CoA SB 930 support ltr.pdf Uploaded by: Burr Vogel Position: FAV



City of Annapolis Department of Public Works 145 Gorman Street, 2nd Fl Annapolis, MD 21401-2535 410-263-7949 • Fax 410-263-3322

Subject: Senate Bill 930 - Managed Aquifer Recharge Pilot Program

I am writing to provide support to Senate Bill 930 for establishment of a Managed Aquifer Recharge Pilot Program. The City of Annapolis and Anne Arundel County regularly partner to protect the Chesapeake Bay and our water resources. Together, we jointly own the Annapolis Water Reclamation Facility (WRF) - an award winning wastewater treatment facility, recognized by National Association of Clean Water Agencies (NACWA) for perfect permit compliance since 2016.

The City of Annapolis owns and operates drinking water treatment and distribution facilities separate from those in Anne Arundel County. The City's Water Treatment Plant produces an average of 4.1 million gallons per day that is safely distributed to nearly 12,000 homes and businesses throughout the City of Annapolis. Our water supply originates from eight wells in three confined aquifers – the Magothy, Upper Patapsco, and Lower Patapsco. As all our drinking water comes from groundwater, we have a shared concern with Anne Arundel County about long-term water supply resiliency. We support innovative approaches to sustainable water supply and protection of our resources from potential future land subsidence and saltwater intrusion.

We support Anne Arundel County's approach to investigating managed aquifer recharge through the ongoing advanced water treatment pilot and proposed Demonstration Facility. The City favors a holistic water supply augmentation approach that restores the natural water cycle.

Sincerely,

Burr Vogel

Burr M. Vogel, PE City of Annapolis Director of Public Works

Anne Arundel Reuse Testimony_SB0930_MWCOG.pdf Uploaded by: Caitlin Bolton



TO: Chair Feldman, Vice Chair Kagan, and members of the committee

FROM: Kenny Boddye, Chair, Chesapeake Bay Policy Committee

DATE: February 14, 2025

POSITION: Favorable

We wish to testify in support of SB 0930, Managed Aquifer Recharge Pilot Program, on behalf of the Metropolitan Washington Council of Governments (COG) Chesapeake Bay and Water Resources Policy Committee (CBPC).

COG is a nonprofit association with 300 members, including elected officials from 24 local governments, the Maryland and Virginia state legislatures, and U.S. Congress. Each month, over 1,500 officials and experts participate through COG to address significant regional challenges and plan for the future. Established in 1998, the CBPC consists of local elected officials and representatives from COG's member governments and water and wastewater utilities in the metropolitan Washington region. The CBPC advises the COG Board of Directors on water resources policies, covering issues such as water and wastewater treatment, local water quality, stormwater management, and flooding.

COG and our member jurisdictions have a long history of partnership with local, state, and federal government in addressing important water resource issues. The proposed managed aquifer recharge pilot program in Anne Arundel County represents an innovative approach to water treatment that would further protect the region's environment, enhance the sustainability of Maryland's long-term groundwater supply and help address environmental pressures such as Chesapeake Bay restoration, sea level rise and saltwater intrusion. All of these outcomes align with COG's legislative priorities that were adopted by the COG Board of Directors in January 2025 (2025 Legislative Priorities FINAL1.pdf).

Specifically, this innovative program aims to test the use of treated reclaimed water from a demonstration facility as a source for groundwater augmentation, addressing anticipated groundwater supply or quality problems within the next 25 years. The program's focus on sustainability and innovative water management is commendable and aligns with COG's legislative priorities. By authorizing the Department of the Environment to review, permit, and regulate the process, SB 0930 ensures that the implementation of this pilot program will be thorough and well-monitored. The requirement for annual reporting to the Governor and the General Assembly further emphasizes the program's commitment to transparency and accountability.

The Managed Aquifer Recharge Pilot Program has the potential to significantly benefit Maryland's water resources, providing a sustainable solution to groundwater challenges while promoting environmental stewardship. COG supports this bill and the positive contributions it will make to the long-term health and sustainability of water resources in the metropolitan Washington region and the State of Maryland.

Thank you for considering COG's support for SB0930. We urge you to vote in favor of this important legislation.

Kenny Boddye, Chair, Chesapeake Bay Policy Committee

Anne Arundel County _FAV_SB930.pdf Uploaded by: Ethan Hunt



February 25, 2025

Senate Bill 930 Environment - Managed Aquifer Recharge Pilot Program - Establishment Senate Education, Energy, and the Environment Committee

Position: FAVORABLE

Anne Arundel County **SUPPORTS** Senate Bill 930 – Environment - Managed Aquifer Recharge Pilot Program - Establishment. This Bill would authorize the Maryland Department of the Environment (MDE) to review, permit, and regulate a process to test the use of treated reclaimed water from a demonstration facility as a source for groundwater augmentation.

Although the depletion of groundwater levels is not as severe in Maryland as it is in other regions, groundwater levels are still dropping. The continued decline of the aquifer water levels increases the risk of land subsidence and saltwater intrusion. With over 533 miles of shoreline, these are significant concerns for Anne Arundel County.

In an effort to get ahead of water supply constraints, Anne Arundel County has initiated a voluntary integrated plan (Our wAAter) to address long-term challenges associated with groundwater resiliency and nutrient discharges to the Chesapeake Bay. Our wAAter centers around five core initiatives, including an applied scientific research program for Managed Aquifer Recharge (MAR). The County has been operating a testing facility informed by an independent scientific advisory panel for several years. Should current testing continue to show success, the County requests to proceed with the design and installation of a demonstration scale facility, including treatment and underground injection, on a small, localized scale.

MAR is an innovative, integrated, proven, long-term sustainable solution to meet water resource challenges impacting local water supplies and the Chesapeake Bay. As conceptualized, MAR will improve long-term groundwater resiliency and reduce pollution to the Bay and its tributaries. Although MAR is new to Maryland, similar facilities have been tested and implemented in other states such as Nevada, New Mexico, California, Florida, and Virginia.

Anne Arundel County appreciates the technical expertise provided by MDE and the Department of Natural Resources in guiding this project and legislation. We have discussed several conceptual amendments proposed by those departments and are amenable to those changes being incorporated into SB930.

For all of these reasons, I respectfully request a FAVORABLE report on Senate Bill 930.

tellette

Steuart Pittman County Executive

MAR Fact Sheet - Legislation V2 02142025.pdf Uploaded by: Ethan Hunt

Establishing a Pilot Program in Anne Arundel County to Improve Water Supply and Water Quality

Anne Arundel County is seeking regulatory approval to investigate technologies and approaches for providing long-term benefits to water supply resiliency and nutrient management challenges through applied scientific research under the guidance of the Maryland Department of the Environment (MDE). This legislation proposes a carefully monitored managed aquifer recharge pilot program as a step toward addressing water resource challenges.

Desired Outcome of Legislation

- Support innovative, integrated, proven, long-term sustainable solutions to meet water resource challenges impacting local water supplies and the Chesapeake Bay.
- Recognize that managed aquifer recharge can be an innovative, resilient solution, validated through an informed applied scientific research and pilot programs.
- Request that MDE work with the County and independent experts to complete the applied scientific research, via piloting, to collect data necessary to validate managed aquifer recharge and establish definitive performance metrics.
- Develop regulations and guidelines that are informed by treatment objectives.



Key Tenets

Protect human health.

Protect and strengthen the Potomac aquifer group, of which Anne Arundel County is the largest user in the State of Maryland.

Use sound science and approaches.

Safe Drinking Water Act provides guiding principles for treatment approaches.

Keep regulators and key stakeholders informed with open communication at each step of the way.

Validate at key decision points including independent experts to keep the program moving forward.



There are proven technologies for safely treating reclaimed wastewater to drinking water quality to replenish aquifers. Such technologies, already regulated and used in neighboring Virginia, across the United States, and around the world, could be beneficial for implementation in Maryland. This technology also removes PFAS, pharmaceuticals and personal care products prior to aquifer recharge.



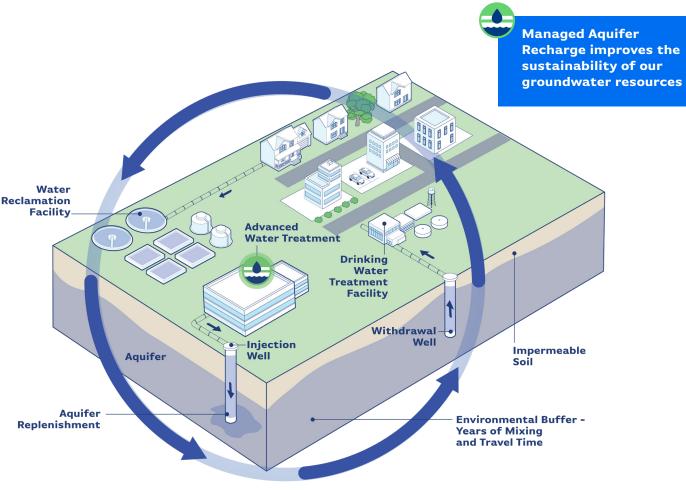


Needs for Water Resiliency and Nutrient Planning

- Anne Arundel County and other Maryland jurisdictions rely solely on groundwater for drinking water supply.
- Groundwater levels are dropping across the region, risking the long-term availability of groundwater for use as drinking water.
- Continued decline of the aquifer water levels increases the risk of land subsidence and saltwater intrusion.
- Sustainable groundwater resiliency should be implemented in advance of water supply constraints.
- Nutrient discharges to surface water continue to impact local streams, rivers, and the Chesapeake Bay.
- Climate change is increasing and accelerating the impacts of nutrients on our local waterways.

Applied Scientific Research Approach

Anne Arundel County has implemented an applied scientific research program to investigate the use of MAR within the County. Should current testing continue to show success, the County intends to proceed with the design and subsequent installation of a demonstration scale facility. Multiple regulatory review steps will be included prior to implementation of the demonstration facility. The 500,000 gallon-per-day facility will allow for demonstration of the full MAR concept, including treatment and underground injection, on a small, localized scale.







SB 930 - CBF - FAV.pdf Uploaded by: Gussie Maguire Position: FAV



Environmental Protection and Restoration Environmental Education

Senate Bill 930 Environment – Managed Aquifer Recharge Pilot Program – Establishment

Date:	February 25, 2025	Position:	FAVORABLE
To:	Education, Energy, and the Environment Committee	From:	Gussie Maguire,
			MD Staff Scientist

Chesapeake Bay Foundation (CBF) **SUPPORTS** SB 930, which establishes a program and permitting for managed aquifer recharge on a pilot study scale. Managed aquifer recharge is a technique used around the country and world to protect groundwater resources from depletion, land subsidence, and saltwater intrusion.

Millions of Maryland residents, particularly those living on the coastal plain, depend upon groundwater for drinking water and irrigation¹. Sea level rise has contributed to saltwater intrusion in coastal aquifers, which is exacerbated as more and more fresh water is pumped out of the aquifer for individual and municipal use, agriculture, and other needs. Injecting fresh water back into the aquifer through a managed aquifer recharge program combats saltwater intrusion in coastal areas, making it a tool in the state's coastal resiliency toolbox.

The extremely high level of treatment required for managed aquifer recharge depends upon advanced wastewater treatment technologies, such as reverse osmosis and granular activated carbon. These technologies remove nitrogen, phosphorous, and other pollutants more effectively than traditional treatment, and they can also remove contaminants traditional treatments miss, including pharmaceuticals, per- and polyfluoroalkyl substances (PFAS), and other emerging contaminants of concern. The proliferation of this level of water treatment, whether used for managed aquifer recharge, reservoir augmentation, or simply to improve point source wastewater discharge, will result in better water quality in the Chesapeake Bay and its tributaries.

CBF urges the Committee's FAVORABLE report on SB 930.

For more information, please contact Matt Stegman, Maryland Staff Attorney, at <u>mstegman@cbf.org</u>.

The Chesapeake Bay Foundation (CBF) is a non-profit environmental education and advocacy organization dedicated to the restoration and protection of the Chesapeake Bay. With over 200,000 members and e-subscribers, including 71,000 in Maryland alone, CBF works to educate the public and to protect the interest of the Chesapeake and its resources.

¹ <u>http://www.mgs.md.gov/groundwater/wateruse.html</u>

Maryland Office • Philip Merrill Environmental Center • 6 Herndon Avenue • Annapolis • Maryland • 21403

MAMWA Ltr SB 930 2.21.25.pdf Uploaded by: Lisa Ochsenhirt



Maryland Association of Municipal Wastewater Agencies, Inc.

Washington Suburban Sanitary Commission 14501 Sweitzer Lane, 7th Floor Laurel, MD 20707 Tel: 301-206-7008

MEMBER AGENCIES February 21, 2025

Allegany County
e Arundel County
City of Baltimore
Baltimore County
Town of BerlinThe Honorable Brian J. Feldman
Chair, Senate Education, Energy, and the Environment Committee
2 West Miller Senate Office Building
Annapolis, MD 21401

Re: SUPPORT -- SB 930 (Environment – Managed Aquifer Recharge Pilot Program – Establishment)

Dear Chairman Feldman:

On behalf of the Maryland Association of Municipal Wastewater Agencies (MAMWA), I am writing to **SUPPORT SB 930**, which would establish a Managed Aquifer Recharge (MAR) Pilot program within the Maryland Department of the Environment (MDE). MAMWA is a statewide association of local governments and wastewater treatment agencies that serve approximately 95% of the State's sewered population.

MAR has been successfully implemented across the United States, including in Florida, California, New Jersey, Arizona, and Oregon. MAR projects can have multiple benefits including improving groundwater resiliency, reducing the risks of aquifer depletion associated with sinking groundwater levels and saltwater intrusion, and, in Maryland, decreasing the level of nutrients that are being discharged to the Chesapeake Bay.

MAMWA supports Maryland wastewater utilities having the option to participate in a MAR pilot program on a voluntary basis. MAMWA notes that SB 930 would only establish a pilot, which would allow MDE and the General Assembly to consider the impacts of MAR based on a demonstration facility (or facilities) before the State decides whether to implement MAR more broadly. In addition, SB 930 has extensive treatment, testing, monitoring, and recordkeeping safeguards that will ensure that any demonstration projects are carefully planned and implemented subject to MDE oversight.

MAMWA urges the Committee to Vote YES on SB 930.

Please feel free to contact me with any questions at Lisa@AquaLaw.com or 804-716-9021.

Sincerely,

Delseulint

Lisa M. Ochsenhirt MAMWA Deputy General Counsel

cc: Education, Energy, and the Environment Members, SB 930 Sponsor

Anne Arundel County City of Baltimore Baltimore County Town of Berlin Cecil County Charles County City of Cumberland D.C. Water Frederick County City of Hagerstown Harford County City of Havre de Grace Howard County Ocean City Pocomoke City Queen Anne's County City of Salisbury Somerset County Sanitary District St. Mary's Metro. Comm. Washington County WSSC Water

CONSULTANT MEMBERS

Black & Veatch GHD Inc. Hazen & Sawyer HDR Engineering, Inc. Jacobs Ramboll Americas WRA

GENERAL COUNSEL

AquaLaw PLC

Resilience Authority MAR Written_Oral Testimony.pd Uploaded by: Matthew Fleming



Annapolis and Anne Arundel County

Veronique Bugnion *Board Chair* Anne Arundel County

Nate Betnun *Board Vice Chair* City of Annapolis

Teresa Sutherland *Board Treasurer* Anne Arundel County

Emily Clifton Board Secretary Anne Arundel County

Jamie Benoit Anne Arundel County

Mariah Davis City of Annapolis

David Jarrell Anne Arundel County

Jared Littmann City of Annapolis

Stacy Schaeffer Anne Arundel County

Mike Sewell Anne Arundel County

Staff: Matt Fleming, Executive Director 443.370.6951

Testimony in Support of SB0930 - Managed Aquifer Recharge Pilot Program

February 25th, 2025

Chairman Feldman, Vice-Chair Kagan and Education, Energy, and Environment Committee Members:

On behalf of the Resilience Authority of Annapolis and Anne Arundel County, I am writing to express our support for Senate Bill 930, which seeks to establish the Managed Aquifer Recharge (MAR) Pilot Program. This initiative is crucial for enhancing the resilience of our drinking water supply in the face of climate change and other environmental challenges.

The Resilience Authority was established in 2021 with a mission to coordinate and implement projects that bolster environmental and community resilience. We are committed to advancing infrastructure projects that mitigate climate change impacts, leveraging public and private investments to drive demand for resilience infrastructure throughout Anne Arundel County, Maryland.

Groundwater is a critical resource for Maryland, particularly in Anne Arundel County, where it accounts for 100% of our drinking water supply. However, this vital resource is increasingly stressed due to population growth, urban development, and the impacts of climate change. Current withdrawal rates exceed natural replenishment, posing a risk of long-term depletion if proactive measures are not taken.

Other states, such as California, Florida, and Texas, have successfully implemented MAR programs to enhance groundwater supplies and combat issues like saltwater intrusion. For example, the Los Angeles County Flood Control District and Hillsborough County, Florida, have used reclaimed water to protect and replenish groundwater supplies effectively. These programs provide valuable models for Maryland as we seek to safeguard our water resources.

While Maryland has not yet faced groundwater depletion as severe as in those states, levels are declining. Senate Bill 0930 presents an opportunity for the State to adopt a proactive and collaborative approach in exploring MAR technologies before water scarcity becomes a more significant crisis.

The passage of SB0930 would empower the Maryland Department of the Environment (MDE) to oversee and regulate MAR projects, ensuring they are implemented safely and effectively. This initiative will foster partnerships between local jurisdictions and the state to conduct applied scientific research and pilot programs. By collecting data and validating the Pilot's effectiveness, we can develop informed regulations and guidelines to support sustainable groundwater management.

For these reasons, I respectfully request a favorable report on Senate Bill 0930. Your support will be instrumental in ensuring the resilience and sustainability of our water resources for future generations.

Respectfully Submitted,

Matthew Fleming Resilience Authority Director

SB0930-EEE_MACo_SUP.pdf Uploaded by: Michael Sanderson



Senate Bill 930

Environment – Managed Aquifer Recharge Pilot Program – Establishment

MACo Position: SUPPORT

To: Education, Energy, and the Environment Committee

Date: February 25, 2025

From: Dominic J. Butchko and Michael Sanderson

The Maryland Association of Counties (MACo) **SUPPORTS** SB 930. This bill authorizes the Maryland Department of the Environment to establish the Managed Aquifer Recharge Pilot Program, potentially helping local leaders improve healthy water supply programs.

As climate change becomes an enduring reality, one of the growing challenges for policymakers is how to establish patterns of smarter and less destructive resource use. One of the most critical resource use patterns to reform is water. Today, water infrastructure primarily operates in a linear fashion, where water is pumped in from a source, cleaned at a water treatment plant, and distributed into the community, after which it enters the wastewater treatment system, and is finally discharged after treatment. This linear process effectively builds in a level of waste, as potable water or water which can be easily cleaned into potable water, is discharged instead of being recycled.

In Maryland and other jurisdictions, wastewater treatment technology already restores water back to a safe drinkable quality, meaning that final discharge meets the health and safety requirements to be safely re-entered into the system or into a containment area like an aquifer. SB 930 is innovative because – instead of relying on a more wasteful linear system – it gives counties a tool to develop more circular systems, reducing both waste and demand for increasingly limited supplies of fresh and usable water.

Counties support SB 930 as it creates another tool in the toolbox to serve our mutual constituents in smarter and more sustainable ways. For this reason, MACo urges the Committee to give SB 930 a **FAVORABLE** report.

DG Written Testimony_SB0930.docx.pdf Uploaded by: Senator Gile

DAWN D. GILE Legislative District 33 Anne Arundel County

Finance Committee

Chair

Anne Arundel County Senate Delegation



Miller Senate Office Building 11 Bladen Street, Suite 3 East Annapolis, Maryland 21401 410-841-3568 · 301-858-3568 800-492-7122 *Ext*. 3568 Dawn.Gile@senate.state.md.us

THE SENATE OF MARYLAND Annapolis, Maryland 21401

Testimony in Support of SB0930 - Environment - Managed Aquifer Recharge Pilot Program - Establishment

Mr. Chair, Madame Vice Chair, and members of the Senate Education, Energy, and the Environment Committee:

SB0930 would authorize the Maryland Department of the Environment (MDE) to review, permit, and regulate a process to test the use of treated reclaimed water from a demonstration facility as a source for groundwater augmentation. This bill would provide a regulatory path for a County to establish a Managed Aquifer Recharge (MAR) demonstration facility on a small, localized scale in order to test a long-term strategy for groundwater resiliency and nutrient discharges to the Chesapeake Bay.

Background

Groundwater levels in Maryland and our region are slowly declining. The continued decline of the aquifer water levels increases the risk of land subsidence and saltwater intrusion. With over 533 miles of shoreline, these are significant concerns for Anne Arundel County.

In order to address these challenges, Anne Arundel County launched Our wAAter - a vital program that will provide long-term benefits by protecting our waterways and the Chesapeake Bay while also improving our groundwater supplies and water resiliency. One of the five core initiatives of the Our wAAter program an applied scientific research program for MAR. MAR is a technology to safely treat reclaimed wastewater to drinking water quality to replenish aquifers. This technology also removes PFAS, pharmaceuticals and personal care products prior to aquifer recharge.

MAR is an innovative, integrated, proven, long-term sustainable solution to meet water resource challenges impacting local water supplies and the Chesapeake Bay. Although MAR is new to Maryland, similar facilities have been tested and implemented in other states such as Nevada, New Mexico, California, Florida, and Virginia. Anne Arundel County has been operating a MAR testing facility informed by an independent scientific advisory panel for several years.

Solution

Should current testing continue to show success, Senate Bill 930 will provide the Maryland Department of the Environment (MDE) with the regulatory authority it needs to permit a

carefully monitored MAR pilot facility. This would allow the County to take the next step to investigate this approach through applied scientific research under the guidance of MDE.

I appreciate the technical expertise provided by MDE and the Department of Natural Resources on this legislation. I understand the departments will propose several conceptual amendments, and we are amenable to those changes being incorporated into SB0930.

For all of these reasons, I respectfully request a favorable report on SB0930.

SB0930_DNR_SWA_EEE_2-25-25.pdf Uploaded by: Emily Wilson



February 25, 2025

BILL NUMBER: Senate Bill 930 - First Reader

SHORT TITLE: Managed Aquifer Recharge Pilot Program – Establishment

DEPARTMENT'S POSITION: SUPPORT WITH AMENDMENTS

EXPLANATION OF DEPARTMENT'S POSITION

The Department has been in conversations with the sponsor and with MDE on amendments to the proposed legislation. Water sustainability is a long-term (greater than 50 years) concern in Maryland. This program establishes a pilot program for Maryland to learn from when preparing for these future concerns. The amendments discussed provide substantive and necessary changes to the original bill language to aid in the protection of the existing drinking water resources including the requirement for reverse osmosis treatment for confined aquifer injection, establishing a need for the injection, establishing a requirement to prove injection is the best alternative in solving the stated problem, allowing for future contaminant levels to cease the injection, and for public hearings to ensure citizens are aware of the injections.

These amendments are critical to ensure drinking water is protected in the State of Maryland. There can be long-term risks associated with injection into the pristine drinking water supplies of Marylanders. These amendments ensure that an existing problem does exist that weighs these risks with the returns, ensures long-term water protection from contaminants of which we are aware and those of which we're not currently aware, and ensures public engagement.

BACKGROUND INFORMATION

SB942/HB1131 were introduced during the 2024 legislative session and both bills were subsequently withdrawn.

BILL EXPLANATION

This bill establishes a pilot program to be administered by the Maryland Department of the Environment for the injection of treated wastewater into drinking water aquifers to address water sustainability concerns such as land subsidence and/or saltwater intrusion.

MDE SB930 SWA.pdf Uploaded by: Jeremy D. Baker Position: FWA



The Maryland Department of the Environment Secretary Serena McIlwain

Senate Bill 930

Environment - Managed Aquifer Recharge Pilot Program - Establishment

Position:	Support with Amendments
Committee:	Education, Energy, and the Environment
Date:	February 25, 2025
From:	Alex Butler, Deputy Director of Government Relations

The Maryland Department of the Environment (MDE) SUPPORTS SB 930 WITH AMENDMENTS.

Bill Summary

Senate Bill 930 would establish a pilot program for managed aquifer recharge (MAR) in Maryland. MAR involves taking reclaimed water and injecting that water back into an underground aquifer (a process called groundwater augmentation). The bill authorizes MDE to review, permit, and regulate processes that test the use of reclaimed water from a demonstration facility for groundwater augmentation. The demonstration facility must address a groundwater supply or quality problem anticipated to occur within the next 25 years. Additionally, the bill requires MDE to report annually to the Governor and the General Assembly on the pilot program.

Position Rationale

MDE supports the general concept of water reuse technologies, as evidenced by its support of HB 848/SB 407 of 2023 *Drinking Water - Indirect Potable Reuse Pilot Program - Establishment* and MDE's own bill of this Session, HB 25/SB 265 of 2025 *Environment - Reservoir Augmentation Permit - Establishment*. As a type of water reuse, MAR can be useful where an aquifer is facing a water shortage, being threatened with saltwater intrusion, or causing ground subsidence. MAR technology has been used in Western states, such as California and Texas, for years and its general principles are well-established.

However, without adequate safeguards, MAR can pose the risk of groundwater contamination. Reclaimed water that is being injected back into an underground aquifer should be treated in multiple ways to avoid accidental contamination. MDE has worked closely with both the Maryland Department of Natural Resources and Anne Arundel County to craft the attached amendments, which include water treatment requirements based on California's successful model and applicable safeguards that were included in HB 848/SB 407.

With these amendments, MDE believes SB 930's pilot program can be safe, beneficial, and effective. Accordingly, MDE requests a **FAVORABLE WITH AMENDMENTS** report for SB 930.

SENATE BILL 930

M3 SB 942/24 – EEE 5lr2333 CF 5lr2335

By: Senator Gile Introduced and read first time: January 28, 2025 Assigned to: Education, Energy, and the Environment

A BILL ENTITLED

AN ACT concerning

Environment – Managed Aquifer Recharge Pilot Program – Establishment

FOR the purpose of establishing the Managed Aquifer Recharge Pilot Program; authorizing the Department of the Environment to review, permit, and regulate a process to test the use of treated reclaimed water from a demonstration facility as a source for groundwater augmentation under certain circumstances; and generally relating to the Managed Aquifer Recharge Pilot Program.

BY repealing and reenacting, with amendments,

Article – Environment Section 1–601(a) Annotated Code of Maryland (2013 Replacement Volume and 2024 Supplement)

BY repealing and reenacting, without amendments,

Article – Environment <u>SectionSections 7-201(a) and (l), 9-101(a), (b), (e) and (g), and</u> 9–301(a) and (f) and (h) Annotated Code of Maryland (2014 Replacement Volume and 2024 Supplement)

BY adding to

Article – Environment Section 9–303.4 Annotated Code of Maryland (2014 Replacement Volume and 2024 Supplement)

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Laws of Maryland read as follows:

Article – Environment

1-601.

(a) Permits issued by the Department under the following sections shall be issued in accordance with this subtitle:

(1) Air quality control permits to construct subject to \S 2–404 of this article;

(2) Permits to install, materially alter, or materially extend landfill systems, incinerators for public use, or rubble landfills subject to § 9–209 of this article;

(3) Permits to discharge pollutants to waters of the State issued pursuant to § 9–323 of this article;

(4) Permits to install, materially alter, or materially extend a structure used for storage or distribution of any type of sewage sludge issued, renewed, or amended pursuant to 9–234.1 or 9–238 of this article;

(5) Permits to own, operate, establish, or maintain a controlled hazardous substance facility issued pursuant to 7–232 of this article;

(6) Permits to own, operate, or maintain a hazardous material facility issued pursuant to § 7–103 of this article;

(7) Permits to own, operate, establish, or maintain a low-level nuclear waste facility issued pursuant to § 7–233 of this article; [and]

(8) Potable reuse permits issued in accordance with § 9–303.2 of this article; AND

(9) MANAGED AQUIFER RECHARGE PILOT PERMITS ISSUED IN ACCORDANCE WITH § 9–303.4 OF THIS ARTICLE.

<u>7-201.</u>

- (a) In this subtitle the following words have the meanings indicated.
- (1) <u>"Hazardous substance" means any substance:</u>
 - (1) Defined as a hazardous substance under \S 101(14) of the federal act; or

(2) Identified as a controlled hazardous substance by the Department in the Code of Maryland Regulations.

<u>9-101.</u>

- (a) In this title the following words have the meanings indicated.
- (b) "Discharge" means:

(1) The addition, introduction, leaking, spilling, or emitting of a pollutant into the waters of this State; or

- (2) The placing of a pollutant in a location where the pollutant is likely to pollute.
- (e) <u>"Industrial user" means:</u>
 - (1) <u>A person who is engaged in manufacturing, fabricating, or assembling goods; or</u>

(2) <u>A member of any class of significant producers of pollutants identified under rules or</u> regulations adopted by:

- (i) <u>The Secretary; or</u>
- (ii) The administrator of the United States Environmental Protection Agency.

(g) <u>"Pollutant" means:</u>

- (1) Any waste or wastewater that is discharged from:
 - (i) <u>A publicly owned treatment works; or</u>
 - (ii) <u>An industrial source; or</u>

(2) Any other liquid, gaseous, solid, or other substance that will pollute any waters of this

State.

9-301.

(a) In this subtitle the following words have the meanings indicated.

- (f) "Reclaimed water" means sewage that:
 - (1) Has been treated to a high quality suitable for various reuses; and
 - (2) Has a concentration of less than:
 - (i) 3 fecal coliform colonies per 100 milliliters;
 - (ii) 10 milligrams per liter of 5-day biological oxygen demand; and
 - (iii) 10 milligrams per liter of total suspended solids.

(h) (1) "Sewerage system" means:

(i) The channels used or intended to be used to collect and dispose of sewage; and

(ii) Any structure and appurtenance used or intended to be used to collect or prepare sewage for discharge into the waters of this State.

(2) "Sewerage system" includes any sewer of any size.

(3) "Sewerage system" does not include the plumbing system inside any building served by the sewerage system.

9–303.4.

(A) (1) IN THIS SECTION THE FOLLOWING WORDS HAVE THE MEANINGS INDICATED.

(2) <u>"Aquifer" means a geologic formation, group of formations, or part of a</u> <u>FORMATION THAT IS CAPABLE OF YIELDING A SIGNIFICANT AMOUNT OF WATER TO A WELL OR SPRING.</u>

(3) <u>"Confined aquifer" means an aquifer under pressure from a relatively impervious</u> LAYER OF MATERIAL LYING ABOVE THE AQUIFER.

(4) **"D**EMONSTRATION FACILITY" MEANS AN ADVANCED WATER TREATMENT FACILITY APPROVED UNDER A MANAGED AQUIFER RECHARGE PERMIT TO TREAT RECLAIMED WATER FOR USE AS A SOURCE FOR TESTING GROUNDWATER AUGMENTATION.

(5) <u>"Groundwater augmentation" means the injection of reclaimed water into an</u> <u>AQUIFER FOR ANY PURPOSE BESIDES DISCHARGE.</u>

(6) "HAZARDOUS SUBSTANCE" HAS THE MEANING STATED IN § 7-201 OF THIS ARTICLE.

(3)(7) "MANAGED AQUIFER RECHARGE PERMIT" MEANS A PERMIT ISSUED BY THE DEPARTMENT TO AUTHORIZE AND REGULATE THE TREATMENT AND UNDERGROUND INJECTION OF TREATED RECLAIMED WATER FOR THE PURPOSE OF TESTING THE FEASIBILITY OF AND REQUIREMENTS FOR SAFELY CONDUCTINGFOR GROUNDWATER AUGMENTATION.

(4) "PFAS CHEMICALS" MEANS PER- AND POLYFLUOROALKYL SUBSTANCES.

(5)(8) "PILOT PROGRAM" MEANS THE MANAGED AQUIFER RECHARGE PILOT PROGRAM.

(B) <u>Except as provided in this section, a person may not perform groundwater augmentation.</u>

(C) THERE IS A MANAGED AQUIFER RECHARGE PILOT PROGRAM IN THE DEPARTMENT.

(c)(d) The purpose of the Pilot Program is to authorize the testing of the regulated, regulate, and evaluate the use of treated reclaimed water as a source for groundwater augmentation through the issuance of managed aquifer recharge permits.

(b)(e) (1) The Department may review, permit, and regulate a process to test the use of treated reclaimed water from a demonstration facility as a source for groundwater augmentation through a managed aquifer recharge permit if the Department determines that:

(1)(1) The <u>demonstration facilitygroundwater augmentation</u> will address a groundwater supply or quality problem that is <u>occurring or reasonably</u> anticipated to occur in the next 25 years, including land subsidence or saltwater intrusion;

(II)(2) The proposed location of the demonstration facility is suitable to inform the eventual location of a full-scale or for long-term implementation site of groundwater augmentation;

(III)(3) The reclaimed water will be treated at $\frac{1}{2}$ demonstration facility to meet or surpass the following requirements:

1.(1) PRIMARY AND SECONDARY MAXIMUM CONTAINMENTCONTAMINANT LEVELS

ESTABLISHED BY:

A. THE U.S. ENVIRONMENTAL PROTECTION AGENCY UNDER 40 C.F.R.

<u>§§ 141 and 143; and</u>

B. THE DEPARTMENT UNDER COMAR 26.04.01 THE U.S ENVIRONMENTAL PROTECTION AGENCY OR THE DEPARTMENT;

2.(II) <u>At least three separate treatment processes that include:</u>

<u>1.</u> OXIDATION TREATMENT;

2. TREATMENT FOR REMOVAL OF PATHOGENS AT THE WASTEWATER TREATMENT STAGE AND ADVANCED WATER TREATMENT STAGE-THAT, IN TOTAL, MEETS OR EXCEEDS:

- A. 12 LOG FOR ENTERIC VIRUS REDUCTION;
- **B. 10** LOG FOR GIARDIA CYST REDUCTION; AND
- C. 10 LOG CRYPTOSPORIDIUM OOCYST REDUCTION; AND
- 3. For groundwater augmentation in a confined aquifer,

REVERSE OSMOSIS;

3.(III) MAXIMUM CONCENTRATIONS OF PFAS CHEMICALS ESTABLISHED BY THE DEPARTMENT AND SPECIFIED IN ANY PRIMARY DRINKING WATER REGULATIONS ESTABLISHED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY IN A FINAL RULEMAKING UNDER THE FEDERAL SAFE DRINKING WATER ACT; TREATMENT FOR REMOVAL OF ANY HAZARDOUS SUBSTANCE IN THE RECLAIMED WATER THAT DOES NOT HAVE A MAXIMUM CONTAMINANT LEVEL OR EFFLUENT LIMIT ESTABLISHED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE DEPARTMENT TO A LEVEL THAT IS PROTECTIVE OF PUBLIC HEALTH WITH A REASONABLE MARGIN OF SAFETY; AND

(IV) <u>TREATMENT TO ENSURE THAT TOTAL ORGANIC CARBON (TOC) DOES NOT</u> EXCEED 0.5 MG/L BASED ON A 20-WEEK RUNNING AVERAGE OF ALL TOC RESULTS AND THE AVERAGE OF THE FOUR MOST RECENT TOC TEST RESULTS;

(iv)(4) The treated reclaimed water will undergo testing and reporting to verify that the requirements of item (iii) of this paragraphsubsection are met;

(v)(5) The applicant has conducted an analysis to evaluate alternatives to aquifer recharge groundwater augmentation;

(vi)(6) The applicant has in place a detailed testing and monitoring plan to demonstrate facility performance and groundwater compatibility during underground injectiongroundwater augmentation, including establishing parameters for authorizing underground injections and requiring alternative methods of use or disposal_discharge when the injection parameters are not met;

(vii)(7) The applicant has identified all wells that withdraw water from the aquifer within 2 years of travel time from the location where groundwater augmentation is proposed and evaluated the potential impact to those wells;

(8) <u>The applicant has identified all industrial users that discharge to the</u> sewerage system from which the reclaimed water is received and the pollutants in each of those industrial user's discharge;

(9) THE APPLICANT HAS PERFORMED A HYDROGEOLOGICAL INVESTIGATION THAT INCLUDES:

(1) <u>A DESCRIPTION OF THE GEOLOGIC AND HYDROGEOLOGICAL SETTING OF THE</u> PORTION OF THE AQUIFER THAT MAY BE AFFECTED BY GROUNDWATER AUGMENTATION;

(II) A DETAILED DESCRIPTION OF THE STRATIGRAPHY BENEATH THE PROJECT;

(III) <u>A MAP OF THE EXISTING HYDROGEOLOGY AND THE HYDROGEOLOGY</u> ANTICIPATED AS A RESULT OF THE GROUNDWATER AUGMENTATION BASED ON AT LEAST FOUR ROUNDS OF CONSECUTIVE OUARTERLY MONITORING;

(IV) <u>A MAP SHOWING QUARTERLY GROUNDWATER ELEVATION CONTOURS, VECTOR</u> FLOW DIRECTIONS, AND CALCULATED HYDRAULIC GRADIENTS USING AT LEAST FOUR ROUNDS OF CONSECUTIVE QUARTERLY MONITORING;

(V) <u>A MAP SHOWING THE LOCATION AND BOUNDARIES OF THE PROJECT AND THE</u> ZONE OF POTENTIAL DRINKING WATER WELL CONSTRUCTION; AND

(VI) A SUMMARY OF THE RESULTS FROM AT LEAST FOUR GROUNDWATER SAMPLES WITH AT LEAST ONE SAMPLE COLLECTED DURING EACH QUARTER FROM EACH POTENTIALLY AFFECTED AQUIFER THAT INCLUDES TOTAL NITROGEN, TOTAL ORGANIC CARBON, AND AN ANALYSIS OF ANY OTHER CONSTITUENT REQUESTED BY THE DEPARTMENT;

(10) The applicant has submitted a mitigation plan to address environmental and safe drinking water risks <u>that includes a plan to provide an alternative drinking water</u> source to well users who may be affected by the groundwater augmentation on a temporary or <u>permanent basis</u>;

(11) THE APPLICANT HAS SUBMITTED A TRACER STUDY TO VERIFY THE RECLAIMED WATER'S RETENTION TIME IN THE AQUIFER UNDER HYDRAULIC CONDITIONS THAT ARE REPRESENTATIVE OF NORMAL OPERATIONS AT THE DEMONSTRATION FACILITY;

(12) <u>The applicant identifies the locations where at least two monitoring</u> wells will be installed that are no fewer than 14 days and no more than 180 days of travel time downgradient from the injection well and at least 30 days upgradient from the nearing drinking water well:

(13) THE APPLICANT SUBMITS A DETAILED OPERATION AND MAINTENANCE PLAN TO THE DEPARTMENT;

(viii)(14) The applicant gives the Department the right of entry on the permit site at any reasonable time to inspect or investigate for a violation or any potential violation of the managed aquifer recharge permit;

(15) THE PROCESS INCLUDES APPROPRIATE RECORD-KEEPING REQUIREMENTS; AND

(x)(16) The process complies with all other applicable statutory and regulatory requirements.

(2) The Department may approve the use by a demonstration facility of any drinking water treatment technologies that have the capability to meet the requirements of paragraph (1)(h) of this subsection, including nonmembrane treatment systems.

 $(\underline{\mathbf{E}})(\underline{\mathbf{F}})$ (1) The Department may include in a managed aquifer recharge permit any term, condition, or requirement that the Department considers appropriate to protect public health or the environment.

(2) The requirements of a managed aquifer recharge permit are supplemental to and do not override any other law, regulation, permit, order, or decree.

(3) THE PROVISIONS OF TITLE 1, SUBTITLE 6 OF THIS ARTICLE SHALL GOVERN THE ISSUANCE OF MANAGED AQUIFER RECHARGE PERMITS.

(4) IN ADDITION TO THE NOTICE REQUIRED IN TITLE 1, SUBTITLE 6 OF THIS ARTICLE, THE APPLICANT SHALL SEND WRITTEN NOTICE OF THE APPLICATION FOR A MANAGED AQUIFER RECHARGE PERMIT TO EACH OWNER OF EACH PROPERTY WHERE A WELL IS IDENTIFIED IN ITEM (7) OF SUBSECTION (E) OF THIS SECTION.

(G) THE DEPARTMENT SHALL ACCEPT APPLICATIONS FOR MANAGED AQUIFER RECHARGE PERMITS FROM JANUARY 2, 2026 TO JANUARY 3, 2027.

(F)(H) A SUCCESSFUL APPLICATION FOR A MANAGED AQUIFER RECHARGE PERMIT SHALL:

(1) **D**EMONSTRATE TO THE SATISFACTION OF THE **D**EPARTMENT:

(I) THE ABILITY TO COMPLY WITH THE REQUIREMENTS OF THIS SECTION;

(II) THE APPLICANT'S AVAILABLE FUNDING FOR THE CONSTRUCTION AND OPERATION OF THE DEMONSTRATION FACILITY <u>AND IMPLEMENTATION OF ANY CONTINGENCY OR EMERGENCY PLAN</u>;

(III) THE TECHNICAL AND ADMINISTRATIVE CAPACITY TO **PERFORM THE PROCESS COVERED** UNDERCOMPLY WITH THE PERMIT; AND

(IV) THAT ALL NECESSARY PLANNING AND ENGINEERING DESIGN IS COMPLETE; AND

(2) INCLUDE ANY ADDITIONAL INFORMATION REQUESTED BY THE DEPARTMENT.

(G)(I) THE DEPARTMENT MAY REFUSE TO ISSUE A MANAGED AQUIFER RECHARGE PERMIT IF:

(1) THE APPLICANT FAILS TO PROVIDE ANY INFORMATION REQUESTED BY THE DEPARTMENT;

(2) THE APPLICANT FAILS OR REFUSES TO ALLOW THE DEPARTMENT TO INSPECT THE PERMIT SITE;

(3) THE DEPARTMENT FINDS THAT ISSUANCE OF THE PERMIT WOULD VIOLATE ANY STATE OR FEDERAL LAW OR ANY REGULATION ADOPTED UNDER ANY STATE OR FEDERAL LAW;

(4) The source of the reclaimed water fails to comply with any State or federal law, any regulation adopted under any State or federal law, or any permit; or

(5) The applicant fails to demonstrate compliance with this section to the Department's satisfaction; or

(6) <u>The Department finds that the proposed groundwater augmentation may create an</u> UNREASONABLE RISK TO PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT.

(II) (1) A managed aquifer recharge permit issued under the Pilot Program shall be effective for 105 years from the date of issuance.

(2) THE DEPARTMENT MAY RENEW A MANAGED AQUIFER RECHARGE PERMIT FOR AN ADDITIONAL PERIOD OR PERIODS OF 5 YEARS FOLLOWING ADMINISTRATIVE REVIEW BY THE DEPARTMENT AND SUBJECT TO THE PROVISIONS OF TITLE 1, SUBTITLE 6 OF THIS ARTICLE.

 $(\mathbf{H})(\mathbf{K})$ The Department may revoke a managed aquifer recharge permit issued under this section if the Department finds that:

(1) THE APPLICATION INCLUDED FALSE OR INACCURATE INFORMATION;

(2) CONDITIONS OR REQUIREMENTS OF THE PERMIT HAVE BEEN OR ARE ABOUT TO BE VIOLATED;

(3) SUBSTANTIAL DEVIATION FROM PLANS, SPECIFICATIONS, OR REQUIREMENTS HAS OCCURRED OR IS ABOUT TO OCCUR;

(4) THE DEPARTMENT IS REFUSED ENTRY TO ANY PREMISES FOR THE PURPOSE OF **INSPECTING THE PROCESSINSPECTION** TO ENSURE COMPLIANCE WITH THE PERMIT;

(5) A CHANGE IN CONDITIONS EXISTS THAT REQUIRES THE PERMANENT REDUCTION OR ELIMINATION OF THE USE OF TREATED RECLAIMED WATER FOR GROUNDWATER AUGMENTATION;

(6) THERE IS ANY NONCOMPLIANCE WITH A DISCHARGE PERMIT, <u>PRETREATMENT STANDARD</u>, OR A PRETREATMENT REQUIREMENT THAT MAY AFFECT THE RECLAIMED WATER IN ANY MANNER;

(7) ANY STATE OR FEDERAL WATER QUALITY STANDARD OR EFFLUENT LIMITATION HAS BEEN OR IS THREATENED TO BE VIOLATED;

(8) Any State or federal requirement established under the federal Safe Drinking Water Act, <u>this subtitle</u>, Subtitle 4 of this title, or Title 12 of this article has been or is threatened to be violated; or

(9) The treated reclaimed water may threaten public health, safety, comfort, or the environment.

 $(\mathbf{J})(\mathbf{L})$ (1) On or before September 1 each year, each holder of a managed aquifer recharge permit shall report to the Department on:

(I) THE APPLIED SCIENTIFIC RESULTS OF ANY DEMONSTRATION FACILITY OR GROUNDWATER AUGMENTATION ACTIVITIES UNDERTAKEN UNDER THE PILOT PROGRAM; AND (II) ANY RECOMMENDATIONS FOR THE PILOT PROGRAM BASED ON THE HOLDER'S EXPERIENCE IN THE PILOT PROGRAM.

(2) ON OR BEFORE DECEMBER 31-EACH YEAR, 2028, THE DEPARTMENT SHALL REPORT TO THE GOVERNOR AND, IN ACCORDANCE WITH § 2–1257 OF THE STATE GOVERNMENT ARTICLE, THE GENERAL ASSEMBLY ON:

(I) THE STATUS OF THE PILOT PROGRAM;

(II) ANY SCIENTIFIC RESULTS AND RECOMMENDATIONS REPORTED UNDER PARAGRAPH (1) OF THIS SUBSECTION;

(III) WHETHER THE PILOT PROGRAM SHOULD BE MODIFIED, EXTENDED, OR MADE PERMANENT; AND

(IV) ANY STATUTORY OR REGULATORY CHANGES THAT THE DEPARTMENT RECOMMENDS TO PERMANENTLY AUTHORIZE THE REGULATED USE OF TREATED RECLAIMED WATER AS A SOURCE FOR GROUNDWATER AUGMENTATION, IF APPROPRIATE.

(K)(M) THE DEPARTMENT MAY ADOPT REGULATIONS TO CARRY OUT THIS SECTION.

SECTION 2. AND BE IT FURTHER ENACTED, That this Act shall take effect October 1, 2025. It shall remain effective for a period of 11 years, and, at the end of September 30, 2036, this Act, with no further action required by the General Assembly, shall be abrogated and of no further force and effect.