ Emerging Contaminants (EC) Fund. This award includes a $425,000 loan (to be repaid) and $425,000 in funding with 100% principal and interest forgiveness after 10 years and no payments during that time.

MES continues to explore all available options to secure additional funding and minimize the financial burden of compliance on the community while ensuring safe, reliable drinking water for the future and compliance with PFAs regulations.

In addition, the operational and maintenance costs will include the replacement and disposal of spent carbon media, and specialized PFAS sampling and analysis. MES anticipates an increase of approximately $40,000 annually in operating costs. A Life-Cycle Cost Analysis (LCCA) will be completed during design to guide budget planning and operational decisions.

V. EXPENDITURES, REVENUES, AND CHARGES

MES purchased the assets of the Darlington Water Company in 1997. The system was established as a separate enterprise fund of MES, with the acquisition cost being funded through a $74,500 loan from other MES resources. The loan was structured for repayment in semi-annual installments over a 20-year period at an interest rate of 6.85%. However, revenues from the project were insufficient to cover the loan payments, which extended the payback period.

In addition to the original loan, the System operated at a loss for several years following its acquisition by MES. User fee revenues were insufficient to cover operating expenses. Despite MES' best efforts, the cumulative cash loss continued to grow and was projected to reach $220,000 by June 30, 2011. Combining this cumulative loss with the original $74,500 loan brought the total debt to $295,000. To address this, a special assessment and a rate increase were implemented. The total debt amount was reduced to $150,000 after MES forgave the original $74,500 loan and Harford County provided a $75,000 Community Development Block Grant (see Table I).

TABLE I

The History of Outstanding Debt and Proposed Actions for the Replacement of the Distribution System

Item	Amount	Proposed Action
1. Original Purchase Debt	$74,500	MES to forgive $74,500 debt
2. Cumulative Operating Loss	$220,500	$75,000 paid by Harford Co. (recovered via a Special Assessment)
3. Depreciation Charges	$0	
Total	$ 295,000	
Less	$ 74,500	
Less	$ 75,000	
Reduced Total	$150,000 (rounded)	

In 2011, MES revised the rate structure for Darlington Water System customers, with new rates taking effect in 2012. The rate increase put in place by MES in 2011 paid off the $150,000 debt in 15 years. These rates have covered annual operating costs and have fully retired the debt in 2025. The new rate is expected to pay for capital improvement costs for the water treatment plant and distribution system.

TABLE II

Estimated Expenses with PFAS Removal

	FY2026	**FY2027**	**FY2028**	**FY2029**	**FY2030**	**FY2031**
Expenses[1]	$42,818	$44,959	$47,207	$49,567	$52,045	$54,648
PFAS Annual Maintenance[2]	$0	$0	$20,000	$40,000	$42,000	$44,100
PFAS Debt Service[3]	$0	$0	$20,151	$20,151	$20,151	$20,151
Total Expenses & PFAS Removal Treatment	**$42,818**	**$44,959**	**$87,358**	**$109,718**	**$114,196**	**$118,899**

1. Annual Operating & Maintenance expenses.
2. Annual estimated PFAS Maintenance Cost.
3. Annual PFAS Loan Payment amount (as shown in Table IV).

TABLE III

Estimated Active User Fee – Average Use With PFAS Removal

Year	**FY2026**	**FY2027**	**FY2028**	**FY2029**	**FY2030**	**FY2031**
Fixed Base Amount[1]	$114.87	$118.60	$122.46	$126.44	$130.55	$134.79
Cost (per 1000 Gallons)[2]	*$6.78*	*$ 7.00*	*$7.23*	*$7.46*	*$7.71*	*$7.96*
Average User Charge Amount[3]	$64.90	$67.01	$69.19	$71.44	$73.76	$76.16

Sinking Fund Reserve[4]	$2.00	$2.00	$2.00	$2.00	$2.00	$2.00
Bay Restoration Fee[5]	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
Quarterly Total	**$196.77**	**$202.62**	**$208.65**	**$ 214.88**	**$221.31**	**$227.95**
Annual Increase from Previous Year		2.97%	2.98%	2.99%	2.99%	3.00%

1. The fixed base amount is increased by 3.25% each year.
2. The Unit Cost per 1,000 Gallons is increased by 3.25% each year.
3. This is the amount of usage cost per quarter based on the average consumption of 9,573 gallons per year for the 96 active connections.
4. Sinking Fund Reserve revenue is intended for repairs or replacement of existing equipment.
5. The Bay Restoration Fee is assessed by the State of Maryland and not under MES control.

Each quarterly customer invoice will include $2.00 for the Sinking Fund reserve to cover the costs for repairs or replacement of equipment, wells, water lines, and meters. This fund is not intended to be used for major capital improvement projects. As of June 30, 2025, the Sinking Fund reserve balance was approximately $17,748.

A separate fee of $15.00 is charged quarterly for the Bay Restoration Fund. This mandatory state-imposed fee applies to all Maryland residents connected to a sewer system or served by a septic system.

The water consumption charge (Cost per 1,000 gallons) pays for the annual operations and maintenance costs. Since these costs increase over time due to inflation and consumer price increases, it is also proposed that the user rate be adjusted to 3.25% annually to account for such increases. The annual fixed fee and water consumption charge will be increased each July by 3.25%.

A new loan will be secured to fund the construction and implementation of the PFAS Treatment System. For detailed information on the financing strategy, including repayment schedules and long-term planning, please refer to Table IV Debt Retirement Plan for the PFAS Treatment System provided below:

TABLE IV
Debt Retirement Plan for PFAS Removal System
Annual payments of $20,151.16

Year	Year	Remaining Principal Balance at End of Year
1	FY2027	$415,363.92
2	FY2028	$405,484.16
3	FY2029	$395,354.55
4	FY2028	$384,968.78
5	FY2030	$374,320.37
6	FY2031	$363,402.68
7	FY2029	$352,208.90
8	FY2032	$340,732.04

9	FY2033	$328,964.95
10	FY2030	$316,900.29
11	FY2034	$304,530.54
12	FY2035	$291,847.97
13	FY2031	$278,844.68
14	FY2036	$265,512.55
15	FY2037	$251,843.28

VI. ADDITIONAL CONSIDERATIONS

A. Fire Suppression Service

The existing System does not include enough storage or large enough pipes to provide for fire protection.

B. Responsibilities of the Customer

The System customers receive quarterly invoices based on water usage. Each customer is responsible for remitting invoice payment within 30 calendar days of the invoice date. Late payment charges will be assessed in accordance with Maryland Law. It should also be noted that failure to pay water bills could result in service being shut off to the delinquent account, pending receipt of the payment. As stated in the Annotated Code of Maryland, Natural Resources Article, Section 3-108, if a customer has not paid an invoice in full within 60 days of the due date of the invoice, the unpaid bill becomes a lien against the property served.

Each customer is responsible for the maintenance of the lateral water line serving his or her property. This lateral line includes the length of pipe immediately following the water meter vault up to, and entering, the property being served.

C. New Service Connections

All requested and proposed connections to the System must be approved by MES. If a property owner wishes to be connected to the System, the owner will be responsible for paying, (1) purchase and installation of a lateral line, shut-off (curb stop) valve, all appurtenances necessary for connection to the main line including a water meter vault and meter, (2) the cost of having a MES Construction Inspector present during the installation of the lateral line and the actual connection to the water system, and (3) a service connection fee for each connection.

The connection charge is $5,000. This will cover the connection cost, engineering, and inspection fees. This connection fee is in line with current service connection fees charged by other counties and municipal jurisdictions. The connection fee, as noted above, does not include the tap, meter crock, meter, installation, or required permitting fees.

Requests for connections will be reviewed based on the property's location relative to the System, the additional demand the connection would place on the System, and the System's ability, including piping size and capacity, to supply the requested amount of water.

A request for connection to the System may be made by submission of a written request to MES at the following address:

Water and Wastewater Group
Maryland Environmental Service
259 Najoles Road
Millersville, Maryland 21108

Attn: Division Chief, WWW Engineering
Darlington Water System connection request

D. Water Quality

The Darlington Water Treatment Plant continues to produce water that complies with all State and Federal water quality regulations. MES is now preparing to design and construct an upgrade to comply with the PFAS drinking water standards that have been promulgated to maintain our regulatory compliance and provide our customers with the highest quality drinking water.

E. Setting Customer Rates and the Appeal Process

Sections 3-108 and 3-128 of the Annotated Code of Maryland, Natural Resources Article, outline the procedure for setting customer rates and the opportunity for appeal. Section 3-108 (a) specifically discusses the determination of charges and costs, and states that before establishing or adjusting charges in a service district, MES shall publish a notice of the proposed changes and hold a public hearing on the proposed changes. Therefore, customers will receive advance notice of the proposed rate increase and an opportunity to voice their opinions and concerns.

Section 3-128 describes the appeal process, which entails arbitration provided by the Public Service Commission.

F. Fee Policy for All Connections

A standardized fee will be applied to each individual connection and future connection not yet in service. This charge is assessed for the operation and maintenance costs, sinking fund reserve fee, and the Bay Restoration fee. This policy ensures consistent and equitable cost distribution across all current and future service users.

A fixed base amount and a $2.00 sinking fund fee will be charged to each individual connection and future connections not in service. An additional $15.00 Bay Restoration fee and water usage fee will be charged to properties with active connections. Please see Table III for the User Fee table.