Anne Arundel County Clean Water Program

Our wAAter Public Advisory Group Meeting

November 16, 2022

Agenda

01 **Purpose and Objectives**

02 **Small Systems**

03 **Septic-to-Sewer**

04 **Next Steps**

01 Purpose and Objectives

Meeting Purpose

- To provide an overview of the Small Systems Upgrade program and the Septic Connection Program
- To inform advisory group members about the key successes and challenges of implementing these programs
- To receive feedback on Small Systems and Septic Connection programs

The Clean Water Program

5 initiatives | one strategy

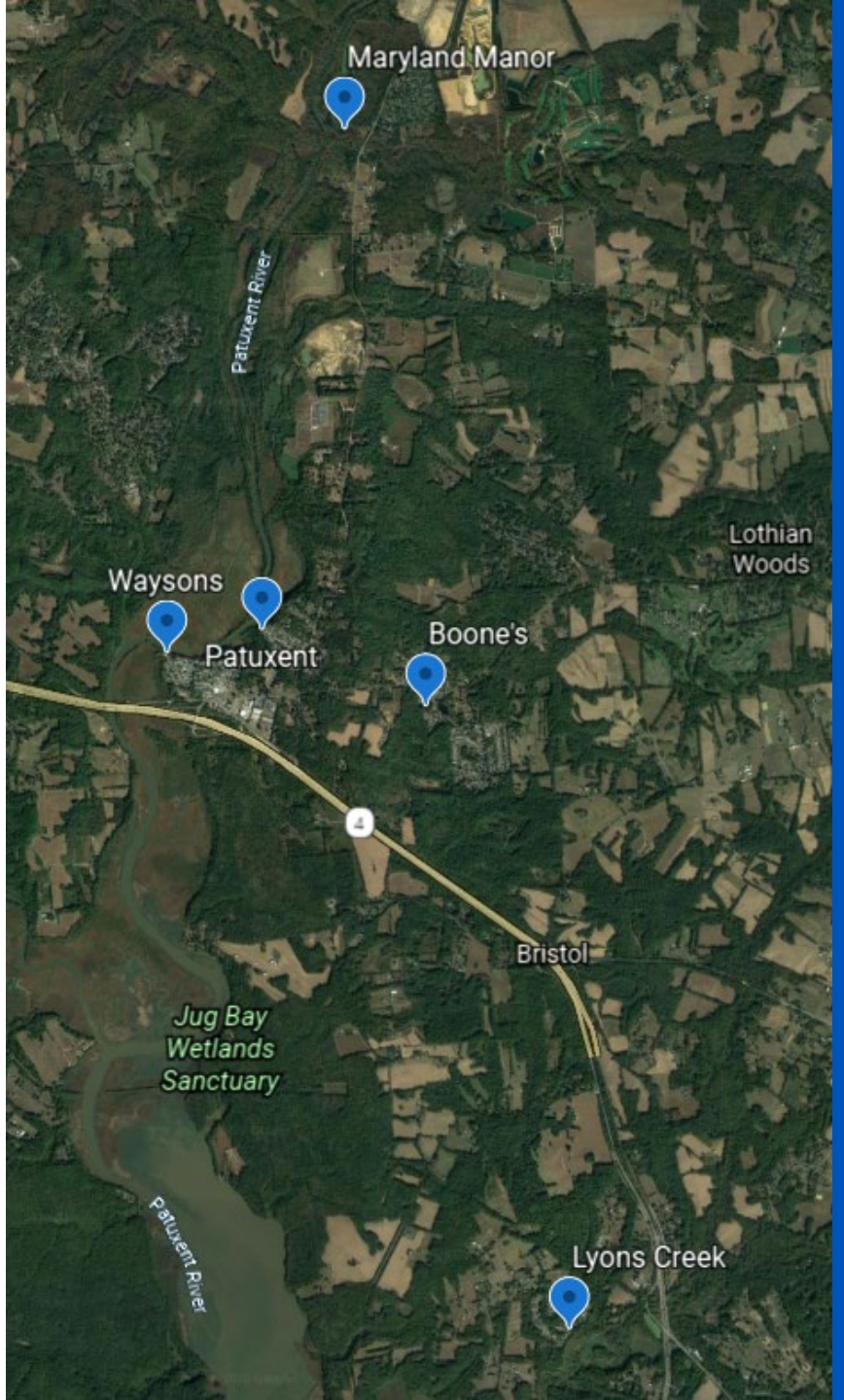
02 Small Systems

Small Systems

- To work with smaller Anne Arundel County communities to find cost-effective ways to improve their privately-owned wastewater treatment or to connect them to a County-owned water reclamation facility.

Program Goals

- Plant upgrades for reduced N discharge of nearly 12,000 lb/yr to Patuxent River watershed
  - 5 existing plants discharge to Patuxent River and tributaries
- Total treatment capacity and number of connections not intended to be increased
- Improved plant performance and accountability under County ownership and operation



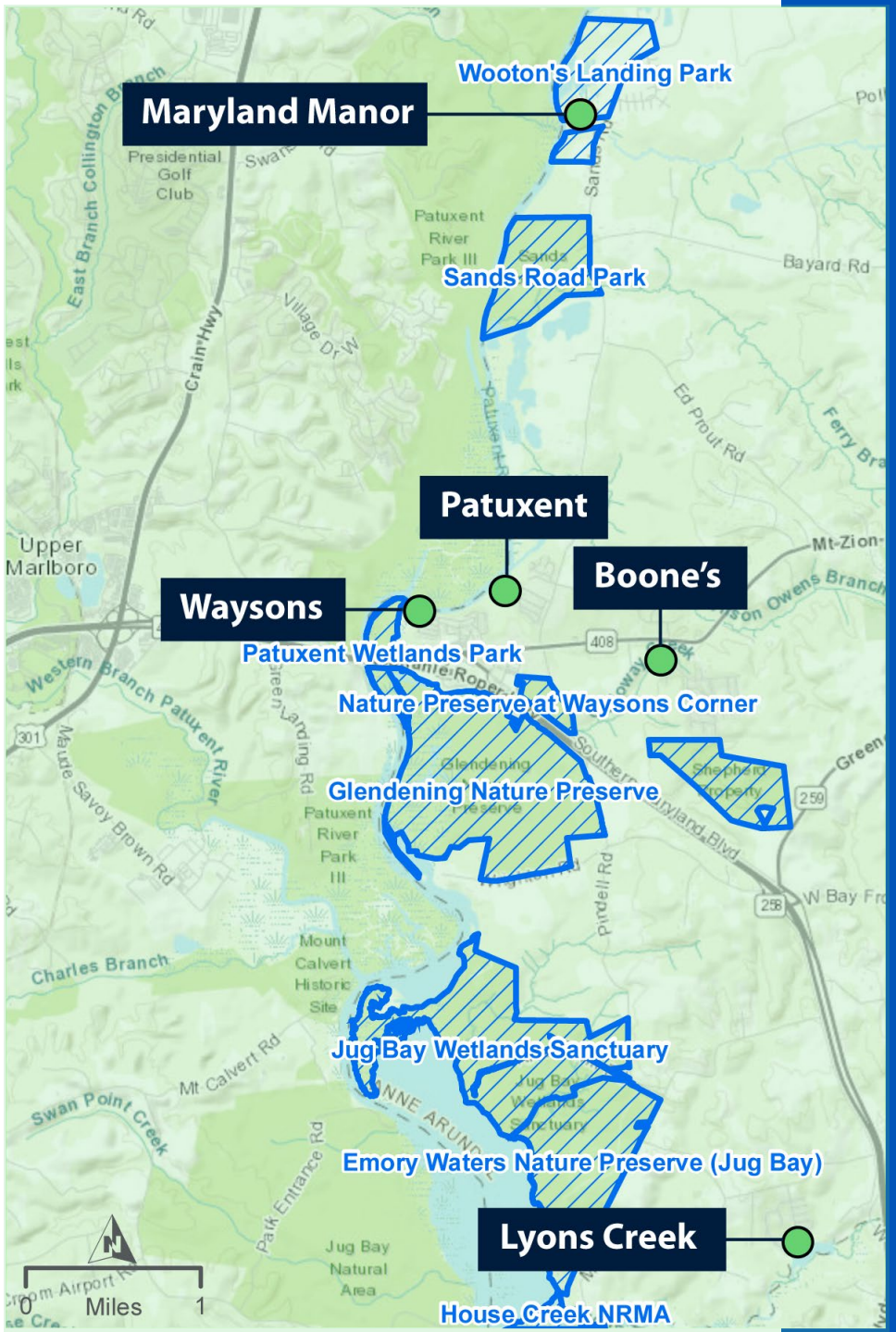
Wasteload Allocations, N Reduction

Plant	Owner	WLA (lb/yr N)	Permitted Flow (MGD)	Discharge at 4 mg/L (lb/yr N)	Reduction (lb/yr N)
Patuxent	Horizon	1,508	0.035	426	1,082
Lyons Creek	Horizon	4,185	0.070	852	3,333
Boone's	Horizon	3,792	0.080	974	2,818
Waysons	RHP	2,565	0.075	913	1,652
Maryland Manor	Horizon	3,837	0.090	1,096	2,741
Total		**15,887**	**0.350**	**4,261**	**11,626**

For reference, it takes about 1,200 septic tank conversions to achieve the same level of Total Nitrogen reduction.

Benefits

- Improved plant performance and reliability
- Capital costs for County low compared to other TN reduction approaches
- Improve local water quality in areas with several public access points.
- Areas generally are lower income based on census tract information.
- State funding expected to cover the majority of the construction costs

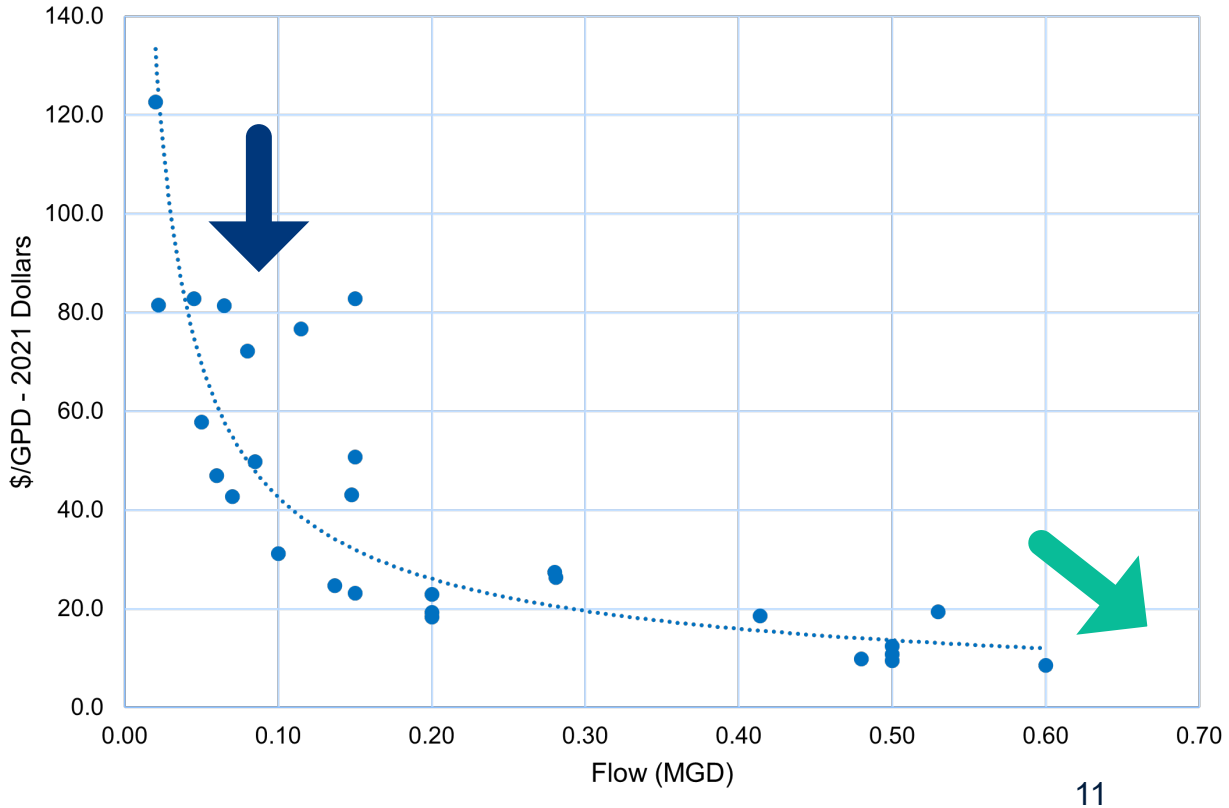


Sensitivities / Challenges

- Navigating best interest of multiple stakeholder groups
- Private owner funding
- Operational costs high relative to system-wide averages
- Concern about perception of promoting growth – need to address with policy
  - No change in land use
  - No change in permitted density
- Affordability

Relative Treatment Costs Increase at Lower Flows

Costs in $/gpd vs. Flow in million gallons per day



Thoughts?

Next Steps

- Initiate contract for designs
- Work with existing owners on agreement
- Public Outreach

Potential Issues

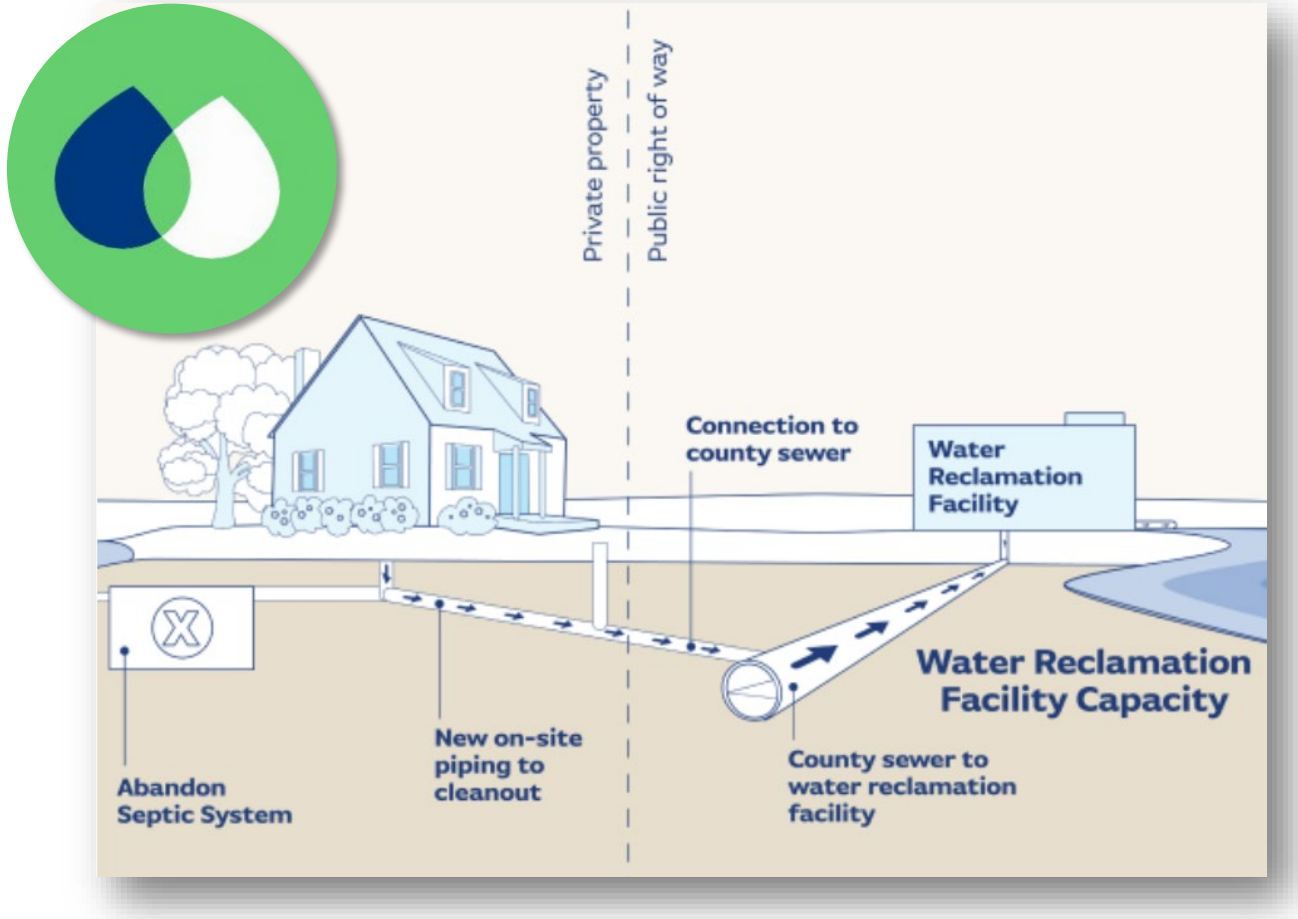
- Land use and growth management
- Maintaining Affordability
- Operating costs
- Avoiding unintended consequences
- Public Outreach

03 Septic-to-Sewer

Septic-to-Sewer Connections

Goals:

- Convert eligible communities from septic systems to publicly owned water reclamation facilities operating at advanced treatment levels
- Reduce the costs of converting from private septic tanks to the county sewer system
- Convert up to 6,000 private septic systems to public sewer connections over the next 30 years.



Septic-to-Sewer Connection Program

- Task force initiated to identify options
  - Input on policies, prioritization criteria, legislation, subsidies/incentives, funding, and outreach
- County passed legislation with broad support to facilitate septic connections
  - Subsidies
  - Deferments
- Developing application and implementation plans

Application & Petition Process

Community-Driven Exploratory Phase

Step 1

Community requests informational meeting

Pre-Application period

You are HERE!

Step 2

Community submits application & DPW reviews

DPW presents costs & next steps to selected communities

Approx. 3 months

Step 3

Community submits petition to DPW

DPW to conduct preliminary engineering & cost updates

Approx. 9 months

Community Commitment

Step 4

Community votes to proceed

Needs majority in favor to proceed

Approx. 3 months

Step 5

DPW prepares final design & costs then constructs new system

Master Plumber connects residences to County sewer system

Approx. 2.5 years

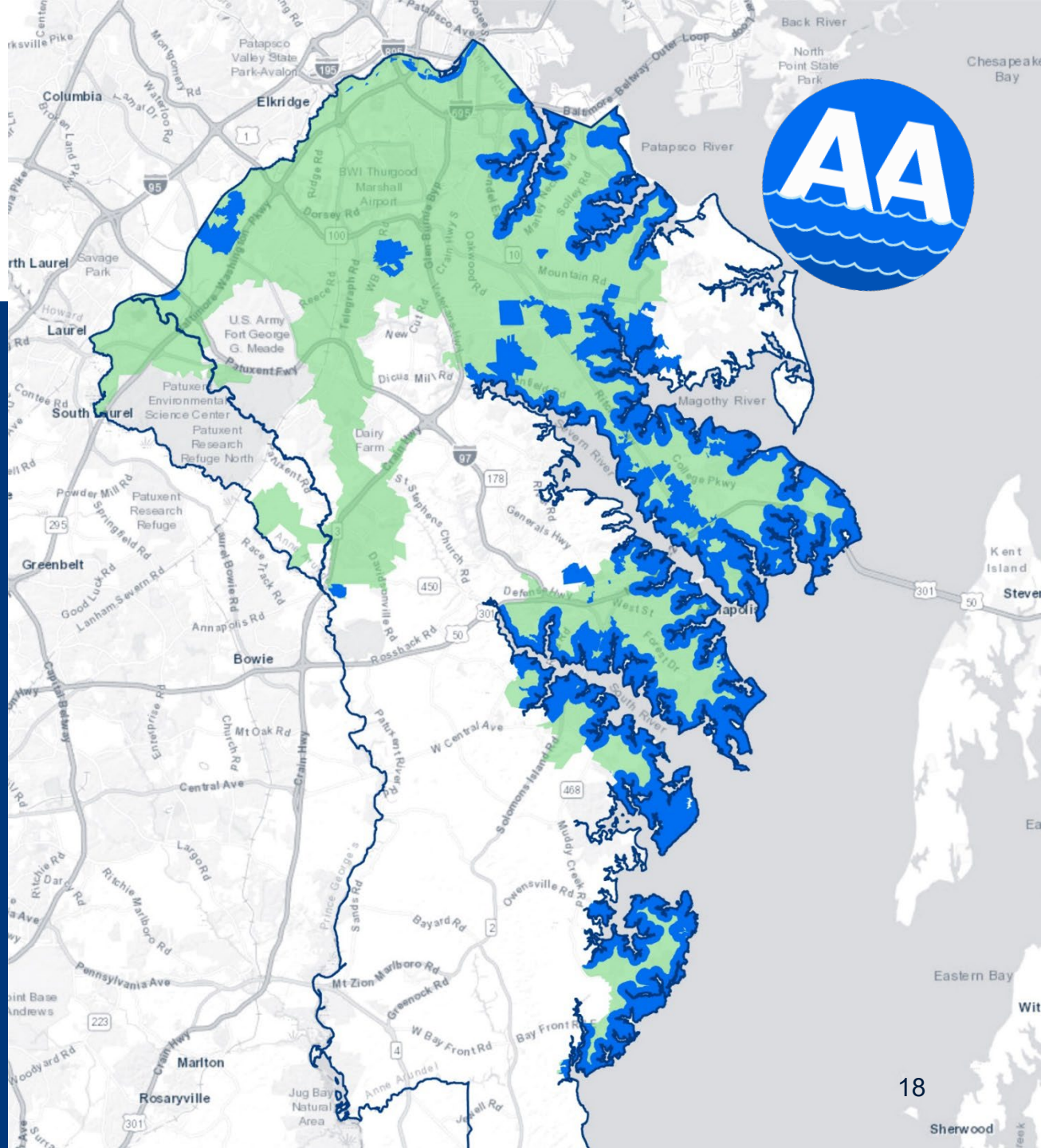
Community Connected!

Septic Task Force Recommendations Review

1.	New Application Process for County-Directed Program	**Complete**
2.	Prioritization of Septic to Sewer Connections	**Complete**
3.	Existing Petition Process to Remain, but with Modifications	**Complete**
4.	New Program to be Voluntary/Mandatory	**Complete**
5.	Open Application Program	**Complete**
6.	Assessment Charges Based on Property Tax Account or Equivalent Dwelling Units (EDUs)	**Complete**
7.	Deferment of Septic Conversion Costs Offered More Broadly	**Complete**
8.	County Subsidy to Reduce Property Owner Costs for Septic Conversion	**Complete**
9.	Impact of Subsidy on DPW's Financing Structure	**Complete**
10.	Customer Willingness to Pay	**In Progress**
11.	Public Outreach is Critical to the Success of the Septic Conversion Program	**Partially Complete**
12.	Alternative Funding Sources Should be Considered	**In Progress**
13.	Additional Charges or Fees not Recommended	**Complete**
14.	Sunset Provision not Desired in Proposed Legislation	**Complete**

Septic-to-Sewer Eligibility

- Critical Area
- OWMPAs



ourwaater.org

Community Response

- DPW has hosted **27 meetings** since June 2021
  - Meetings are virtual with recordings made for future reference
- Comments received through website are responded to directly
- **8 communities** have submitted an application
  - None have moved forward with petition

Top Comments/Questions

Cost

- Why doesn't the County pay for this?
- Why do residents have to pay for sewer service?
- The program is too costly for those on fixed income.

Related Task Force Recommendation

- Align customer costs with willingness to pay
- Identify Alternative Funding Sources

Challenges

- County's requirement for "financially sustainable" projects
- Diverse homeowner financial situations (waterfront vs. neighborhood interior)

Opportunities

- WPRP funding

Top Comments/Questions

Application and Petition Process	Related Task Force Recommendation	Challenges	Opportunities
• I don't want to be forced to connect to public sewer	• Voluntary/ Mandatory	• Difficult to get 50% vote • HOAs reluctant to support a project that can cause conflict within community	• Community-driven program

Top Comments/Questions

Deferment	Related Task Force Recommendation	Challenges	Opportunities
• How does the deferred payment option impact the sale of a home?	• Deferment of Septic Conversion Costs Offered More Broadly	• Concern by homeowners about saddling heirs with payback obligation	• Deferment significantly brings down annual assessments

Top Comments/Questions

Development & Zoning	Related Task Force Recommendation	Challenges	Opportunities
• How will public sewer connection impact zoning? • Will public sewer lead to increased development?	• N/A	• Convincing homeowners that program is not development-driven	• Remind residents of County's commitment to Smart Growth goals

Thoughts?

Next Steps

- Considering use of WPRP funds to support program as a cost effective alternative
- Develop alternative approaches utilizing more private sector involvement

Explore Additional Recommendations

- “Banking system” for development credits
- Pollutant Impact Fee for existing homes or new construction
- Early hook-up incentives
- Development of an “all-in” cost approach
- More emphasis on BAT system conversion

05 Next Steps

Next Steps: Meeting Series Overview

	Date	Location	Topic
Meeting 2	November 16, 2022	Heritage Complex-Independence Room	Septic-to-Sewer and Small Systems
Meeting 3	**December 14, 2022**	**Patuxent Water Reclamation Facility** ***1640 Professional Blvd. Crofton MD, 21114***	**Site visit to MAR pilot demonstration and MAR discussion**
Meeting 4	January 25, 2023	Heritage Complex-Independence Room	Project Prioritization Exercise
Meeting 5	February 22, 2023	Heritage Complex-Independence Room	Present Updated IMP

Our wAAter.

THE ANNE ARUNDEL CLEAN WATER PROGRAM

Thank you!

Extra Slides

Anne Arundel County Clean Water Program

Septic-to-Sewer Community Meeting Slides

What are the benefits?

FOR THE HOMEOWNER

- May relieve potential restrictions on building additions.
- No need to reserve space for existing and future drain fields
- May positively impact home value
  - Consult Realtor for potential to property value

What are the benefits?

FOR THE HOMEOWNER

- Can improve nearby waterways
- Avoids maintenance costs for septic systems

Septic Costs Avoided*

- Traditional septic O&M
  - $100/year (pump out every 2-3 years)
  - $5,000-$20,000 for drain field replacement (twice over 40 years)
    - Could lead to holding tank or mound system if land not available
  - Upgrade to BAT if system fails

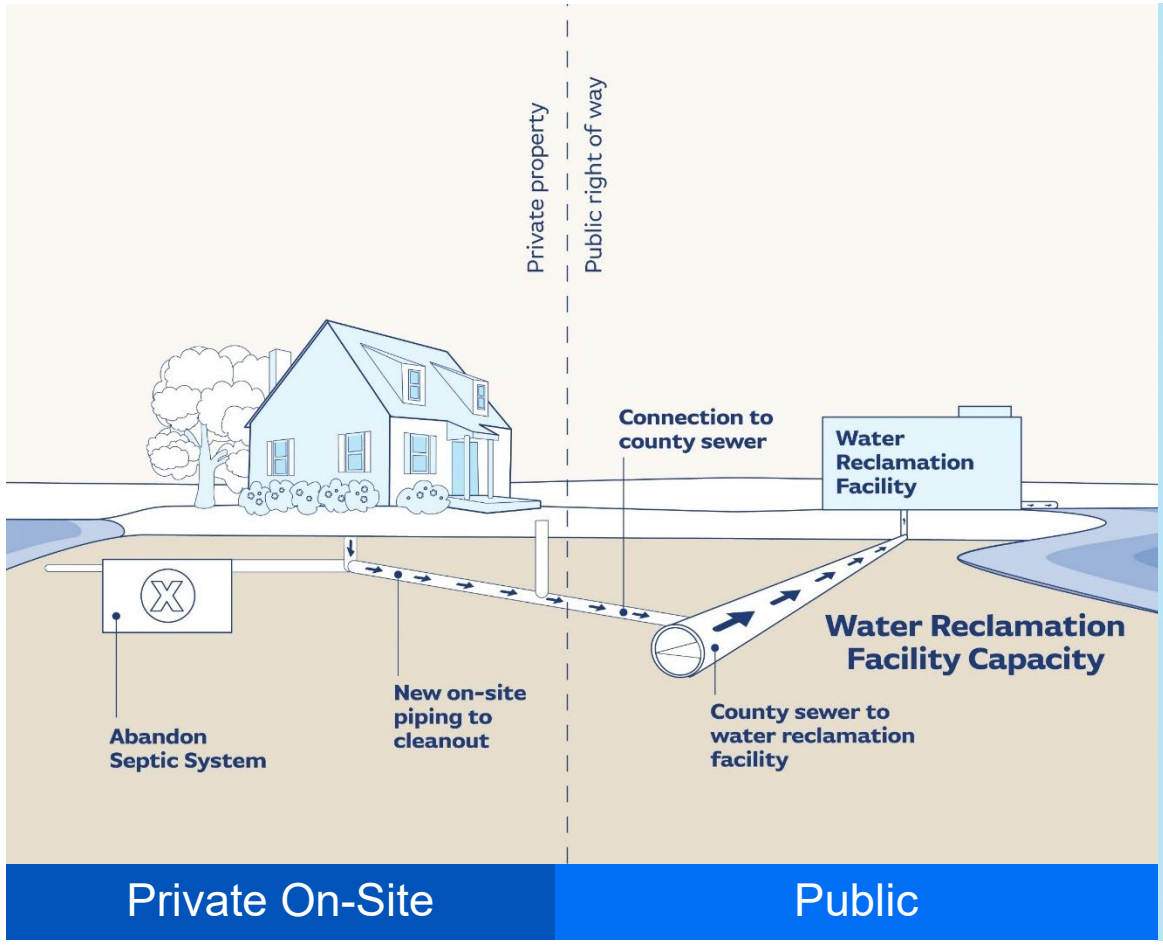
- BAT O&M
  - $200-$500/year
  - $5,000-$20,000 for drain field replacement (twice over 40 years)
    - Could lead to holding tank or mound system if land not available

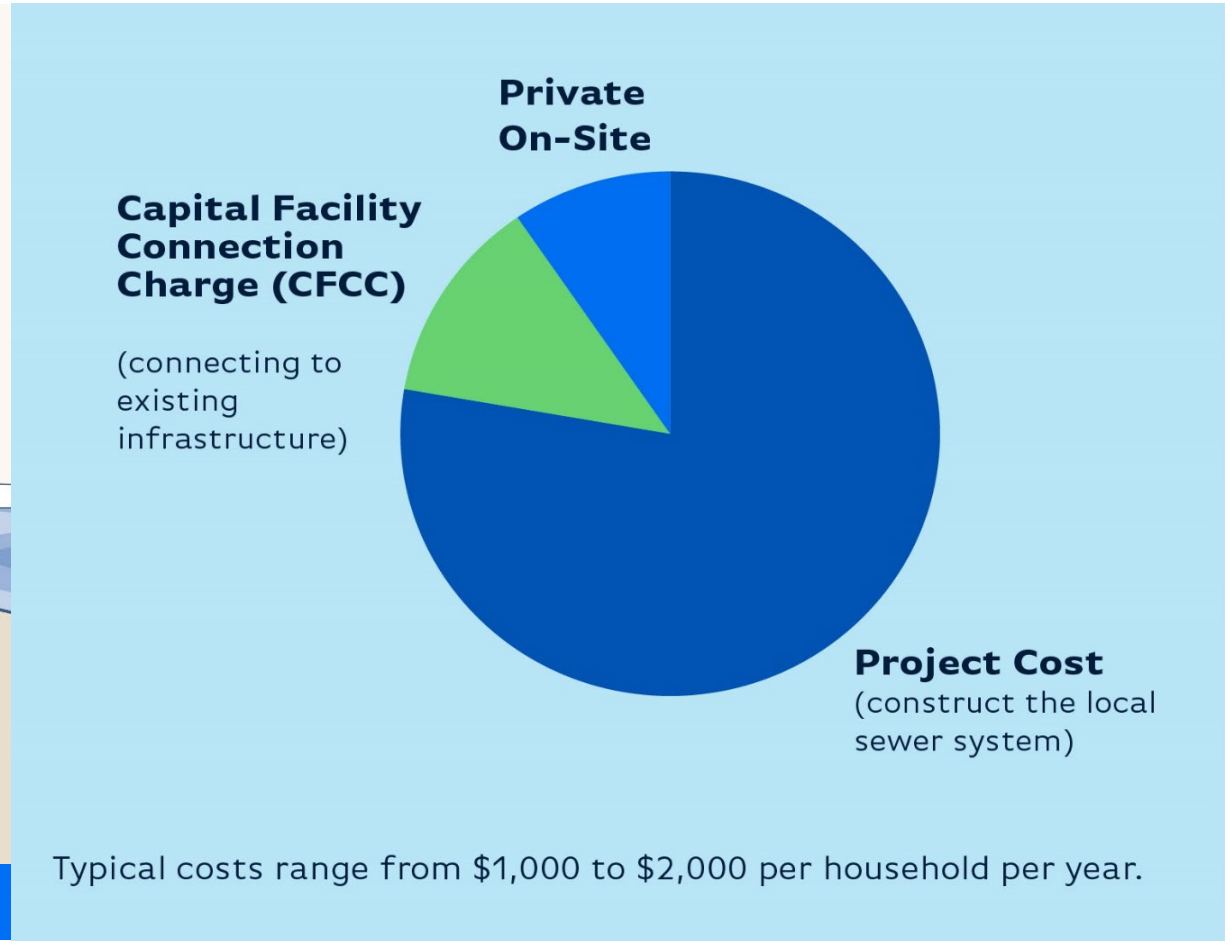
*figures listed are general estimates

Questions?

Costs

Typical Per-Property Total Costs to Connect





Typical costs range from $1,000 to $2,000 per household per year.

Project Cost

- Construction of the local sewer system is paid for in the form of an annual assessment
- The annual assessment is paid back over 40 years
- **Typical annual assessments range from $1,000 to $2,000 per household**
  - Any outside funding (County subsidy or State grants will reduce the cost of the assessment
  - Neighborhoods that are relatively far from existing infrastructure may have higher assessments

Payment Deferral Options

Partial	Full

• Available to all residential homeowners in a project area
• Deferral is on total per-property assessment
• Total deferred portion becomes payable*:
  ○ At time of deed transfer (sale of home)
  ○ After 40 years
• Non-deferred assessment continues after property transfer
	• Available to qualifying owners
	• Deferral is 100%
	• Past deferred portion becomes payable:
	  ○ At time of deed transfer (sale of home)
	• Deferred assessment does not continue after transfer

*whichever happens first

Private Costs

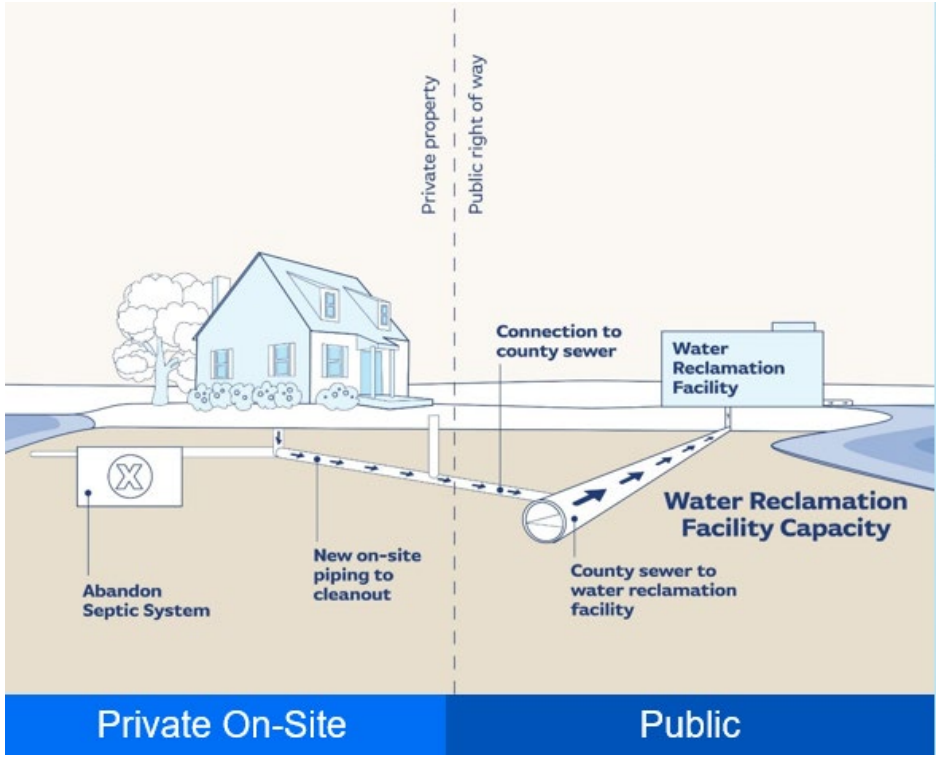
- The work on private property to connect to the public sewer includes:
  - Septic tank abandonment
  - Piping from home
  - Property restoration
- For most homes, private costs will be less than $10,000

Major Contributors To Private On-Site Costs

- Average property sizes
- Distance from home to public right-of-way
- Property topography
- Significant property or driveway restoration

Capital Facility Connection Charge

- One-time charge that recovers the cost to construct water reclamation facilities, pumping stations, etc.
- Can be paid upfront or financed over 40 years
- Charge is determined according to when the Notice to Proceed (NTP) is issued for construction
  - Currently $10,286 and may increase yearly



Payment Deferral Options

Partial (up to 50%)

- Available to all residential homeowners in a project area
- Deferral is on total per-property assessment
- Total deferred portion becomes payable*:
  - At time of deed transfer (sale of home)
  - After 40 years
- Non-deferred assessment continues after property transfer

Full

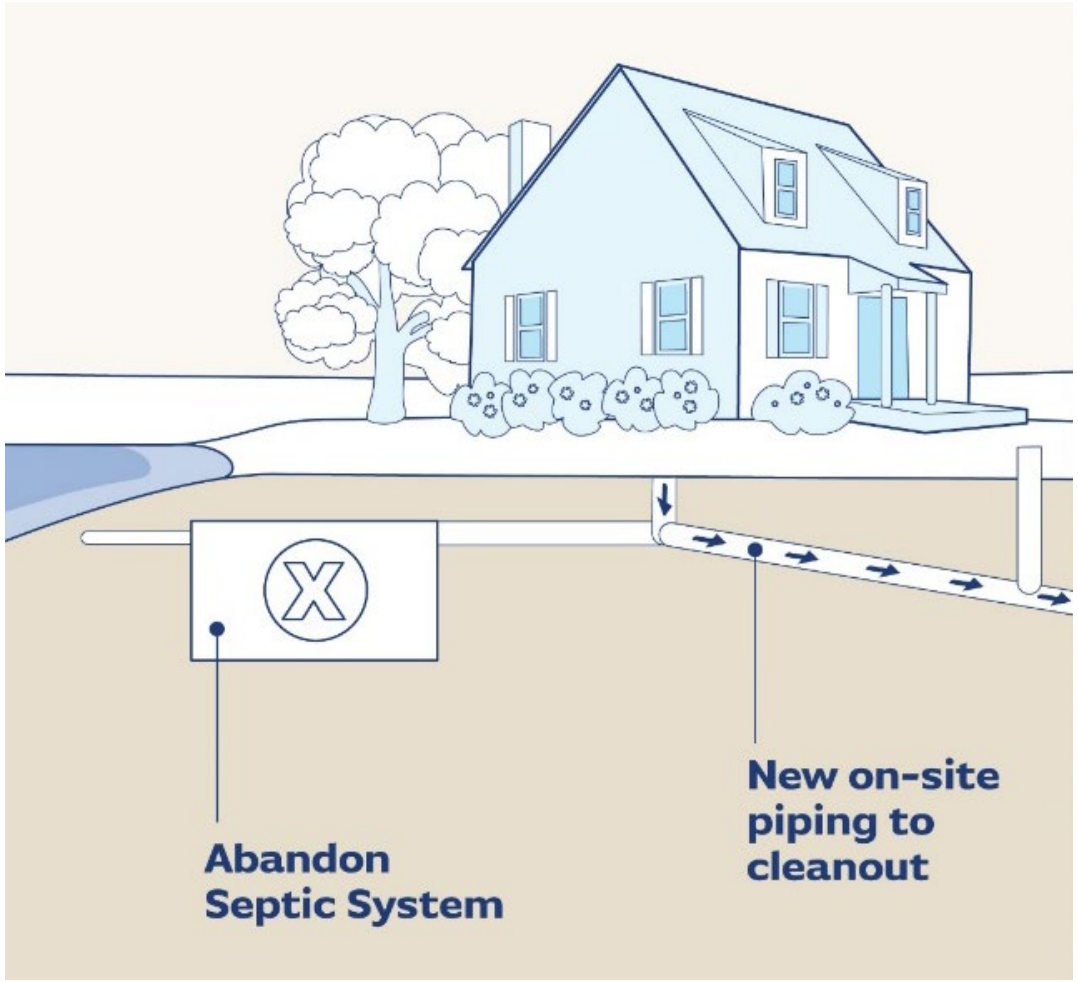
- Available to qualifying owners
- Deferral is 100%
- Past deferred portion becomes payable:
  - At time of deed transfer (sale of home)
- Deferred assessment does not continue after transfer

Vacant

- No subsidy
- No deferment
- No BRF

*whichever happens first

What Happens to my Septic Tank?



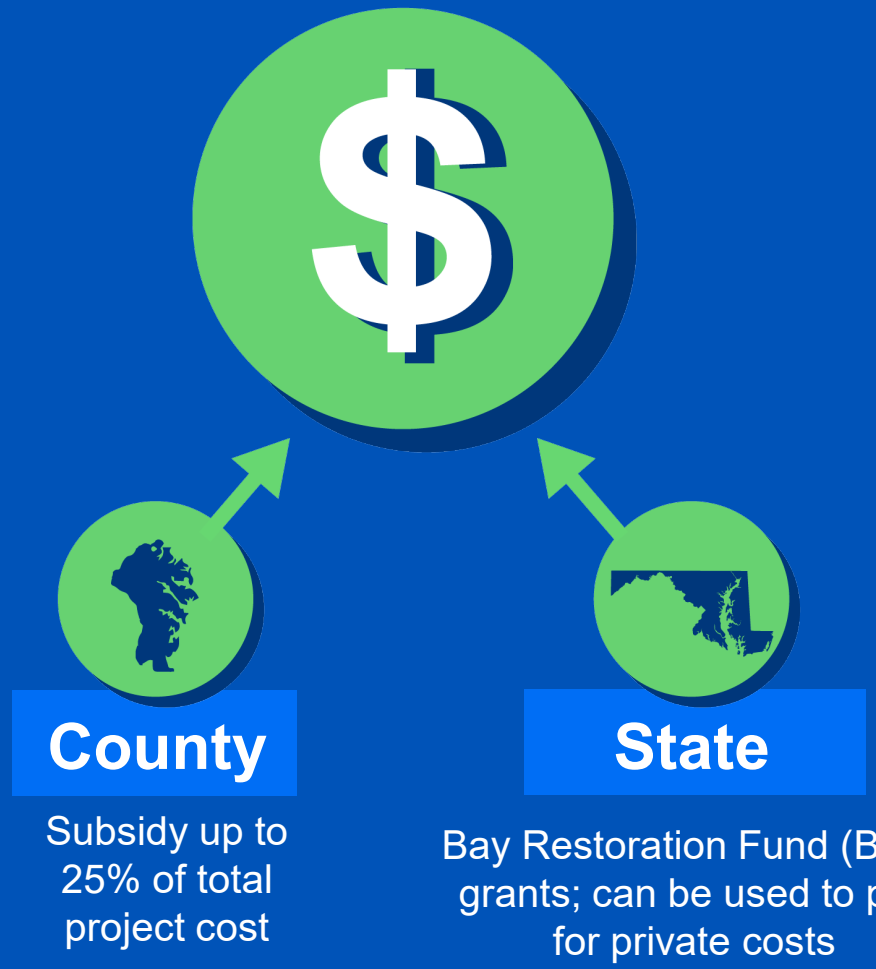
- The County requires homeowners to abandon septic systems when a property is connected to public sewer

- Requires services of a licensed disposal system contractor and/or licensed liquid waste hauler

Source: https://www.aahealth.org/abandonment-guidelines-when-property-is-connected-to-public-sewer/

Sewer Connection Project Funding

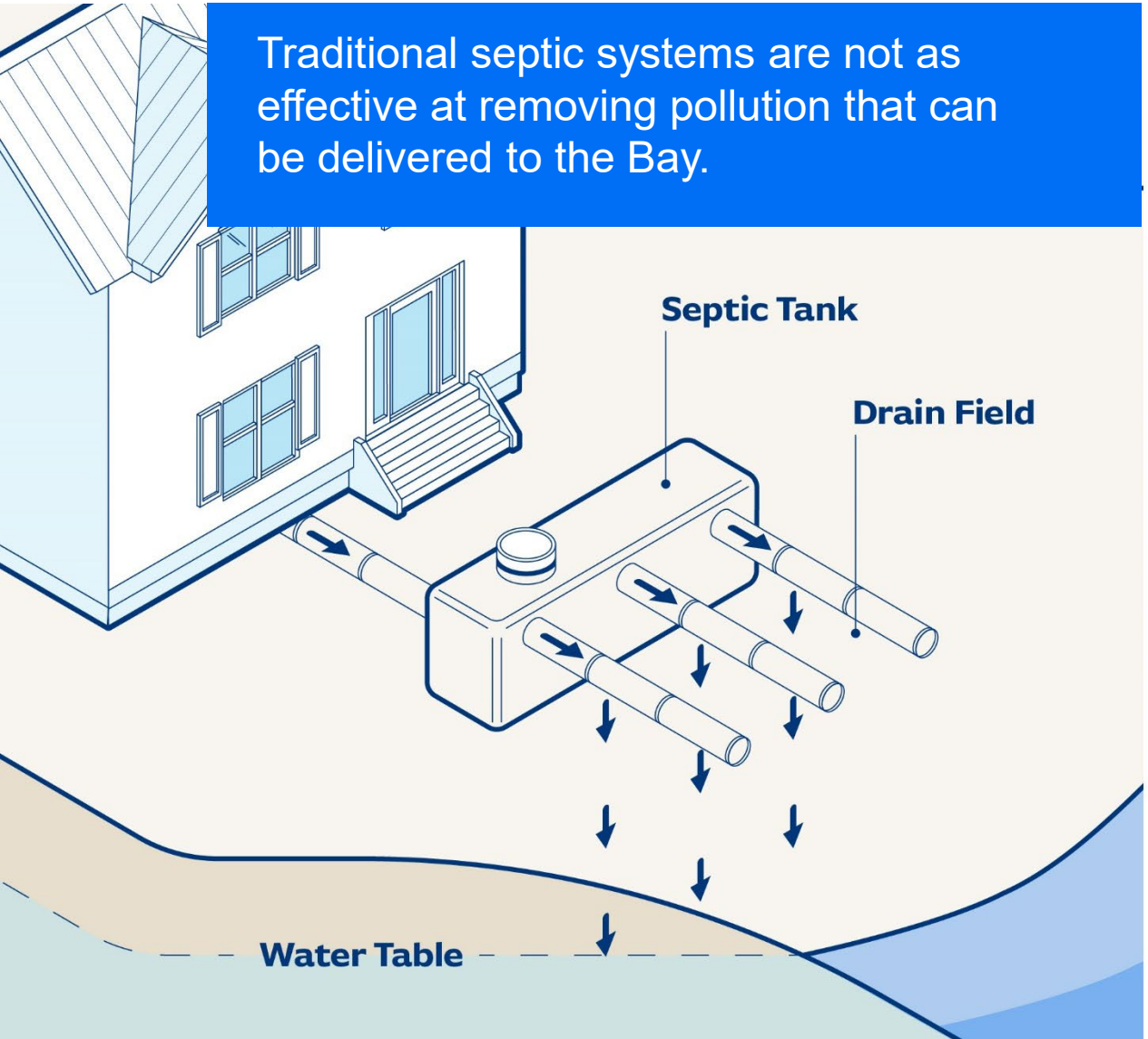
Potential Funding Sources



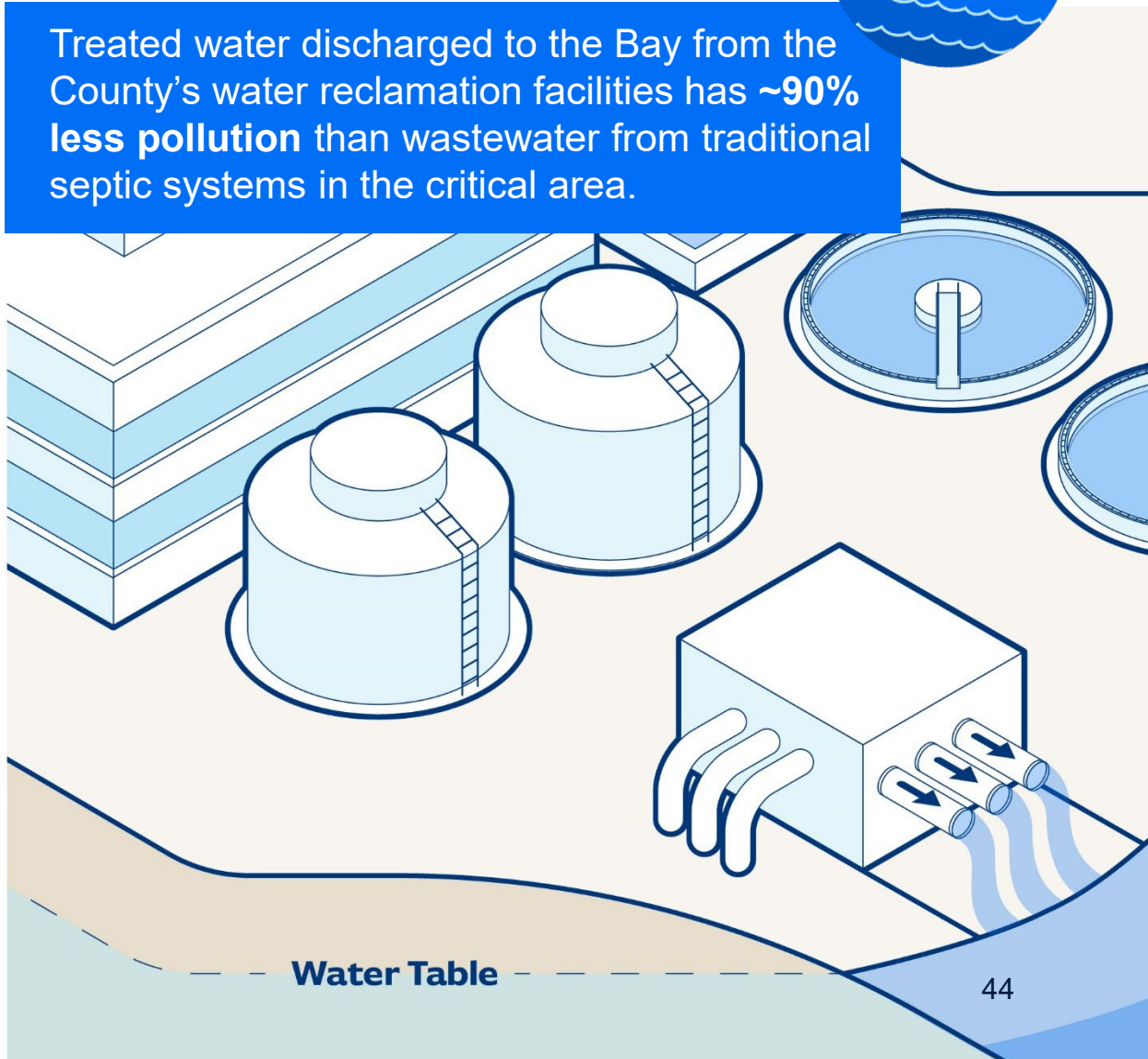
Remaining costs passed to homeowner through annual assessment

Why Connect Septic Systems?

Traditional septic systems are not as effective at removing pollution that can be delivered to the Bay.



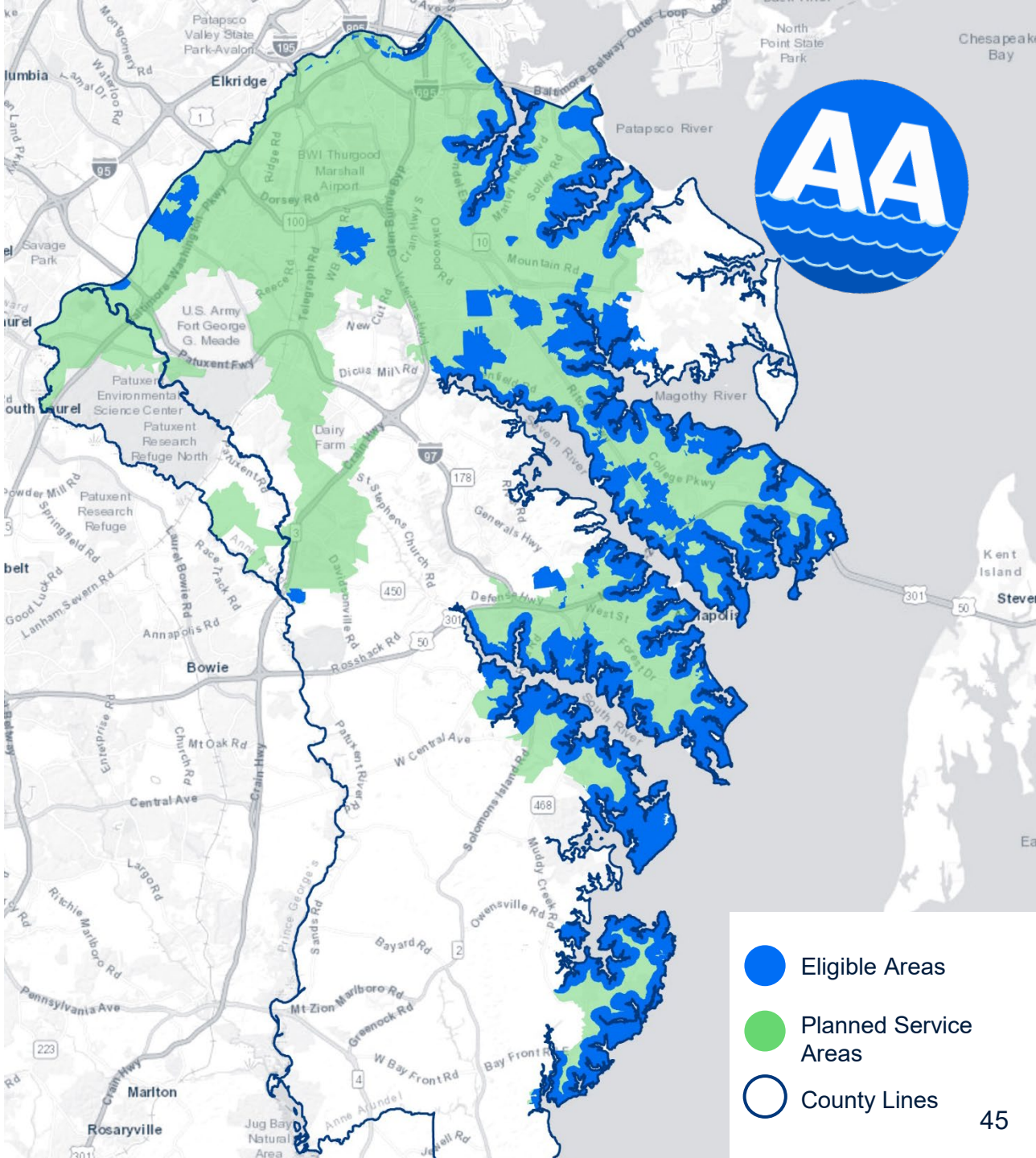
Treated water discharged to the Bay from the County's water reclamation facilities has **~90% less pollution** than wastewater from traditional septic systems in the critical area.



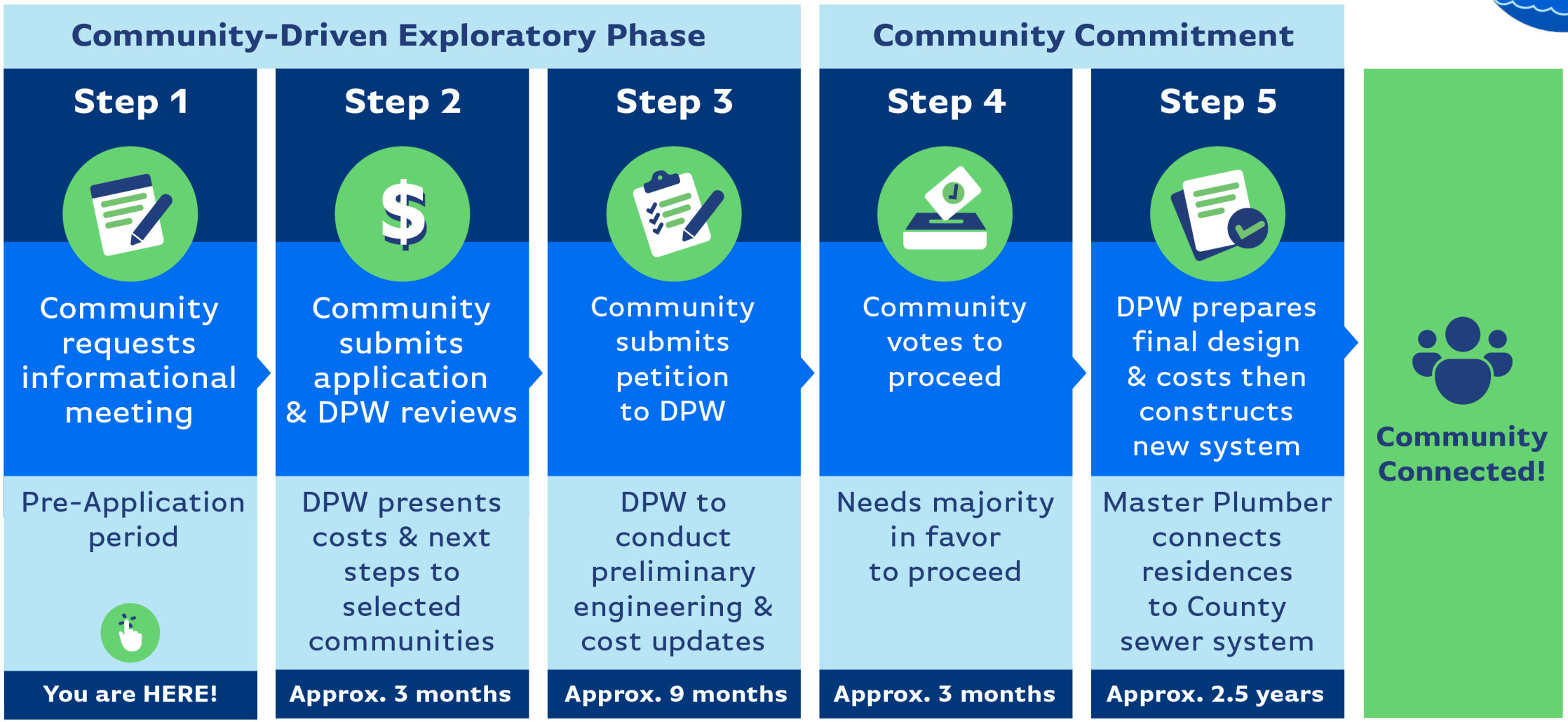
Anne Arundel County Septic Systems

- More than 40,000 septic systems
- Nearly 13,000 septic systems in the Critical Area*
  - 25% of all Critical Area septic systems in Maryland
- A significant source of nitrogen
- Impacts on local rivers and waterways

*Critical Area = land within 1,000 feet of tidal waters



Application & Petition Process

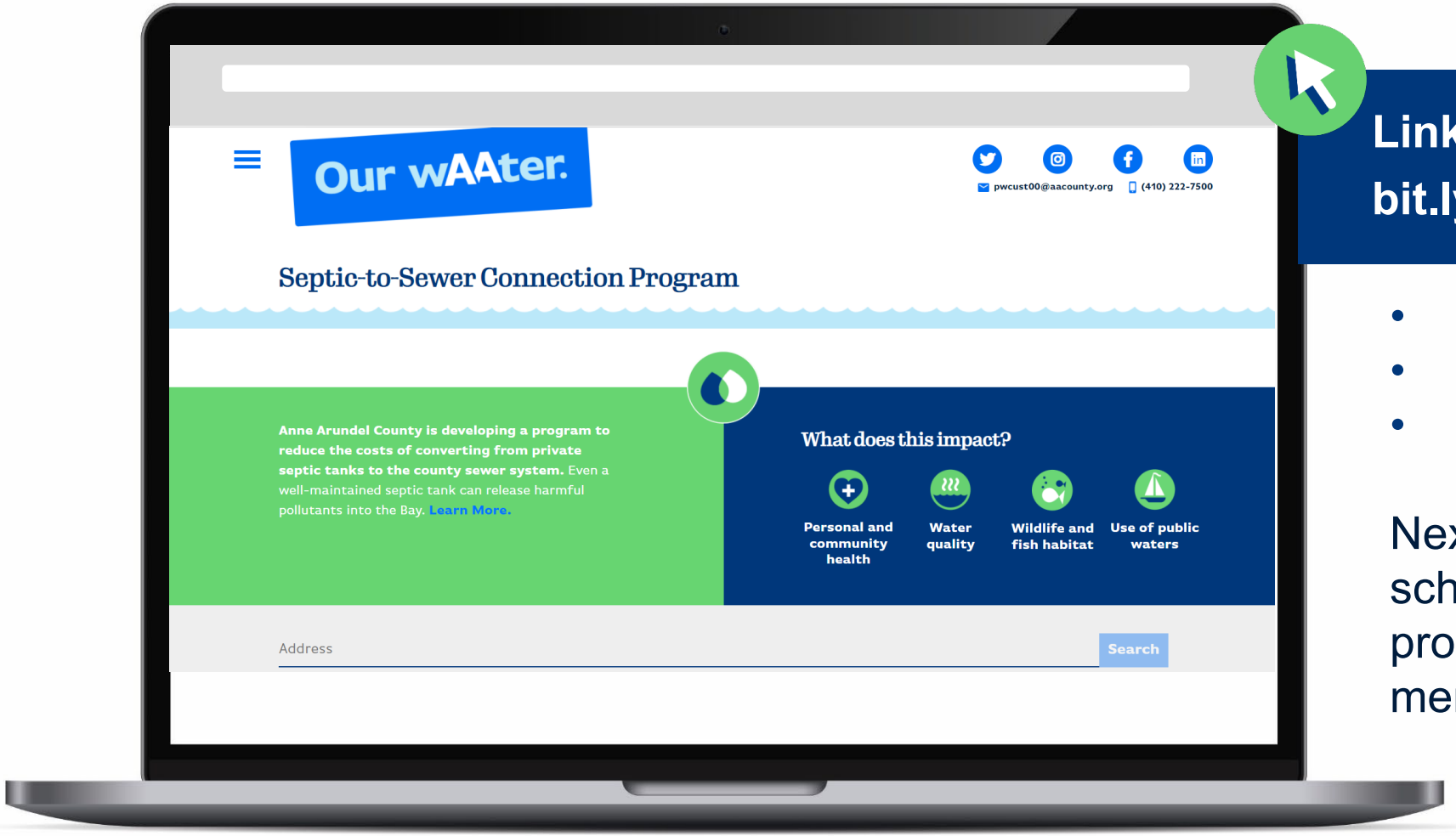


Application Review Process

- DPW ranks eligible communities according to specific criteria
- Ranking system favors large communities
- Community applications are valid for three years

	Environmental and Health	**(45 total maximum points)**
☑	Pounds of total nitrogen removed per year	15
☑	Properties located in the Chesapeake Bay Critical Area	15
☑	Properties located in On-site Wastewater Management Problem Areas	15
	Cost (derived from the total project cost)	**(30 total maximum points)**
☑	$ per pound of total nitrogen removed per year	15
☑	$ per house connected	15
	Availability of Existing Infrastructure	**(15 total maximum points)**
☑	Distance from the project area to existing County sewer system infrastructure	15
	Engineering Considerations	**(10 total maximum points)**
☑	Number of vacant lots	5
☑	Number of households that cannot flow to the collection system by gravity	5

Connect With Us!

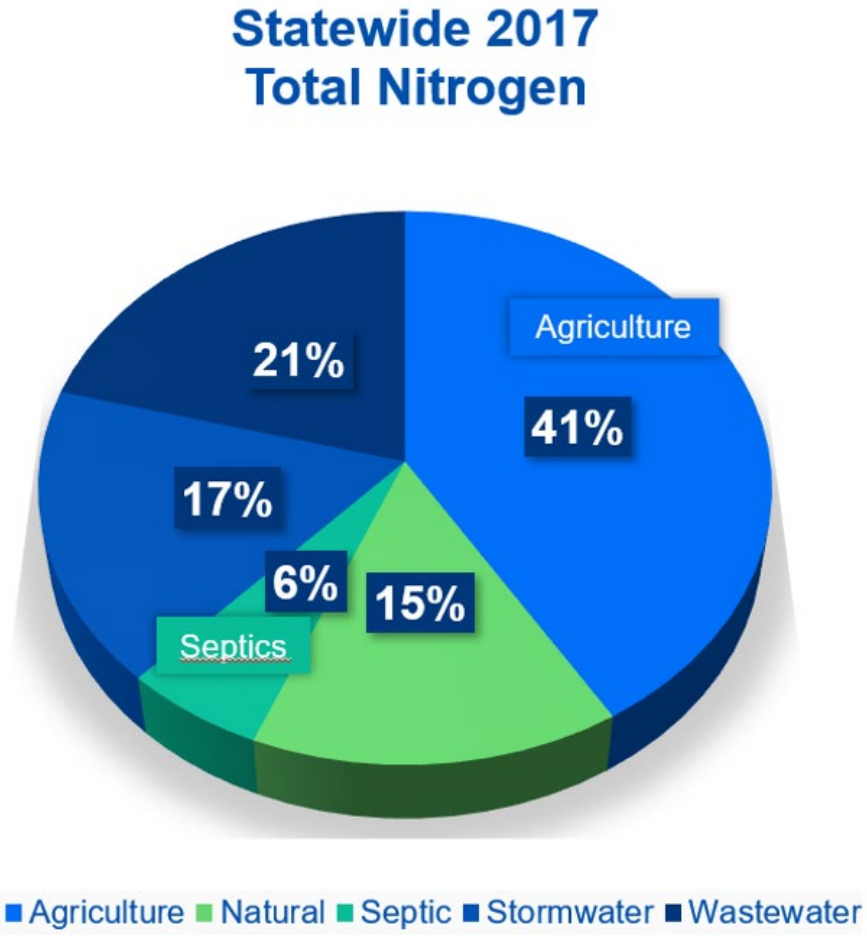


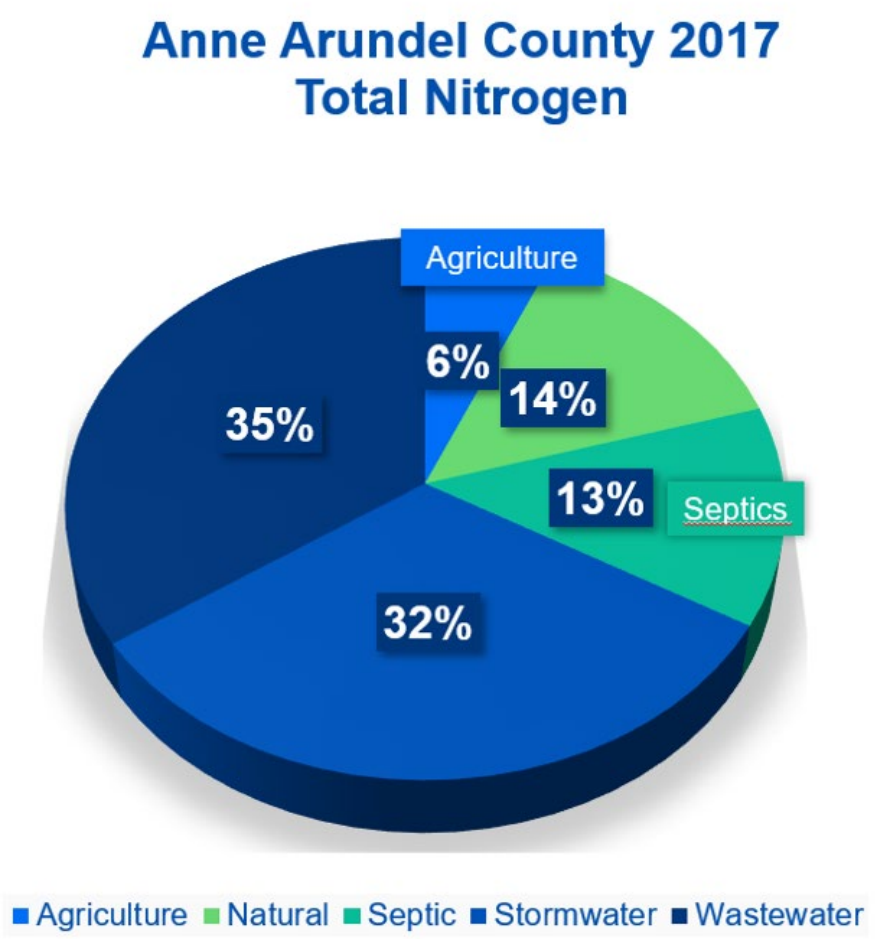
Link:
bit.ly/aacountysepticto sewer

- Enter address
- Request information
- Enter additional comments

Next step: Our wAAter team will schedule a follow-up meeting to provide more detail if community members request

Sources of Nitrogen



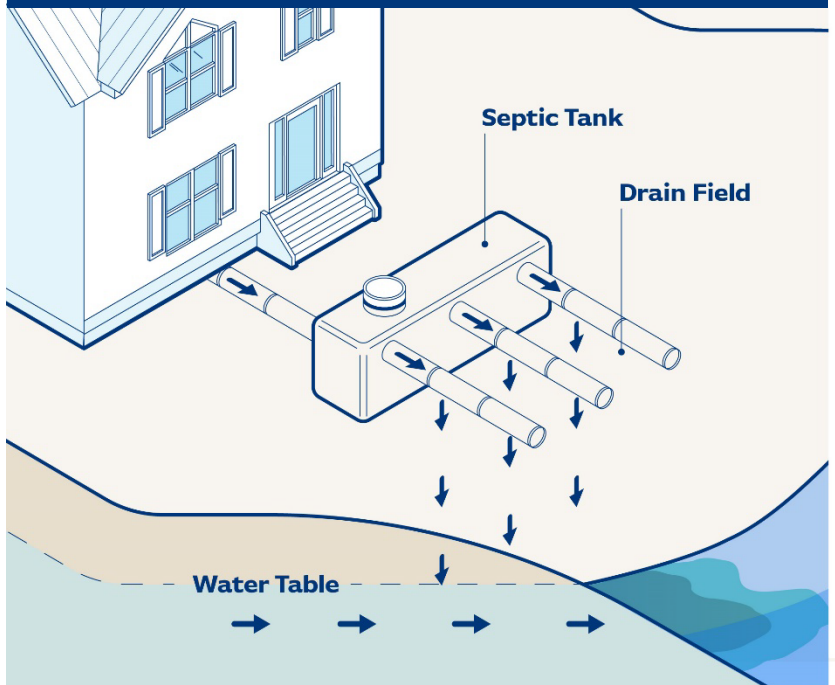


OSDS Nitrogen Loads

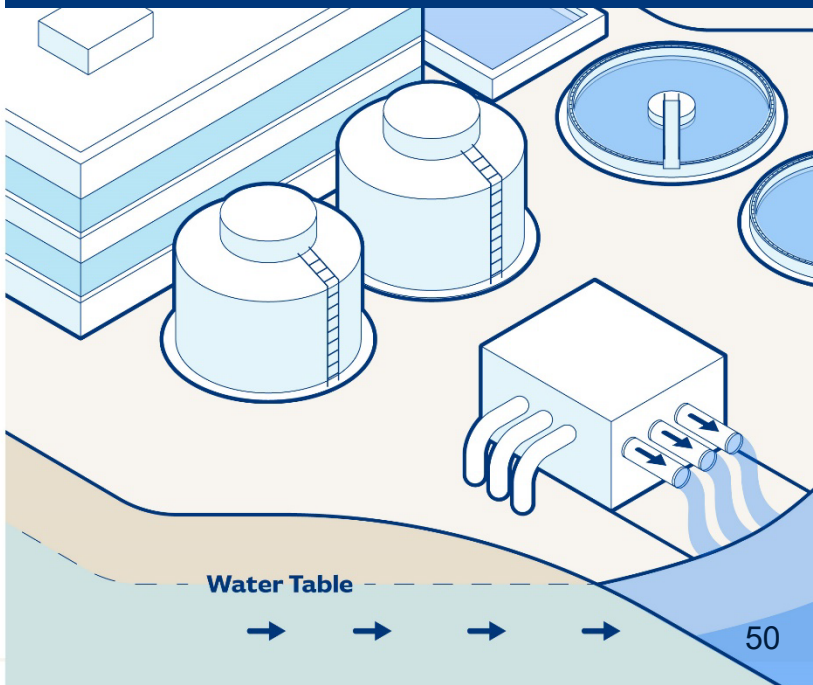
- Typical septic tank effluent Total Nitrogen concentration approx. 40 mg/L
- Treatment plant Total Nitrogen limit 4 mg/L
- Recent average County water reclamation facility Total Nitrogen performance
  - 2019 - 2.05 mg/L
  - 2020 – 1.78 mg/L

On-Site Disposal Systems

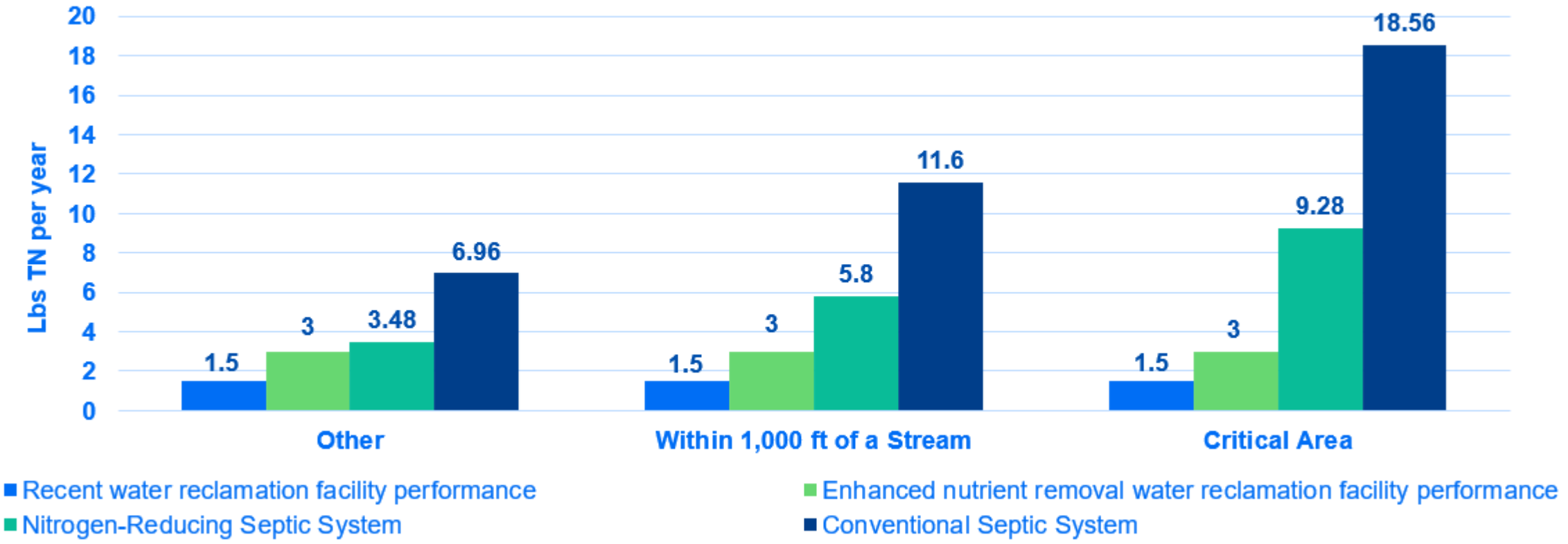
Average load for OSDS is between 7 - 19 lbs TN / year, including delivery ratio



When connected, estimated load is reduced to 3 lbs TN / year; becomes part of reported WRF loading



Approximate Nitrogen Loads



Recent water reclamation facility performance @ ~2 mg/L total nitrogen

Enhanced nutrient removal plant permit limit @ 4 mg/L total nitrogen

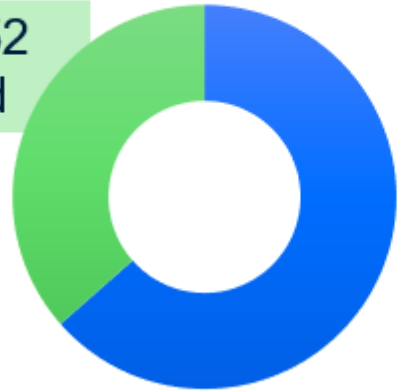
Nitrogen-reducing unit performance assumed to be 50% total nitrogen removal – could be higher

BWPR Progress

BWPR Restoration Project Goals

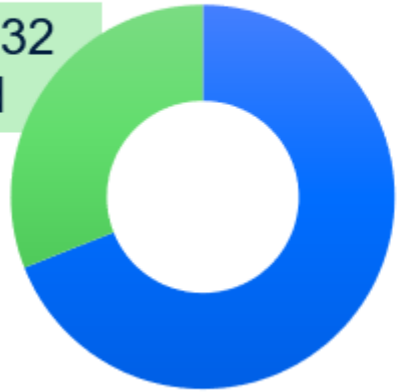
Stream & Wetland Restoration

19 out of 52 Completed



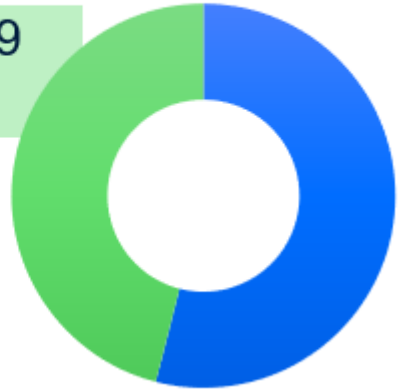
Stormwater Pond Retrofits

91 out of 132 Completed



Stormwater Outfall Repairs

21 out of 39 Completed



(Number of projects completed/anticipated)

800+
Culverts and Storm Drain Projects Completed

130
Water Quality Projects Completed in Permit Term

94
Additional Projects Underway

Goal to treat
2,998
impervious acres through the CIP through 2026

Stream Restoration

- Stream erosion is the largest contributor of sediment and phosphorous to local rivers
- Stream restoration improves water quality and flooding, and provides ecological benefits

Learn more at https://www.aacounty.org/departments/public-works/wprp/

Stormwater Facility Improvements and Outfall Repairs

- DPW has rebuilt failed dry ponds, detention ponds, and infiltration basins to optimize pollution reduction capacity
- DPW has reconstructed eroded, failing stormwater outfalls into systems that can move high flows and improve water quality

Learn more at https://www.aacounty.org/departments/public-works/wprp/

Watershed Stewards Academy

- Award winning educational program that trains County residents in methods to reduce stormwater runoff.
- Once trained, Stewards:
  - Identify pollutant sources for local waterways and create reduction strategies
  - Educate communities on the most pressing environmental problems in their area
  - Work with communities to target pollution sources such as pet waste, fertilizer,
    erosion or pesticides
  - Help communities coordinate stormwater management projects
- Typical projects include rain gardens and conservation landscapes to reduce pollution at its source.

Learn more at www.aawsa.org

Existing Flows and Connections

Plant	Existing (2019) Average Flow, MGD	Permitted Flow, MGD	Estimated Existing Connections	Estimated Existing GPD per Connection	Owner
Patuxent	0.014	0.035	149	93	Horizon
Lyons Creek	0.075	0.070	243	309	Horizon
Waysons	0.037	0.075	290	128	RHP
Boone's	0.074	0.080	437	169	Horizon
Maryland Manor	0.050	0.090	259	193	Horizon
Total	**0.250**	**0.350**	**1,378**	**181**	**N/A**

- Estimated number of existing connections based on input from existing private owners
- Permitted flow based on NPDES permits & confirmed by MDE; equal to existing design capacity
- Existing average flow (2019) values based on flow data provided by MDE