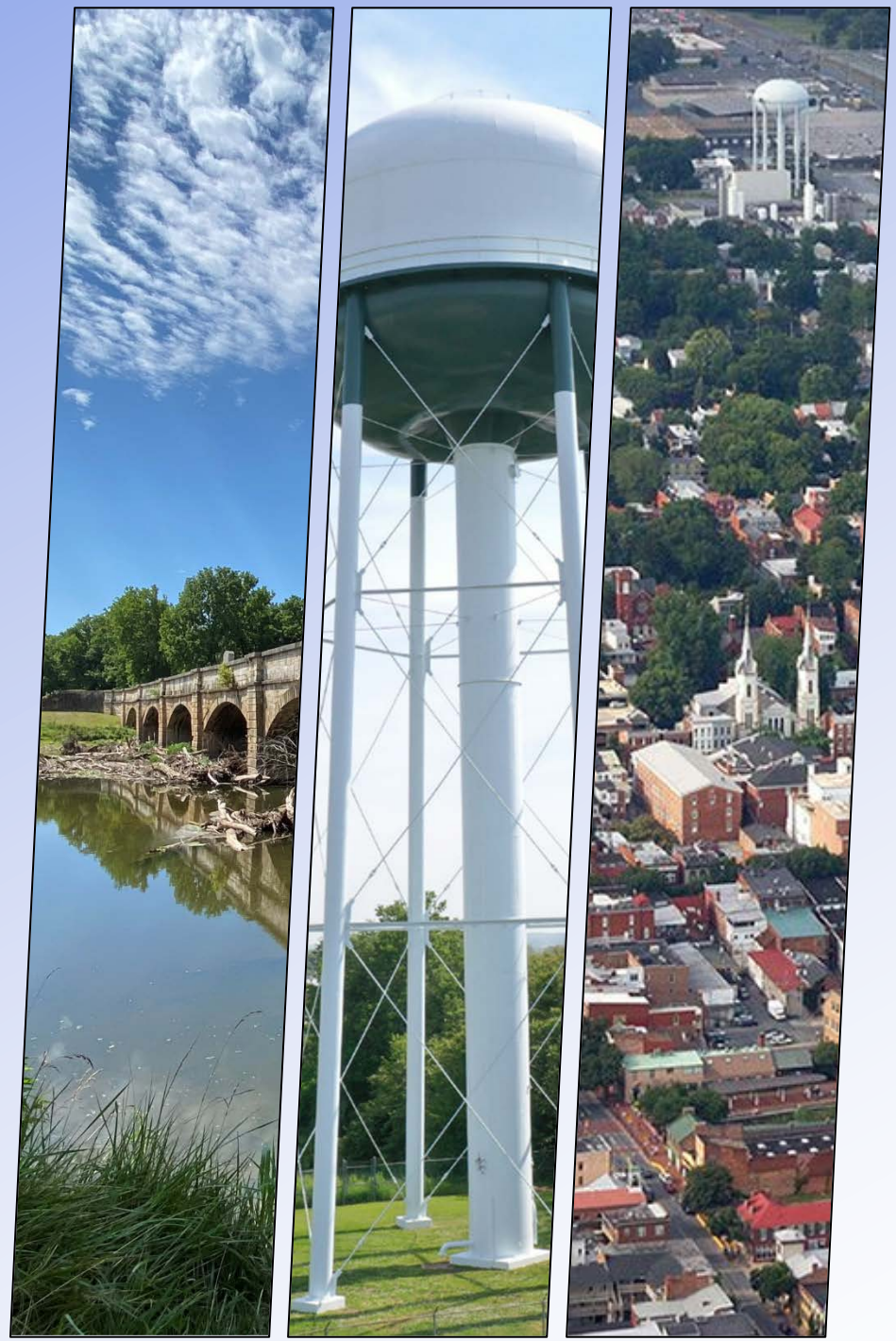

Frederick County Water Resources Element

Frederick County Planning Commission

November 15, 2023

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What is the Water Resources Element (WRE)?

- A required part of comprehensive plans under state law since 2006
- Review water and wastewater adequacy and consider impacts of growth and development
- Adopted in 2010 as a functional element to the 2010 County Comprehensive Plan

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- Assess current conditions
- Project future demand and land use change
- Assess ability of the systems to meet projected demands/impacts

Drinking Water

Wastewater

Stormwater

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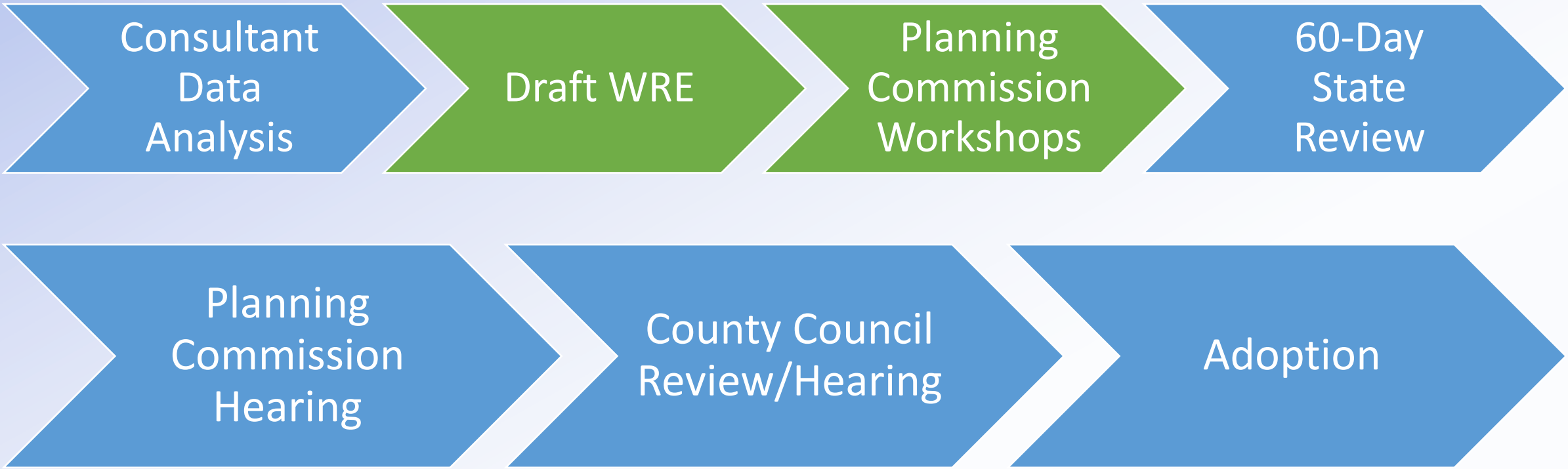
Project Process



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Planning Commission Workshops

- Current Conditions
  - Today: Introduction & Framework
  - Next Week: Wastewater
  - December/January: Drinking Water & Stormwater
- Projected Conditions (early 2024)
- Meeting Projected Conditions & Implementation (early 2024)

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Chapter 1 Introduction & Framework Overview

1. Why Prepare a Water Resources Element?
2. Related County Plans
3. Coordinating with Municipalities
4. Protecting Water Quality (Regulatory Frameworks)
5. Projected Population Growth And Development *(Placeholder)*
6. New WRE Components

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Federal

- Clean Water Act becomes law in 1972

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Federal

- Clean Water Act becomes law in 1972

State

- Maryland is authorized by Environmental Protection Agency (EPA) to carry out many Clean Water Act provisions.

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Federal

- Clean Water Act becomes law in 1972

State

- Maryland is authorized by EPA to carry out many Clean Water Act provisions

County

- Carry out MDE permit requirements, including implementing stormwater regulations and inspecting stormwater facilities

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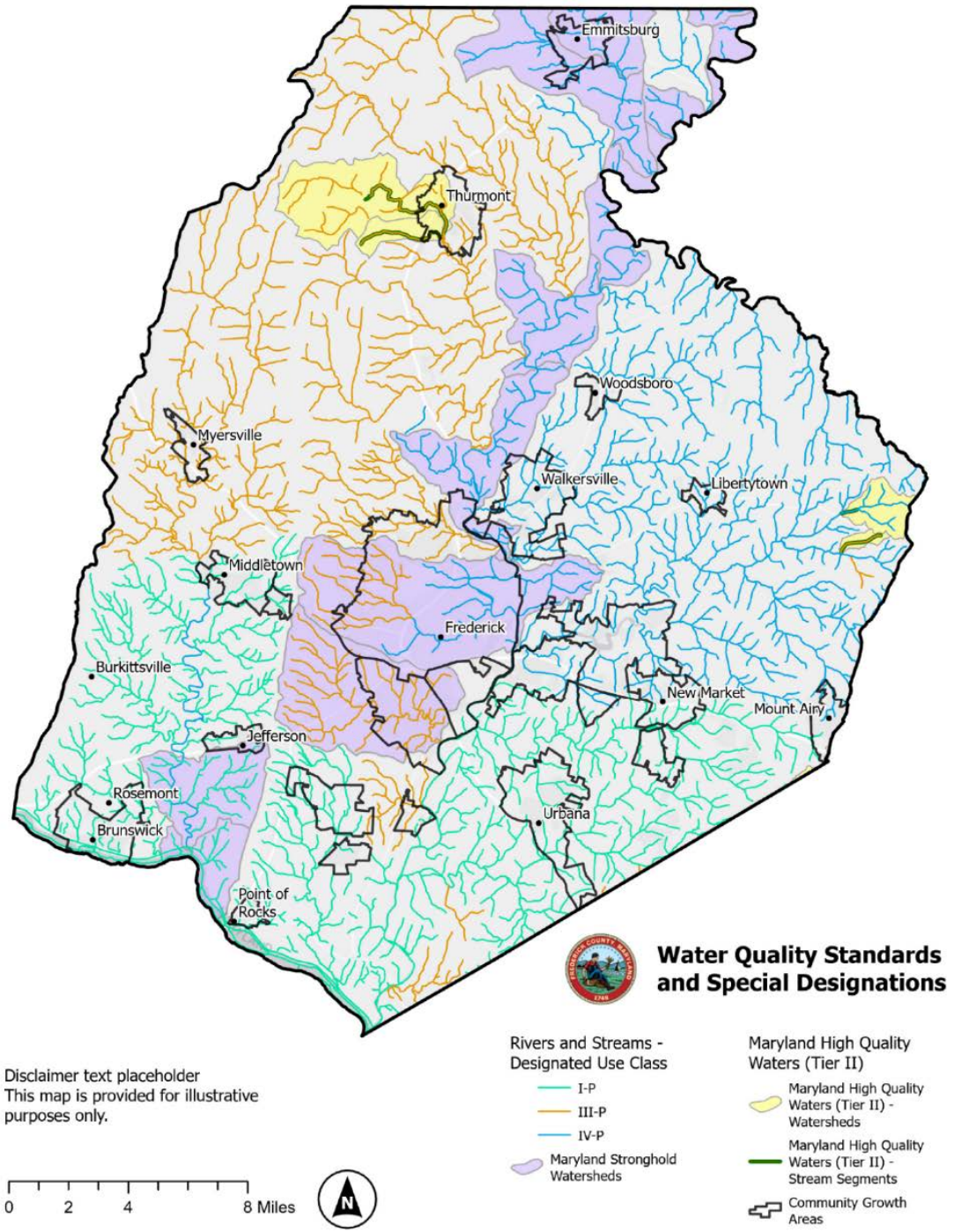
Water Quality Standards

(Clean Water Act requirement)

Designated Use	Water Quality Criteria	Antidegradation
"What are we protecting?"	"What limits are needed to protect human and animal health?"	"How do we protect high-quality waters?"

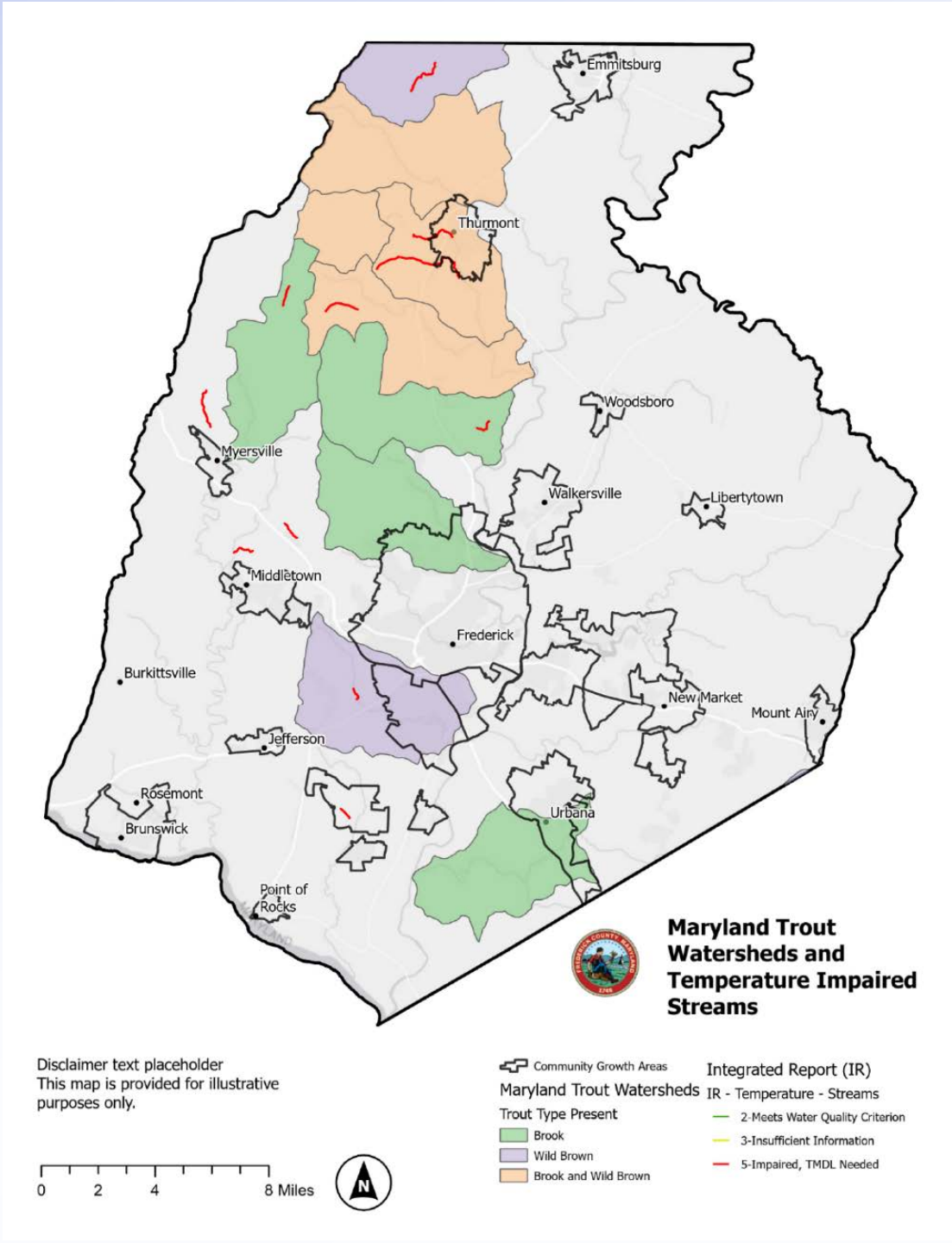
Designated Uses in Frederick County

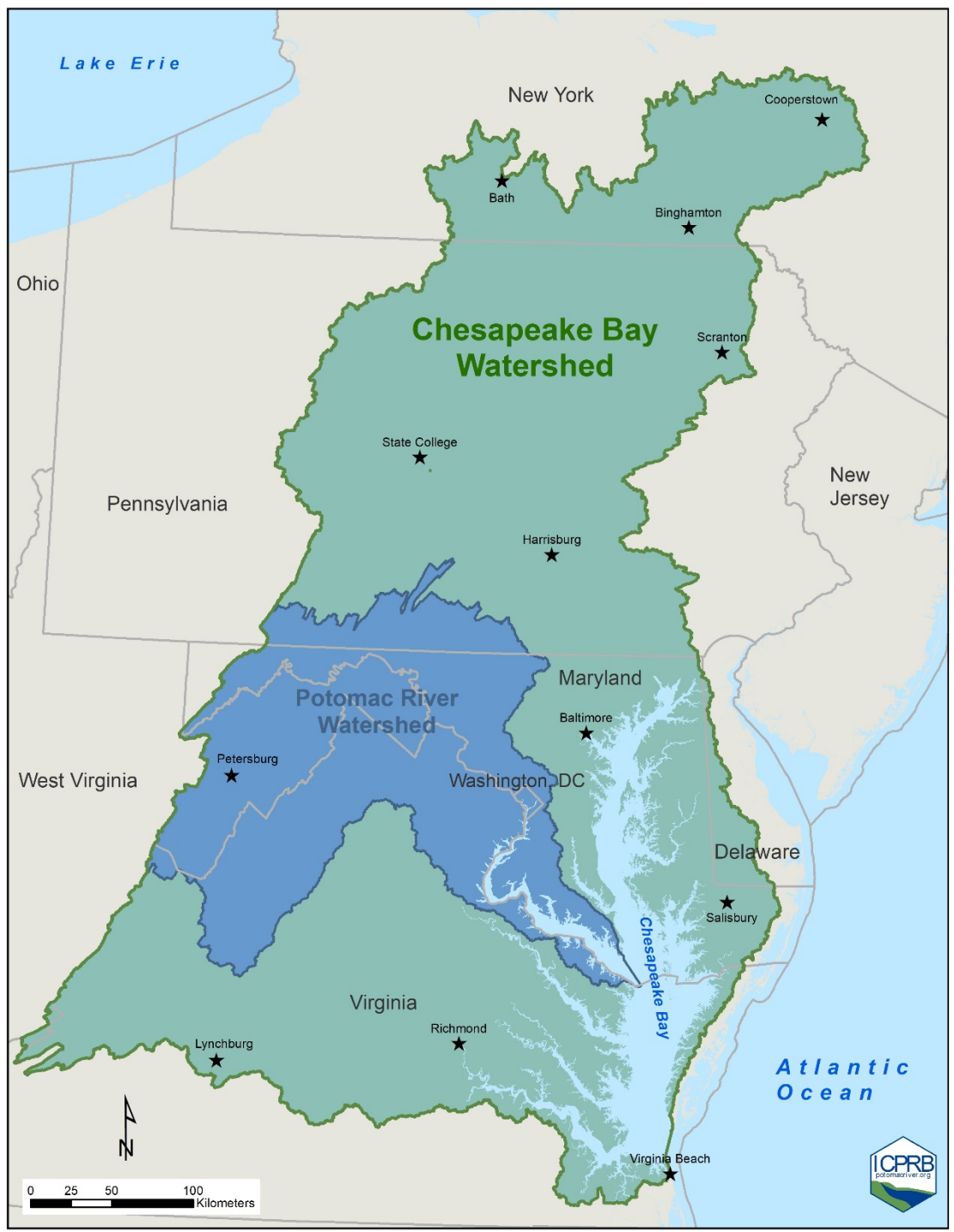
- Use Class I-P: Water Contact Recreation, Protection of Aquatic Life, and Public Water Supply
- Use Class III-P: Nontidal Cold Water and Public Water Supply
- Use Class IV-P: Recreational Trout Waters and Public Water Supply

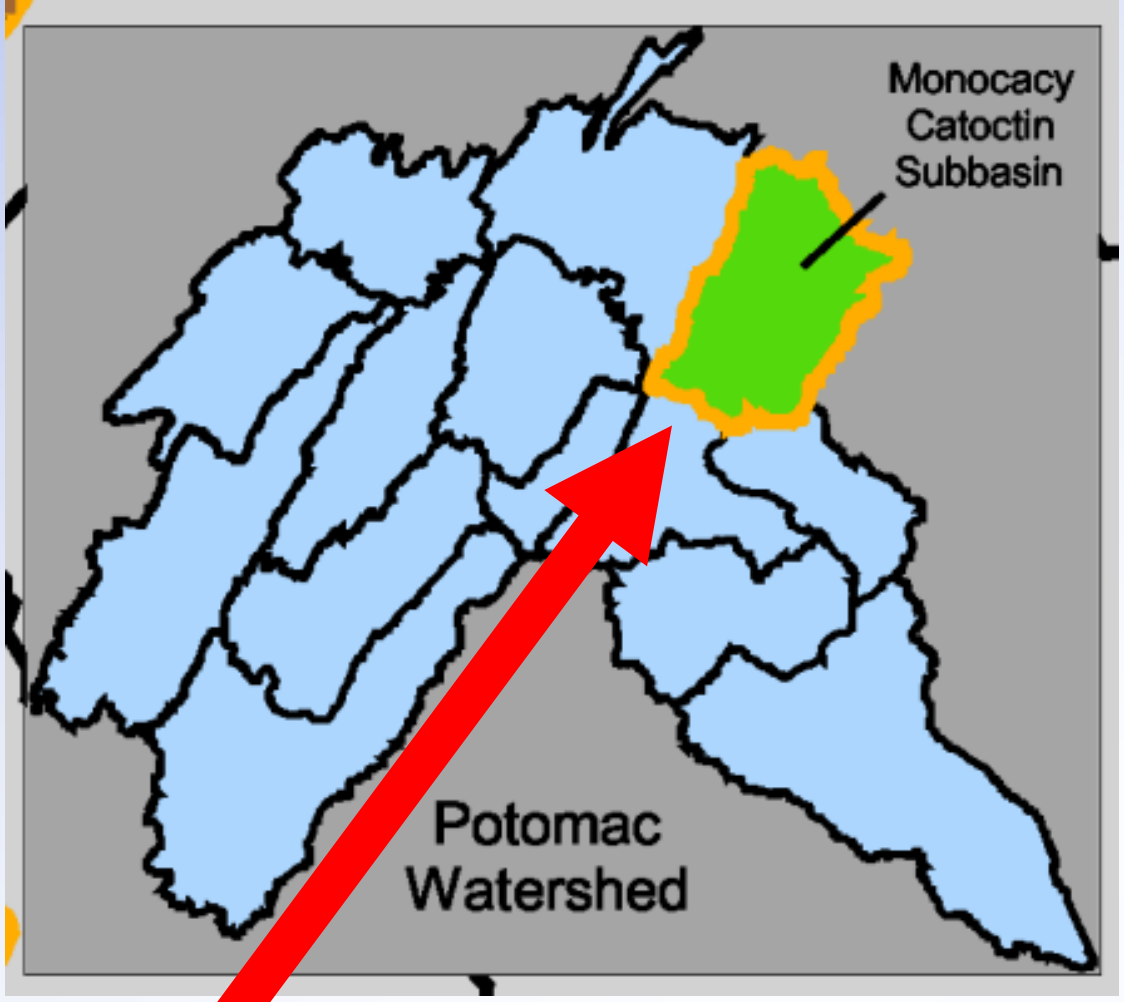


Special Designations
in Frederick County

- Not part of the Clean Water Act framework
- Stronghold Watersheds (Previous Map)
- Coldwater/Trout Watersheds (This Map)







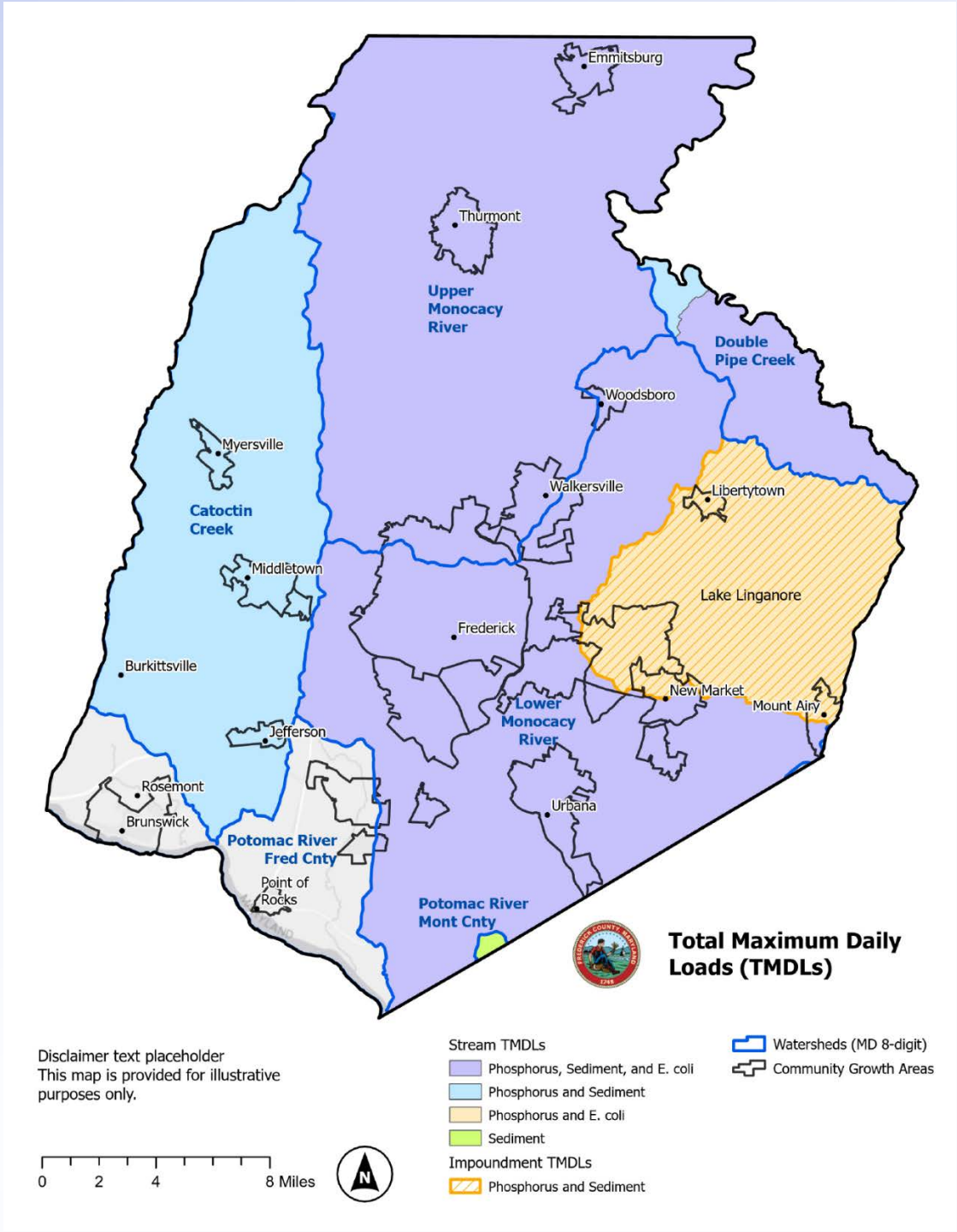
You are here!

Maps from icprb.org

Total Maximum Daily Load (TMDL)

"How do we improve water quality?"

- A TMDL is a pollution diet
- Goal is to improve water quality so it is no longer impaired
- Local TMDLs include Phosphorus, Sediment, and E.coli



Drinking Water

Wastewater

Stormwater

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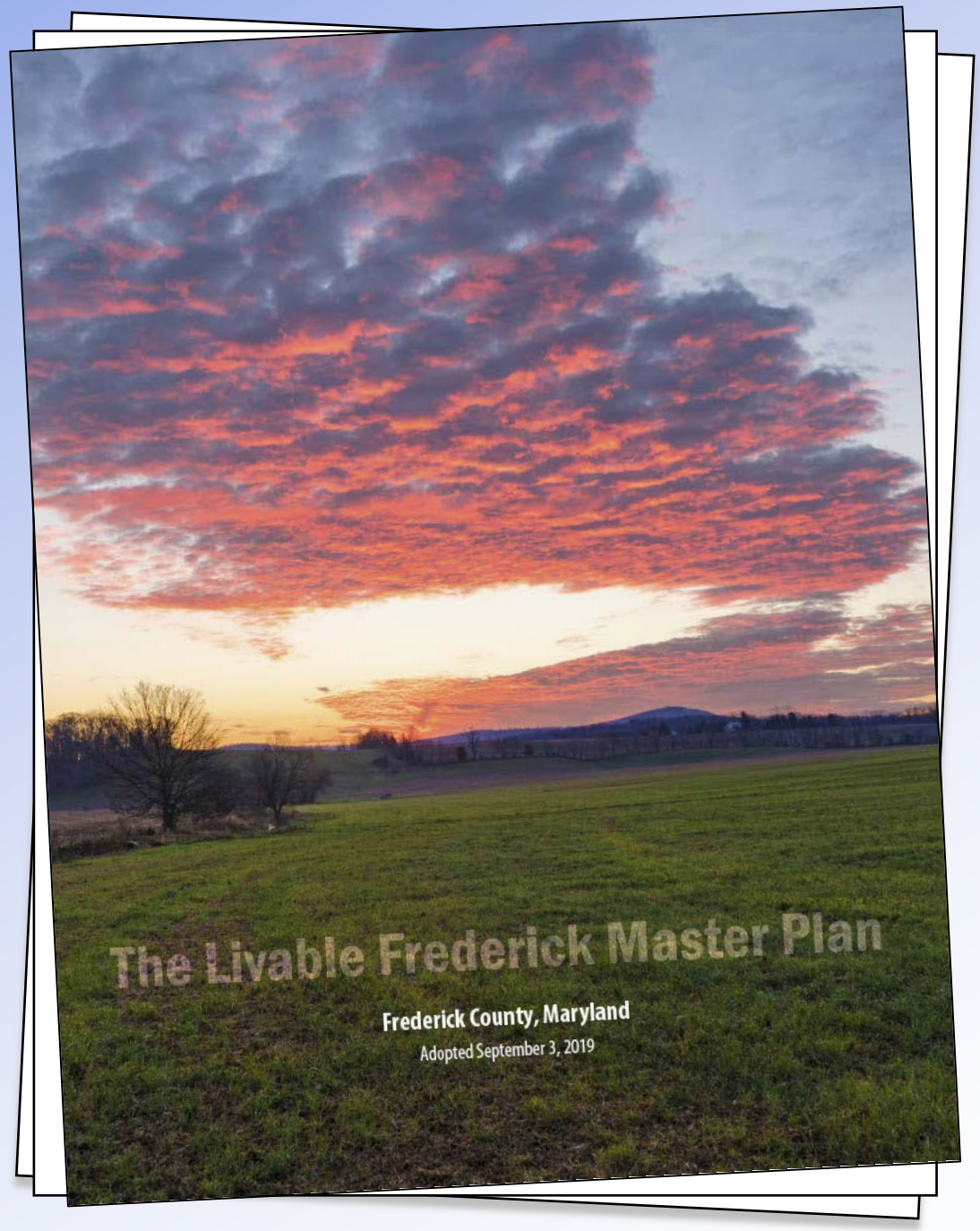

LFMP Goals & Initiatives

Goal 4.2.2 Supply and Treatment Infrastructure

Initiative 4.2.2.1 Water and Sewer Adequacy

Supporting Initiative 4.2.2.1.2

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Wastewater Discharges

- Typically occur at a single point, or “point source”
- National Pollution Discharge Elimination System (NPDES)
- An NPDES permit is issued for each facility that discharges to the Potomac River, Monocacy River, Catoctin Creek, and/or their tributaries.

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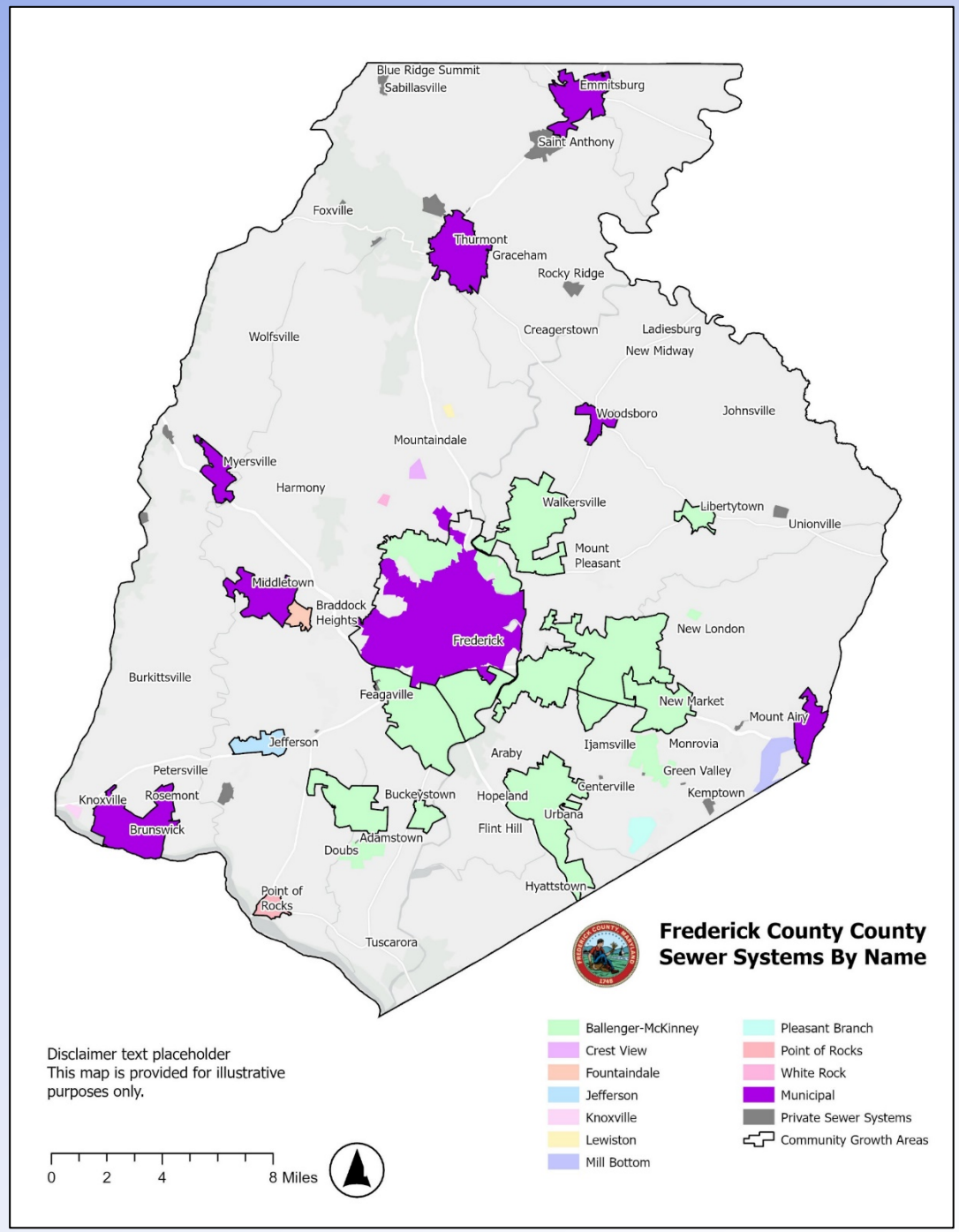

Wastewater Systems

- Eleven regional wastewater (sewer) service areas
- Seventeen systems (Eight Municipal Systems, Nine County Operated WWTP)
- Fort Detrick operates separate system
- Overlap exists between County and Municipal Boundaries/Systems

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Table 3.01

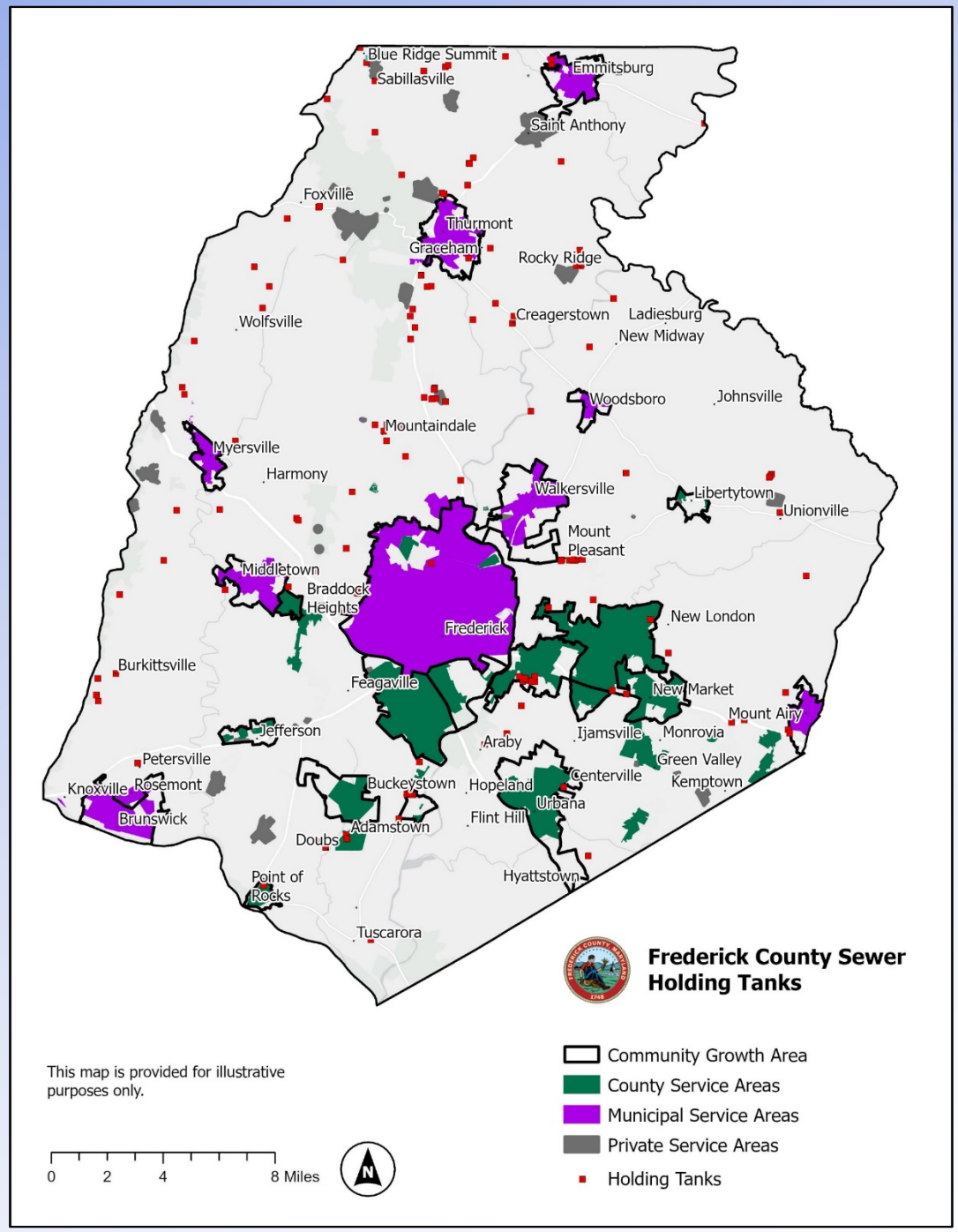
Wastewater Supply and Demand by Service Area									
Service Area	**Permit No. [1]**	**Receiving Stream [1]**	**Permit Capacity (MGD) [1]**	**Design Capacity (MGD) [1]**	**Average Flow (MGD) [2]**	**Remaining Capacity (MGD) [3]**	**Projected Flow 2035 (MGD)**	**Projected Flow 2050 (MGD)**	**Population: Total [1]**
Lewistown	15-DP-0730 MD0022900	Fishing Creek	0.027	0.027	0.002	0.025			227
Crestview	13-DP-0672 MD0022683	Muddy Run	0.036	0.036	0.024	0.012			458
White Rock	12-DP-0278 MD0025089	Tributary of Tuscarora Creek	0.050	0.025	0.011	0.014			264
Fountaindale	13-DP-0668 MD0022721	Hollow Creek	0.200	0.250	0.112	0.138			1,712
Pleasant Branch	15-DP-2814 MD0065269	Tributary of Bennett Creek	0.100	0.100	0.053	0.047			839
Mill Bottom	15-DP-2841 MD0065439	Bush Creek	0.100	0.100	0.069	0.031			1,215
Jefferson	09-DP-0097 MD0020737	Catoctin Creek	0.300	0.300	0.147	0.153			2,270
Point of Rocks	15-DP-0482 MD0020800	Potomac River	0.230	0.230	0.105	0.125			1,754
Ballinger-McKinney	16-DP-0809 MD0021822	Monocacy River	15.000	15.000	7.565	7.435			148,178
Knoxville / New Addition [4]	-	-	-	-	-	-			-
TOTALS	**-**	**-**	**16.043**	**16.068**	**8.087**	**7.981**			**156,917**

(1) Information obtained from Frederick County Water & Sewerage Plan - Approved - February 2, 2021 (as amended December 28, 2022) - Table 4.03.

(2) Average of 2020 - 2022 WWTP flow data provided by Frederick County.

(3) The remaining capacity is the difference between the average flow and the design capacity.

(4) The Knoxville New Addition Service Area is accommodated by the City of Brunswick, and it was not included in the Frederick Water and Sewerage Plan.



On-Site Disposal Systems (Septic)

- Approximately 27,000 systems (based assessment data)
- Declining as a percentage of overall treatment as more new development utilizes public wastewater facilities
- Identification of holding tanks completed in cooperation with Health Department

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Well & Septic Program, Howard County Government, 2023. https://www.howardcountymd.gov/health/well-septic-program

Addressing Equity …

- Best Available Technology Grants (Costs & Applications) for septic systems
- Holding tanks and extension of wastewater infrastructure
- Service areas covered by other jurisdictions (Sabillasville and Hyattstown)
- Additional topics focused on equitable outcomes to be identified as part of future efforts

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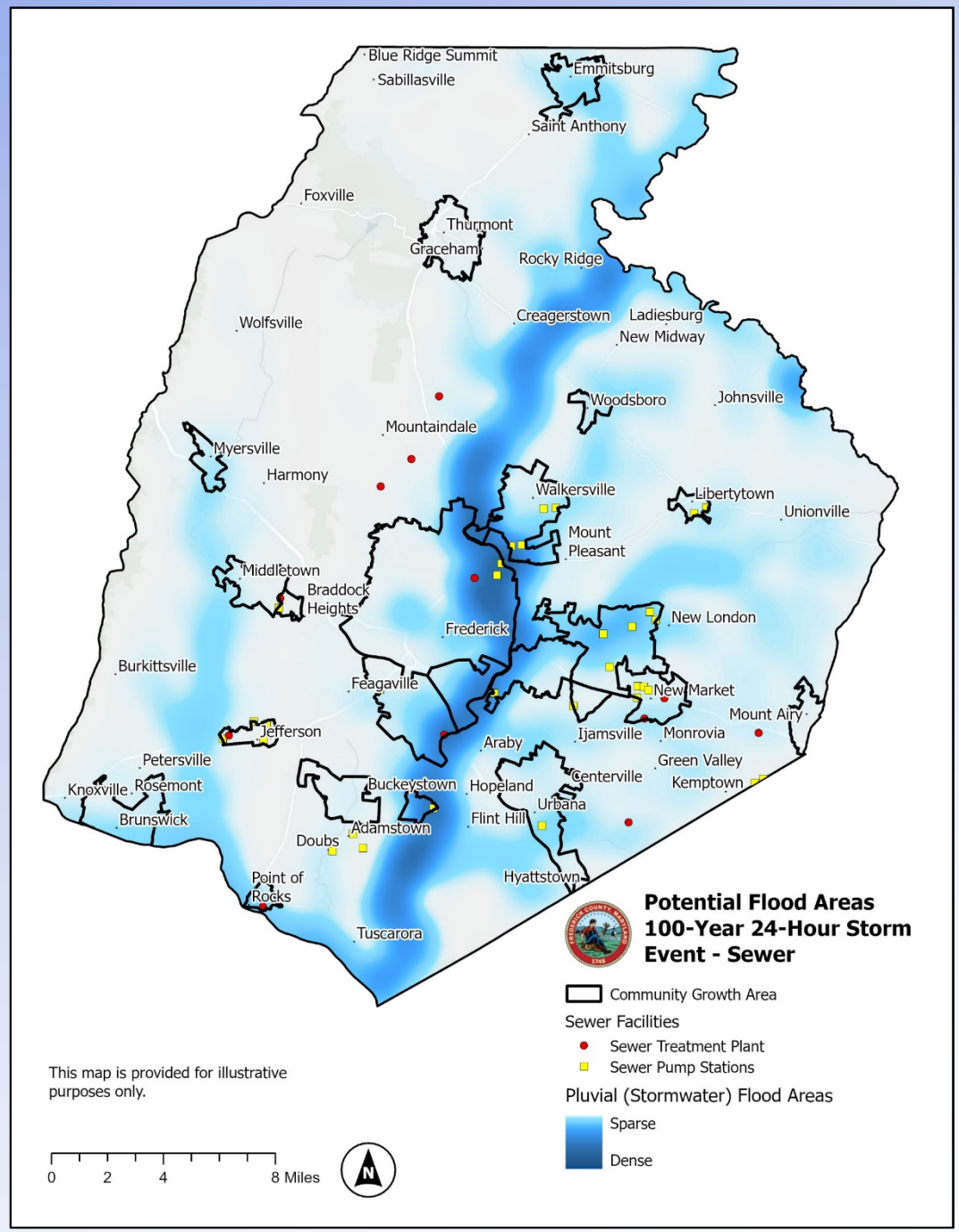

… and a Changing Climate

- Wastewater facilities located in or near existing floodplains
- Impacts of drought on the ability of waterways to assimilate discharge

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