Final Programmatic Report Narrative

1. **Project Description.**

Briefly describe your project, including a description of the problem your project is trying to address, the project's objectives and strategies, as well as the project location, and a characterization of the watershed and the relevant characteristics of the community's natural resources, population, and economy.

The Nanticoke River watershed--the largest in Delaware's Chesapeake Bay drainage--encompasses the western half of Sussex County. The county has made significant gains in addressing wastewater pollution and the Sussex Conservation District has made strong progress with agricultural BMP implementation. Municipalities are not highly resourced and median incomes are low. Outside of the regulated areas, the land use is dominated by agricultural uses related to poultry production. Achieving pollution reduction in the stormwater sector has lagged. The MS4 permittees are small and new to the program; they have not engaged in any public education activities or stormwater management project implementation. They are interested in doing more but have expressed a need for sustainable financing strategies.

The watershed is predominantly rural, hosting a large number of poultry growers as well as farmers growing grain and soybeans. Historically, DuPont had employed a large number of people, but after closing over a decade ago many of the towns are still financially recovering. Due to the watershed being a part of the Middle Chesapeake Sentinel Landscape program, a significant portion of land has been conserved and many tributaries still have buffers remaining, helping keep the Nanticoke one of the healthiest waterways leading to the Bay, home to sturgeon and one of the largest populations of bald eagles on the East Coast.

The State of Delaware's Final Phase 3 Watershed Implementation Plan for the Chesapeake Bay Watershed has a target of 1.2 million lbs per year of nitrogen reduction, 24% reduction from current levels by 2025. The plan includes strategies across the developed, natural and agricultural sectors to reach the target. Because of the strong support already in place for implementation of agricultural sector strategies, this project's primary focus was on catalyzing implementation of strategies to meet the developed and natural sector reduction targets.

The Environmental Finance Center (EFC) worked with the Nanticoke Watershed Alliance (NWA) and other partners in Delaware's Nanticoke River watershed to develop a stormwater management strategy that targets programming for the variety of landowners in the region to meet the Phase 3 WIP 2025 goals. The fundamental questions addressed by this project were: 1) How can demographic and parcel information be used to better target water quality programs and projects across both the regulated and unregulated areas of the watershed to maximize stormwater runoff pollution reduction outcomes? 2) How can the partners in the region refine their existing collaborative efforts to deliver and finance effective, sustainable stormwater pollution reduction programs?

The project team convened stakeholders to form the Nanticoke Advisory Committee. Research included interviews with organizations and government agencies, as well as review of existing water quality and natural resource management plans and strategies. EFC developed GIS information regarding parcel size and land use. This information was shared and discussed with the Advisory Committee resulting in the development of six recommendations to catalyze water quality improvements and identifying immediate strategic next steps.

2. **Summary of Accomplishments**

In four to five sentences, provide a brief summary of the project's key accomplishments and outcomes that were observed or measured.

The key accomplishments of this project revolve around beginning to build capacity and create stronger norms around collaboration and coordination, particularly around water quality education and restoration/conservation project planning and implementation. Nanticoke Advisory Committee members discussed with the project team education opportunities and audiences that have been left out of current education initiatives. All members of the Advisory Council agreed to continue to meet to support this collaboration and coordination. The project team identified two existing partnerships in which the Nanticoke River needs to have a regular presence - the Delmarva Restoration and Conservation Network (DRCN) and the Middle Chesapeake Sentinel Landscape (MCSL). Finding match to maximize the impact of federal funding in the watershed was identified as a significant issue that needs to be addressed, especially with Delaware's state revolving fund program and the Water Infrastructure Advisory Council. The results of the project team's research and interviews showed that there is a gap in programming for unregulated landowners with less than 10 acres in the region

who are probably not agricultural producers. The project team engaged with DelDOT to identify locations for demonstration of roadside BMP implementation. Finally and most importantly, the advisory committee members developed a shared commitment to expand capacity to partner with tax ditches to maximize water quality benefits from ditch management, which is essential to meeting water quality goals for the Nanticoke River.

3. **Project Activities & Outcomes**

Activities

- *Describe and quantify (using the approved metrics referenced in your grant agreement) the primary activities conducted during this grant.*
- *Briefly explain discrepancies between the activities conducted during the grant and the activities agreed upon in your grant agreement.*

Outcomes

- *Describe and quantify progress towards achieving the project outcomes described in your grant agreement. (Quantify using the approved metrics referenced in your grant agreement or by using more relevant metrics not included in the application.)*
- *Briefly explain discrepancies between what actually happened compared to what was anticipated to happen.*
- *Provide any further information (such as unexpected outcomes) important for understanding project activities and outcome results.*

Metrics as reported:
1 plan proposed - 1 plan developed
20 people reached proposed - 24 people reached
10 people with changed behavior - 12 people with changed behavior

Project activities conducted during this grant included forming and meeting with the advisory committee, conducting interviews, reviewing plans, analyzing demographic and spatial data, and developing a plan with recommended priority actions to implement following completion of the project. The primary outcomes of this grant were a set of recommendations, which were shared with advisory committee members, and pledges from committee members and other partners to continue collaborative work going forward. Translated into metrics, the project resulted in one plan (the set of recommendations), 24 people reached, and 12 people with changed behavior (engaging in new collaborations, discussing how to implement recommendations, searching for funding opportunities, coordinating better with partners, etc.). Highlights from meetings, research, and discussions about the recommendations are summarized below.

<u>Meetings and interviews</u>
EFC and NWA held three advisory committee meetings that included 15 representatives of state, municipal and local entities that have relevant expertise and capacities regarding water quality. EFC and NWA also met with and/or interviewed 21 people at state agencies and other organizations regarding specific water quality issues in the Nanticoke River watershed in Delaware, including:

- Sussex Conservation District
- Sussex County Planning Department
- DNREC Chesapeake Bay Program
- DNREC MS4 & Drainage Programs
- Chesapeake Conservancy
- Middle Chesapeake Sentinel Landscape program
- Delaware Association of Conservation Districts
- Delaware Department of Agriculture
- Delmarva Restoration and Conservation Network

<u>Desktop research</u>
EFC and NWA reviewed 11 existing plans:

- Sussex County Comprehensive Plan (2018)
- Sussex County Hazard Mitigation Plan (2016)
- Nanticoke River Watershed Restoration Plan (2009)

- Nanticoke River Pollution Control Strategy (2004)
- Nanticoke River Watershed Management Plan (2010)
- Delaware's DRAFT Phase III Chesapeake Bay Watershed Implementation Plan (2019)
- Laurel Watershed Implementation Plan (2016)
- Nanticoke River Nutrient TMDLs (mainstem and tributaries, 1998 and 2000)
- Economic Benefits and Jobs Provided by Delaware Watersheds (2012)
- USGS Bucks Branch Water Quality Study Report (2018)
- Strategies for Financing Water Quality Restoration in Delaware (2017)

Review of the plans showed consensus on a set of best management practices that should be implemented to improve water quality, including limiting disturbed areas and impervious cover, stormwater basin retrofits, conservation design, flood storage, buffer strips, detention/retention basins, grassed waterways, streamside management zones, regular septic system maintenance and pump out, and cover crops. A survey of Delaware residents views on water quality conducted by the Delaware Nature Society in December of 2014 was also reviewed. It showed that:

- Sussex County residents gave waterways in general a C +
- 67% think often or sometimes about how clean their water is
- 37% think poor water quality is hurting state's economy
- 82% think water quality can be fixed but not a strong sense of personal responsibility to fix
- 45% of Sussex County residents think local area not getting fair share of state dollars
- 36% have above average concern about water quality
- 58% of Sussex County participants would support a fee; 39% would oppose a fee

New collaboration opportunities

Through the course of conducting research and interviews, new connections were made with DelDOT, the Delmarva Restoration and Conservation Network (DRCN), and Middle Chesapeake Sentinel Landscape (MCSL), which illuminated new opportunities for collaborative water quality project implementation. The MCSL is a Sentinel Landscapes Partnership, which is a coalition of federal agencies, state and local governments, and non-governmental organizations that works with private landowners to advance sustainable land management practices around military installations and ranges. Since 2013, the partnership has allowed the United States Department of Defense, Department of Agriculture, and Department of the Interior to encourage private landowners to enroll in voluntary assistance programs that support defense, conservation, and agricultural missions. The Middle Chesapeake Sentinel Landscape includes most of the Nanticoke watershed as shown in the map below. To date, this collaboration has protected 12,700 acres and enrolled 120,300 acres in cost-share programs. EFC presented about this project at the February 5, 2020 MCSL meeting, and EFC/NWA will share final recommendations with the group and likely participate in future meetings. Neither NWA nor the DNREC Bay Program staff were directly engaged with MCSL at the beginning of the project. (see Map 1 in Atlas attachment). Partnering with MCSL to incentivize enrollment in cost-share programs could be an important strategy to scaling up agricultural BMP implementation.

EFC and NWA also learned of the DRCN and NWA began participating in their meetings. The network includes local, state and federal partners, both governmental and non-governmental. The network was initiated in 2017 with support from the US Fish and Wildlife Service. The network's mission is "to restore and conserve Delmarva's landscapes, waterways, and shorelines that are special to its people, fundamental to its economy, and vital for its native fish, wildlife, and plants." DRCN should present additional opportunities for improved collaboration in the Nanticoke watershed.

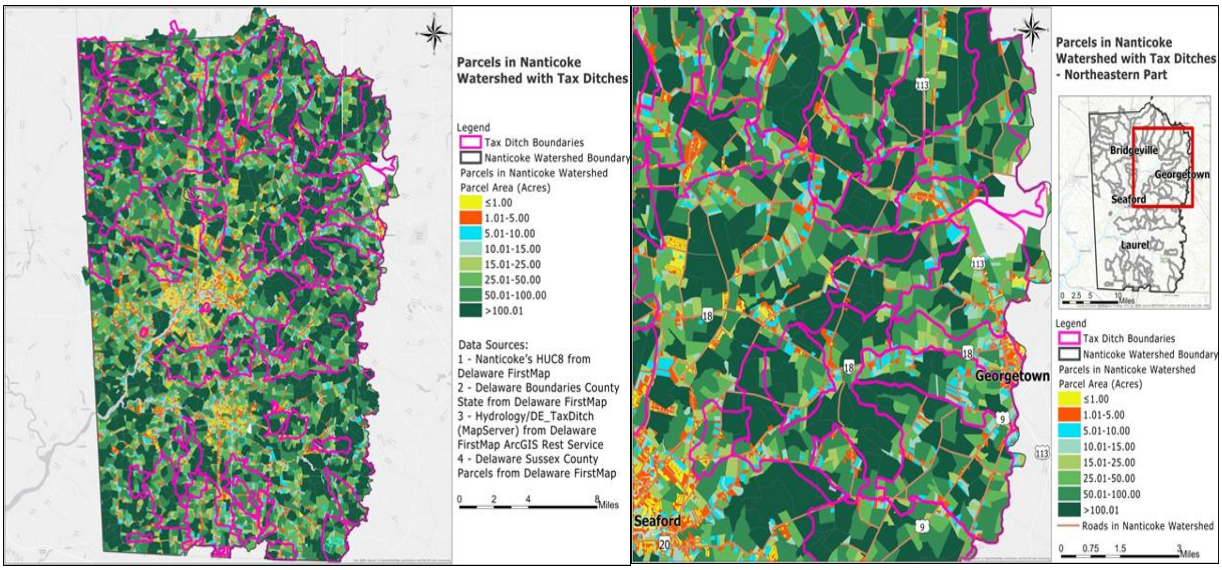
Analysis of demographic and spatial data

As a part of the project's research activities, EFC conducted GIS analysis of parcel and land use data and other information to identify opportunities and understand how to better target water quality education and programming to advance implementation of WIP strategies. Overall, the Nanticoke watershed in Delaware contains 34,852 parcels and has an area of approximately 270,000 acres. To understand the different opportunities presented by targeting different parcel size groupings, they were broken down into groups:

- 0 – 0.99 acres: 3% of total acreage of region

- 1 – 49.99 acres: 35% of total acreage of region
- 50+ acres: 61% of total acreage of region

Because tax ditches are an important feature in the landscape and are potentially a large opportunity to improve water quality, spatial information on tax ditch "watershed" boundaries and channels was analyzed against parcel sizes and land use data. An analysis of tax ditch parcels found that approximately half of land (150,000 acres) in the Delaware portion of Nanticoke River watershed is in a tax ditch. Most of these parcels are one acre or smaller, though there are significant numbers of parcels in other size categories, as shown in the graph below. Of the 34,852 parcels in the study area, about 15,000 parcels are in a tax ditch, highlighting the need to understand water quality issues through this lens. (See Atlas for larger views of these maps).

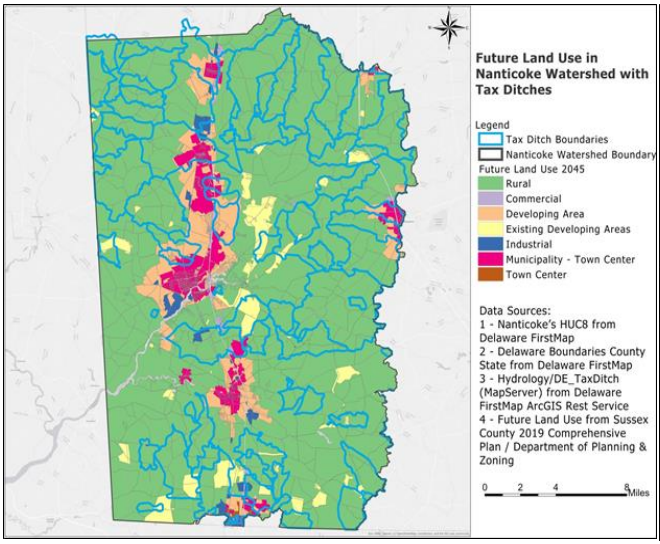


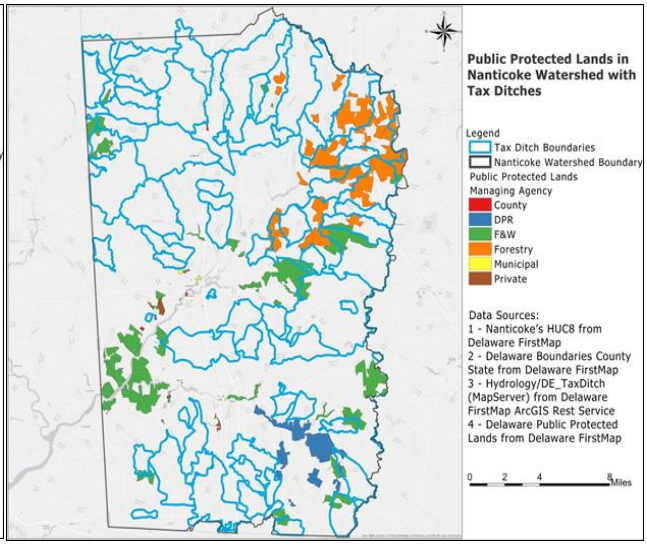
Managing agency	Area in watershed (acres)	% of watershed in protected lands	Area within ditches (acres)
Fish and Wildlife	13,772	48%	4,007
Forestry	11,350	39%	10,095
DPR	3,205	11%	136
Private	332	1%	30
Municipal	90	.03%	5
County	21	.01%	-
TOTAL	**28,770**		**14,273**

Not surprisingly, parcels of 50 acres or more cover 56% of the land area in these tax ditches, reflecting the large amount of agriculture in the region as well as the presence of state forest lands. Importantly, approximately 10% of the land area in tax ditches is public land, mostly held by forestry and fish and wildlife managing agencies. (See Atlas for larger views

of maps below). Another point of analysis evaluated tax ditches alongside future land use and developing areas. The last table shows that there is a small number of ditches predicted to experience development pressure in the coming decades.

% of ditch in developing area	# of ditches	% of ditches	Area of developing area	% of developing area	Area of ditches	% of each ditch's area
40-100%	5	6%	2,676	32%	4,156	3%
10-39%	9	11%	4,736	57%	29,446	20%
1-9%	7	9%	845	10%	18,470	13%
<1%	59	74%	-	0.0%	93,508	64%
Total	**80**		**8,257**		**145,580**	





The tax ditch analysis and conversations with partners engaged in tax ditch management resulted in a set of potential criteria for prioritizing engagement with tax ditches, depending on the desired outcome. EFC examined the different data within a sample tax ditch (Meadow Branch maps in Atlas) as part of this process. Possible criteria that can be used for tax ditch strategy prioritization could include:

- Inactive tax ditch association
- Ditch watershed contains more public/protected land
- Small number of members
- Highest or lowest amount of residential or agricultural land use
- Current zoning or future growth areas
- Road/stream/ditch crossings
- Nutrient or sediment contributions
- Proximity to flood prone areas/urban runoff issues
- Proximity to Nanticoke River mainstem

Further work to understand, develop, and test strategies focused on tax ditches is one of the recommendations and is proposed as follow-up work to this project.

Project recommendations - discussion and prioritization

The advisory committee discussed six preliminary recommendations at their meetings:

1. Invest in water quality education.
2. Reinvigorate water quality project convening and coordination.
3. Support watershed approach to MS4 sector in Sussex County.
4. Support implementation of agricultural BMPs.
5. Maximize existing opportunities and investments.
6. Support naturalization of tax ditches.

In the course of prioritizing the recommendations, specific comments regarding each recommendation were also discussed and noted below.

1) Invest in water quality education

- There is a need to identify lead organization and identify partner roles
- Consideration should be given to need among municipalities for education under forthcoming MS4 permits and education coordinator through Department of Agriculture
- Need more resources for small landowners and homeowners associations
- Capitalize on interest in DE Extension events

2) Reinvigorate water quality project convening and coordination.

- Continue participating in Delmarva Restoration and Conservation Network and Middle Chesapeake Sentinel Landscape meetings; it was clear at these meetings that non-federal match is a challenge for conservation partners
- Capitalize on partnerships with universities

3) Support watershed approach for MS4 sector in Sussex County.

- Continue to partner with Delaware Department of Transportation on identifying and implementing roadside BMP demonstration projects
- Get an update on Sussex County stormwater program

4) Support implementation of agricultural BMPs.

- Additional cost-share for cover crops
- Nanticoke Watershed Alliance has an initiative for naturalization on poultry farms
- Explore support from Middle Chesapeake Sentinel Landscapes for administration piece

5) Maximize existing opportunities and investments.

- Municipal revenue streams from roads - can this money be used as match for federal dollars?
- Need to understand Clean Water Trust Fund opportunities and discuss with WIAC the grants versus loans barrier to getting federal dollars on the ground; need to consider affordability criteria
- Investigate opportunities with Sussex County funding for match
- Investigate circuit rider for the MS4 municipalities to coordinate projects
- Any settlement or penalty funds available for this work?
- How do the difficulties getting participants for Sussex Conservation District's bank stabilization RCPP project tie into this?

6) Support naturalization of tax ditches.

- But don't *call* it naturalization – must be about drainage. How make this about drainage *and* water quality?

- Would grass buffer BMP in ditch rights-of-way count toward WIP goals?
- Ditch improvement strategy considerations -- areas expecting more development in the future? larger parcels and fewer landowners? less development pressure?
- Ditch manager succession and retirement is a big issue; management capacity is a problem
- Conservation districts do most of the ditch maintenance
- Easier to engage people who are already engaged
- Need demonstration projects to help people visualize what a naturalized ditch looks like and education around ditch improvement that showcases existing projects
- Need education for new residents/landowners--they don't understand the purpose and importance of ditches
- What questions and concerns do people, especially ditch managers and farmers, have about naturalization projects?
- What practices benefit water quality/quantity/habitat but would also help ditch managers/associations and landowners the most? Practices that reduce or eliminate maintenance over the long term would be attractive.
- Propose tiered actions 1) mowing/grass buffers; 2) bank stabilization; 3) full stream restoration
- Where can we support tax ditch consolidation and updated management or assumption of ditch management by a nonprofit partner or similar entity? What would help make the tax ditch governance/management/maintenance situation easier on people?
- Demo projects and publicity should cover where projects are, what happened (good and bad results), what maintenance now required, where did funding come from, and other questions
- Need to highlight other co-benefits of ditch projects like habitat improvement/wetland creation, esp. for ducks

To narrow down and prioritize these strategies, the committee concluded that recommendations about the agricultural and MS4 sector were more about supporting existing initiatives and maximizing opportunities for co-benefits from project implementation. The committee also concluded that there would be substantial overlap between partners engaging in project implementation and water quality education programming, so these two recommendations were combined. Finally, the committee categorized tax ditch management as an existing opportunity and investment. There was also significant discussion about the proposed Clean Water Trust Fund and the need for engagement with the Water Infrastructure Advisory Council in terms of supporting green infrastructure and restoration projects to reach water quality goals.

The advisory committee decided to prioritize two strategies for follow-up after grant completion:

1. **Maximize existing opportunities and investments (including ditch-related work); and**
2. **Reinvigorate convening/coordinating of water quality education and restoration projects within Delaware.**

4. Challenges and Lessons Learned

Describe any specific challenges that have arisen during the course of the project and how they have been addressed. Also describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt their projects to build upon some of these key lessons about what worked best and what did not?

As we have experienced elsewhere, the inability to obtain information about projects implemented using NRCS funding hampers creating an accurate assessment of existing conditions. Likewise, there is not an existing way to collect information about the interests of unregulated, non-agricultural landowners and what programming would most effectively engage them. Finally, managing road runoff in the Nanticoke River watershed is likely a significant water quality issue. The vast majority of the roads in the watershed are managed by the Delaware Department of Transportation (DelDOT) but DelDOT does not perceive that it has any obligations under the Chesapeake Bay TMDL because it does not have an MS4 permit covering the area. The state's WIP strategy is led through DNREC, seemingly without substantial

engagement from the governor's office. While the Delaware Department of Agriculture clearly understands the role of agriculture in addressing Bay goals, DelDOT does not see those goals as a priority at all.

A significant challenge to meeting Bay goals in the watershed is the lack of sufficient private landowner outreach, project planning and implementation capacity in the watershed. It would be best if this capacity was built outside of state agencies as it is more likely to be sustained over time. In addition, our experience has shown that private landowners often are more inclined to engage with non-governmental organizations that have demonstrated expertise. In order to help develop this needed capacity, state agencies should strategically leverage their resources with other potential funding partners. Capacity and coordination is also needed around water quality education to deepen the community's valuing of its water resources. The importance of identifying ways to leverage state and local match to federal funding is a common issue in this area. An important lesson is that outreach, project planning and implementation should be strategically designed to engage tax ditches to maximize water quality benefits while also ensuring adequate drainage.

The outcome of this project would have been substantially different without the COVID-19 crisis resulting in a shift of funding away from a proposed $50 million Clean Water Trust Fund. The project partners were discussing how to use these resources to better match federal dollars and address capacity needs in the watershed to meet Bay TMDL goals. The Clean Water Trust Fund legislation is now dead and the state budget includes a proposed $13 million to support clean water programs which is comparable to state budget funding for 2018.

This project occurred at the same time as one in the Oxford Region of southern Chester County, Pennsylvania. The following contrasts and comparisons provide a preliminary report, with a final assessment to be shared in a more complete report uploaded in addition to this report. Interestingly, in both landscapes, investing in education was seen as a necessary and catalytic activity in order to improve the potential of meeting the respective Chesapeake Bay WIP 3 goals. Parcel and landownership research demonstrated in both watersheds that a significant number of landowners are likely not receiving any water quality education or programming, either through conservation district programming generally targeted at agricultural best management practices or through municipal programming targeted at separate storm sewer systems. Local municipalities in both watersheds were not accessing state revolving funds for their work and did not know whether or how they could access this funding, demonstrating a need for better education and technical assistance in getting these funds to reach smaller Chesapeake Bay communities. Not surprisingly, meeting WIP goals in both watersheds will require significant project implementation by agricultural landowners, and while the focus is on different BMPs in each watershed, partners have not figured out an effective strategy to ensure adequate levels of voluntary participation of these landowners. As for differences across the two watersheds, the different forms of local government result in different partner structures. Delaware municipalities do not have a system of Environmental Advisory Councils, as there are in Pennsylvania. Because of the township structure, Pennsylvania municipalities have more opportunities to generate local match than Delaware municipalities do. However, Delaware has tax ditches, a water management system that could be better leveraged for water quality benefits. Finally, most of the road miles in the Oxford Region are managed by townships, while most of the roads in the Nanticoke River watershed are managed by the Delaware Department of Transportation. This can facilitate implementation of water quality BMPs if the state agency is an active partner but can substantially limit success if it is not.

5. Dissemination

- *Briefly identify any dissemination of lessons learned or other project results to external audiences, such as the public or other conservation organizations.*
- *For those projects that have demonstrable nutrient and sediment reductions please elaborate on how those results were reported toward the Watershed Implementation Plan.*

The recommendations were shared with the Nanticoke Advisory Committee and were well-received. The members actively engaged in a discussion to prioritize the recommendations to help guide future work. As a direct result of this work, NWA is leading development of a NFWF grant proposal to focus on two of the six recommendations. The project partners met with additional DNREC staff to share the GIS parcel and land cover/land use information. We will be sharing a final report on the project with all of the advisory committee members.

The project partners had been scheduled to present information about this project and the companion project in the Oxford Region of Pennsylvania at two conferences this spring – the Choose Clean Water conference in May 2020 and the Chesapeake Studies: Change and Continuity in America's Estuary in June 2020 – and neither conference was held as a result of the COVID-19 crisis. It appears that we will still be able to present at the Choose Clean Water Conference in May 2021. We anticipate presenting about the project at the next State of the Nanticoke meeting as well as with the MCSL and the DRCN. Both EFC and NWA will share information about the project through their websites and/or other existing communications avenues and develop alternative dissemination strategies.

6. Readiness for Scale Up

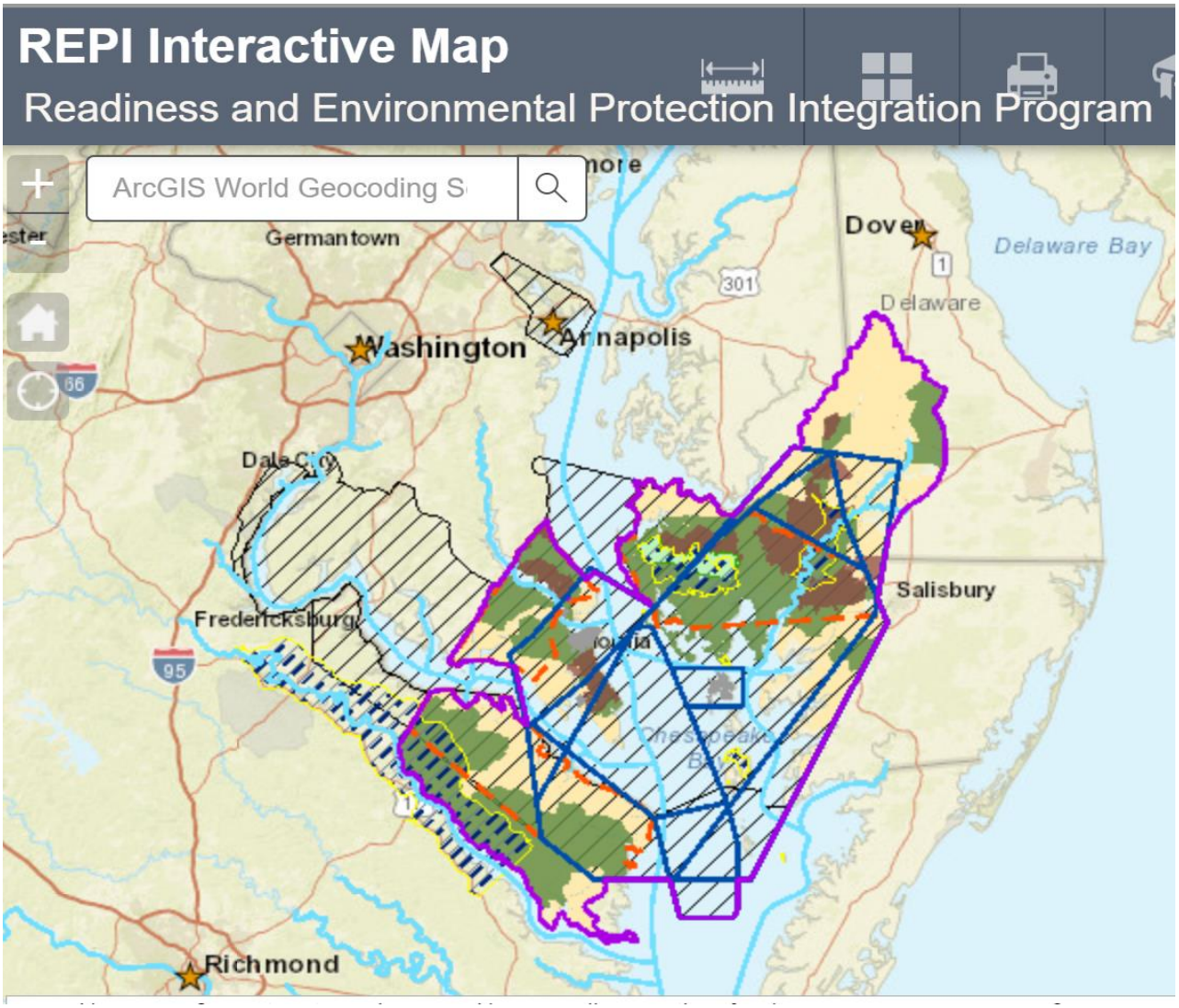
Consider how the project's approach or strategy might be more broadly implemented on a widespread scale (e.g., state-wide, watershed-wide). Describe the next step in either determining your project's readiness for "scale up" or the next steps in taking your project "to scale". For this purpose, "scale up" may defined as implementing an approach/strategy/technology to its maximum potential through a range of mechanisms (e.g., integrating it into a government program, developing markets, integrating it into regulatory programs, implementing demonstrations in new locations or with new audiences or applied to different types of landowners, etc.

The strategy employed for this project can be widely implemented, though needed capacity will increase with the size of the watershed. In essence, our strategy was to: 1) work with all partners on a watershed basis and identify who can do what, revenue streams, and local water quality interests; 2) outline existing plans, programs and projects; 3) review demographic, land use and land ownership information to better understand the audiences whose behavior needs to change; 4) identify capacity needs and gaps for planning, programming, and project implementation; and 5) with all project partners, identify organizational leads and funding resources to initiate work to address the gaps while providing support for any new structures. This last step is essential to making sustainable changes.

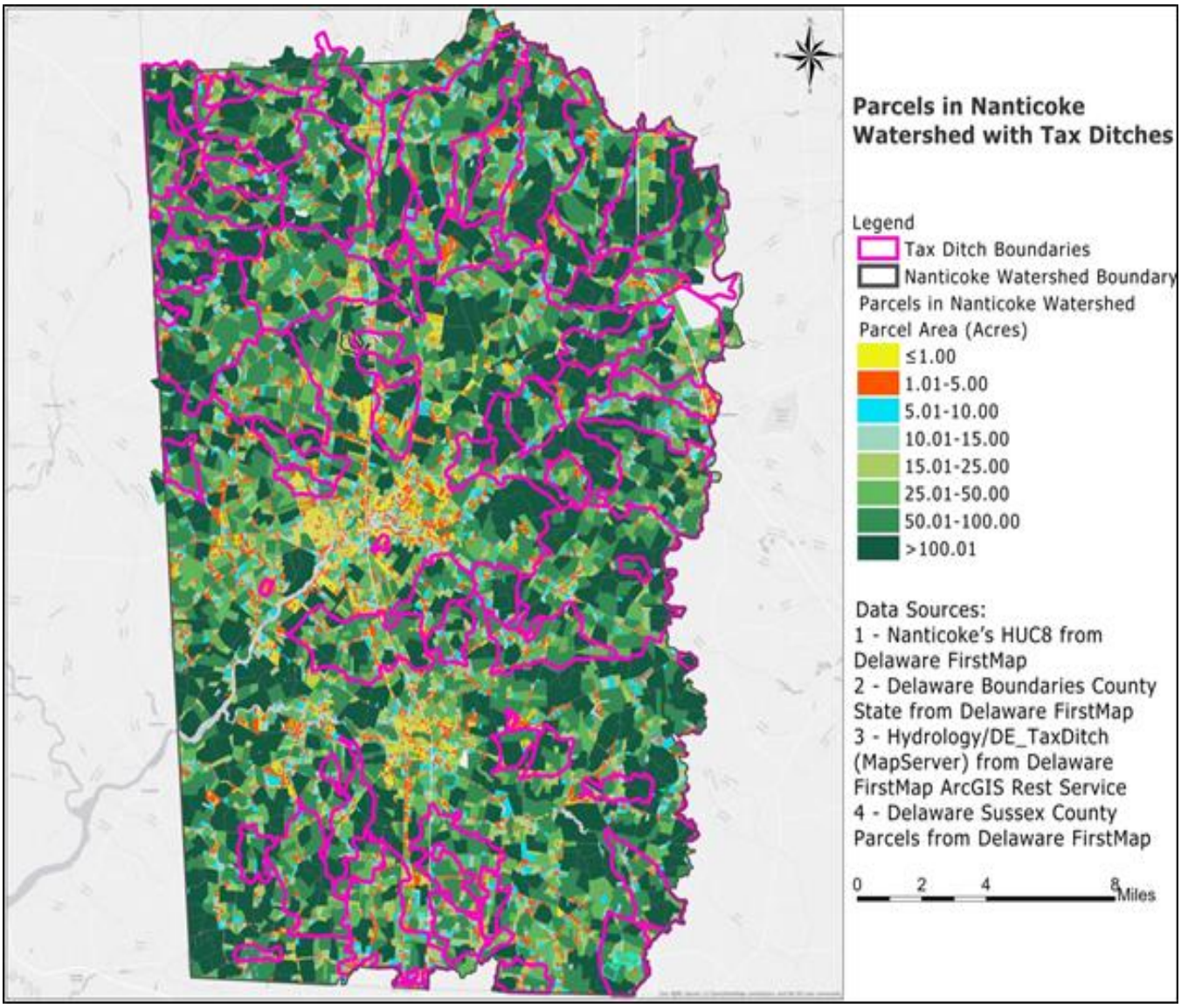
This project has reinforced EFC's experience that there are certain enabling conditions that significantly improve the likelihood of effective partnerships and collaborations to address water quality challenges. A key element of success is the pairing of municipal and watershed organization capacity to sustain the focus on water quality over time. In the Nanticoke River Watershed, the Sussex Conservation District has sustained engagement and expertise in planning, programming, and project implementation for many stormwater management practices. However, their capacity is limited. DNREC staff engage to a certain extent in planning, programming and project implementation but in other landscapes the majority of this capacity rests with non-governmental organizations. Likewise, Sussex County does not have sufficient capacity to support extensive engagement in the Nanticoke River watershed. There is a need for additional capacity. Furthermore, the recommendation to focus on water quality education is essential in this watershed - the community does not actively engage in water quality advocacy or voluntarily implement water quality practices on a widespread basis, indicating a disconnect between valuing clean water (as demonstrated in the survey responses) and their actions (or inactions) to protect water quality at home and at work. A community that values water quality is more likely to support building capacity in both its public and non-governmental organizations to improve and protect water quality.

NFWF Final Programmatic Report June 2020
Levering Partnership and Data in the Nanticoke for Stormwater Best Management Practices (DE)
Atlas of Maps

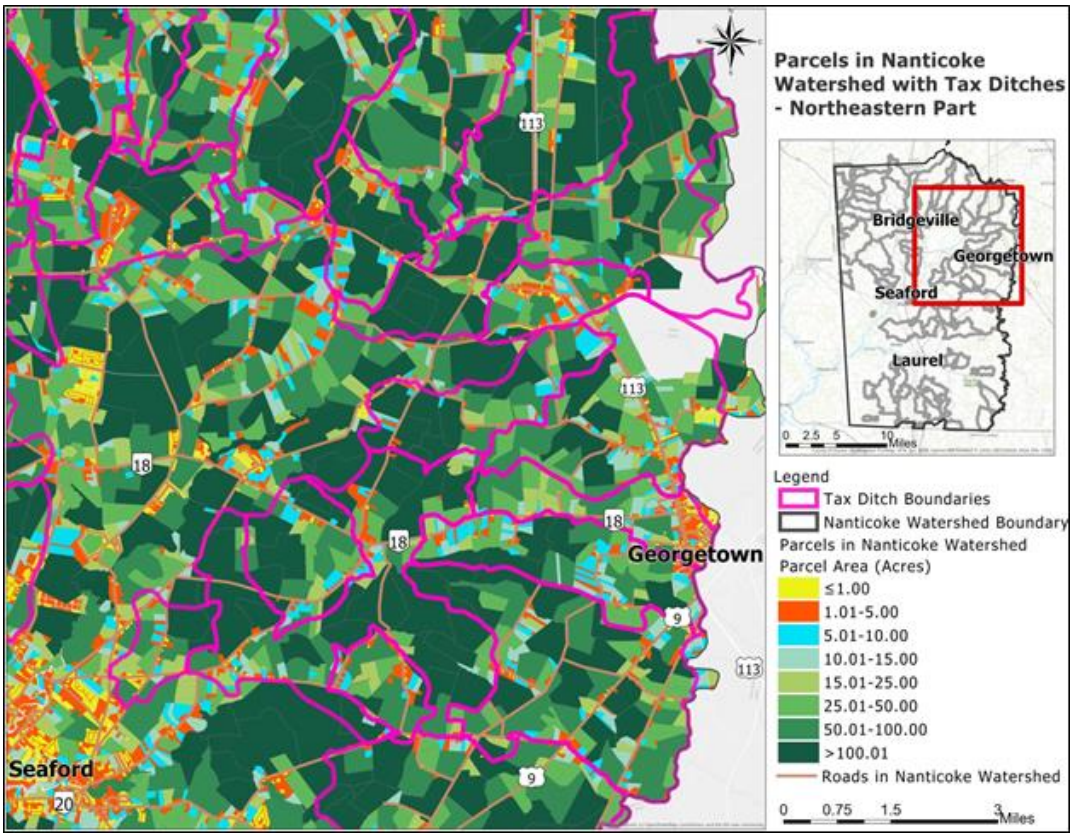
Map 1: Middle Chesapeake Sentinel Landscape



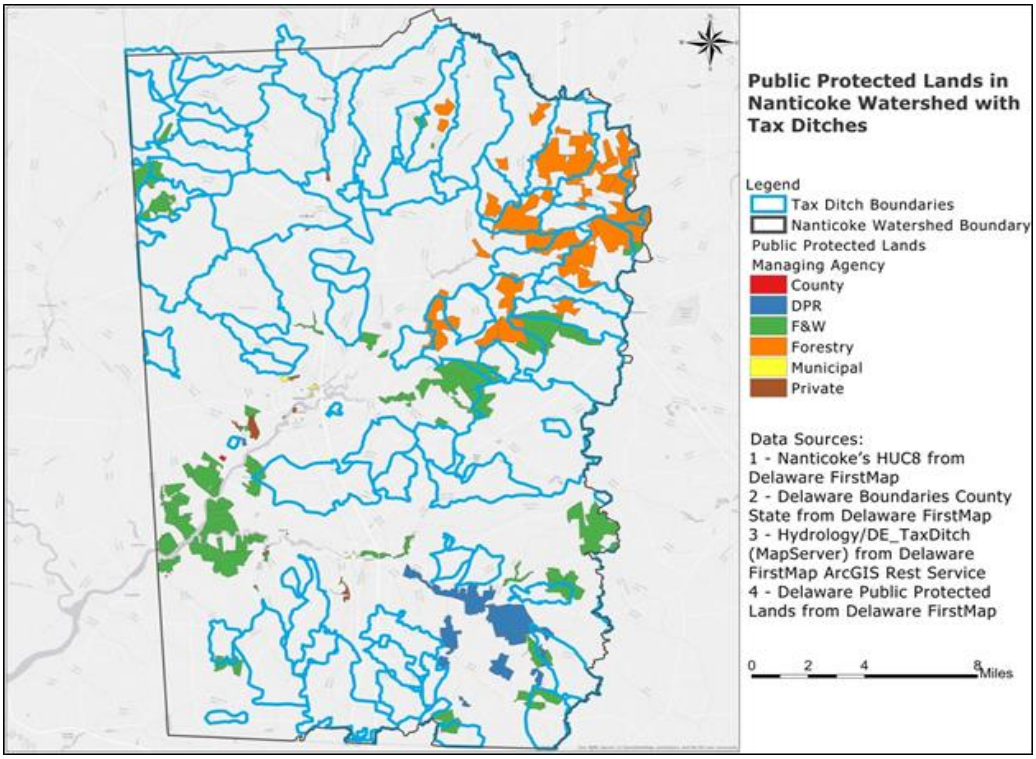
Map 2


Parcels in Nanticoke Watershed with Tax Ditches
Legend
Tax Ditch Boundaries
Nanticoke Watershed Boundary
Parcels in Nanticoke Watershed
Parcel Area (Acres)
≤1.00
1.01-5.00
5.01-10.00
10.01-15.00
15.01-25.00
25.01-50.00
50.01-100.00
>100.01
Data Sources:
1 - Nanticoke's HUC8 from Delaware FirstMap
2 - Delaware Boundaries County State from Delaware FirstMap
3 - Hydrology/DE_TaxDitch (MapServer) from Delaware FirstMap ArcGIS Rest Service
4 - Delaware Sussex County Parcels from Delaware FirstMap
0 2 4 8 Miles

Map 3


Parcels in Nanticoke Watershed with Tax Ditches - Northeastern Part
Bridgeville
Georgetown
Seaford
Laurel
0 2.5 5 10 Miles
Legend
Tax Ditch Boundaries
Nanticoke Watershed Boundary
Parcels in Nanticoke Watershed
Parcel Area (Acres)
≤1.00
1.01-5.00
5.01-10.00
10.01-15.00
15.01-25.00
25.01-50.00
50.01-100.00
>100.01
Roads in Nanticoke Watershed
0 0.75 1.5 3 Miles
Georgetown
Seaford
113
18
9
20

Map 4


Public Protected Lands in Nanticoke Watershed with Tax Ditches
Legend
Tax Ditch Boundaries
Nanticoke Watershed Boundary
Public Protected Lands
Managing Agency
County
DPR
F&W
Forestry
Municipal
Private
Data Sources:
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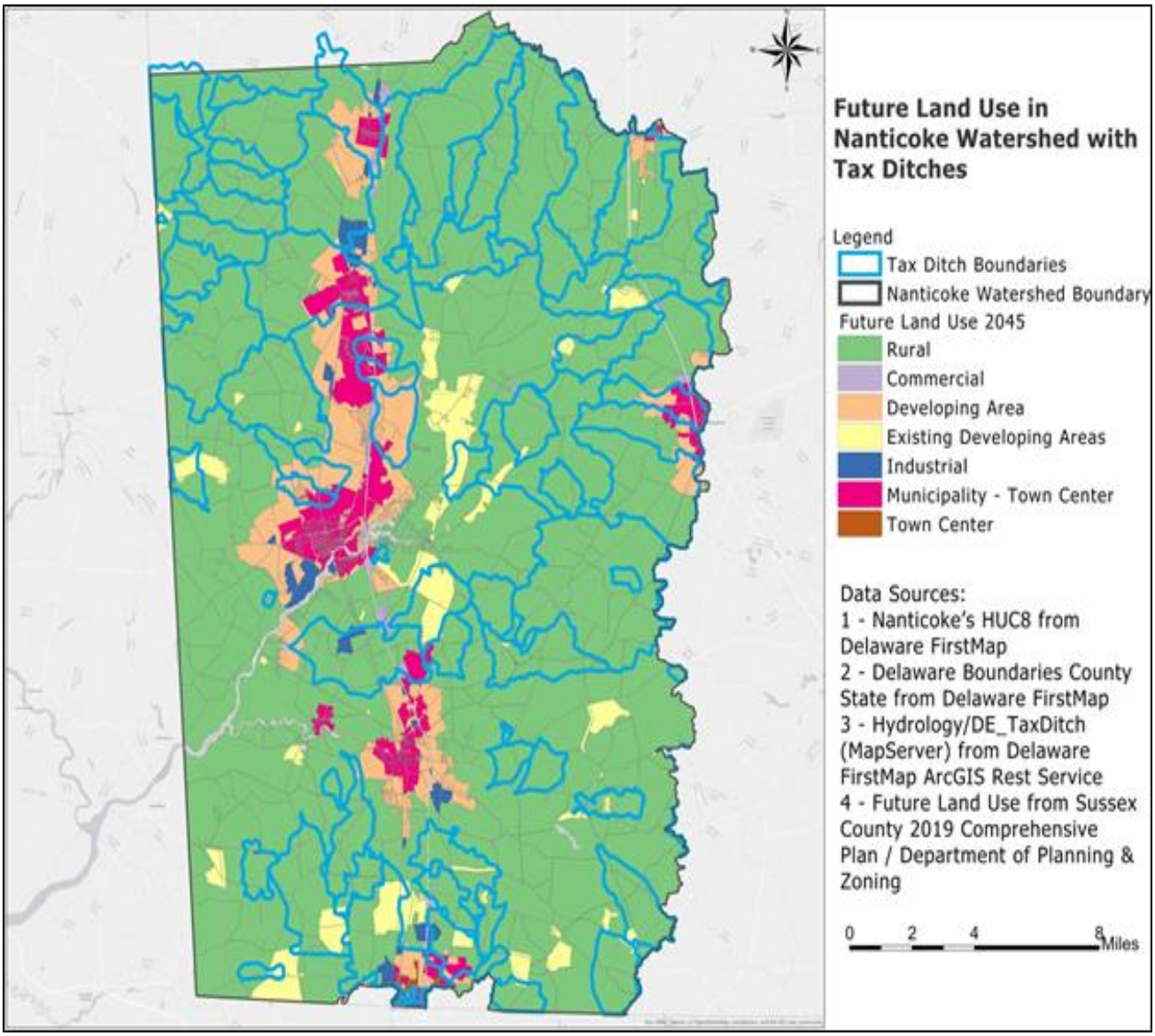
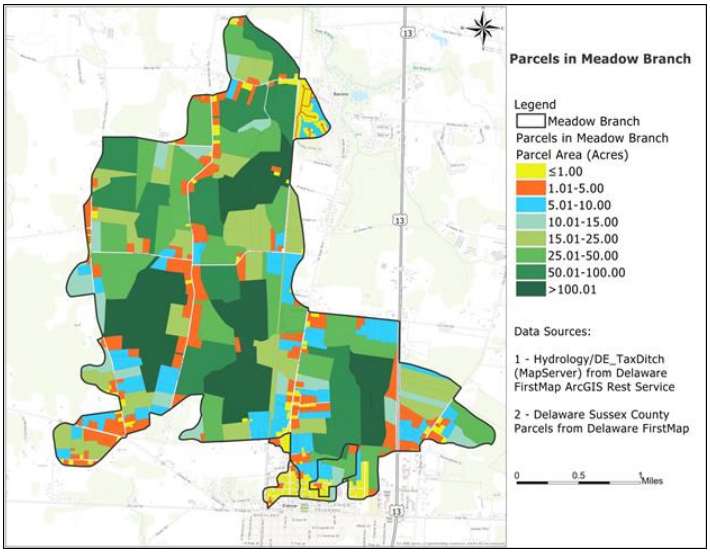
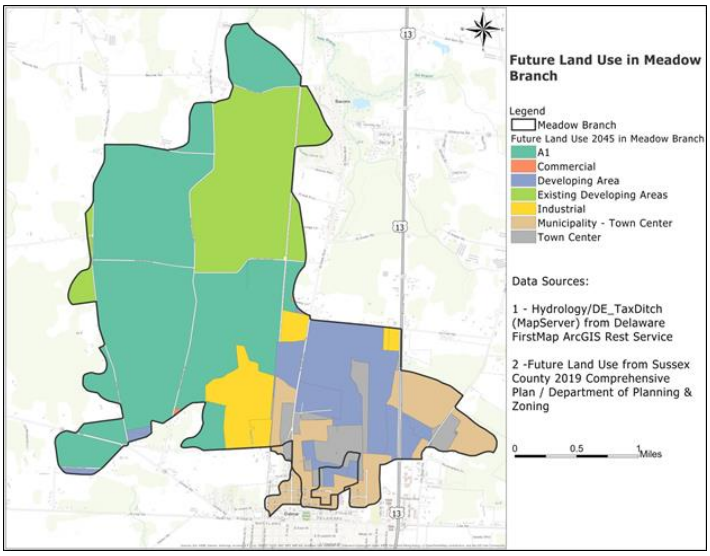
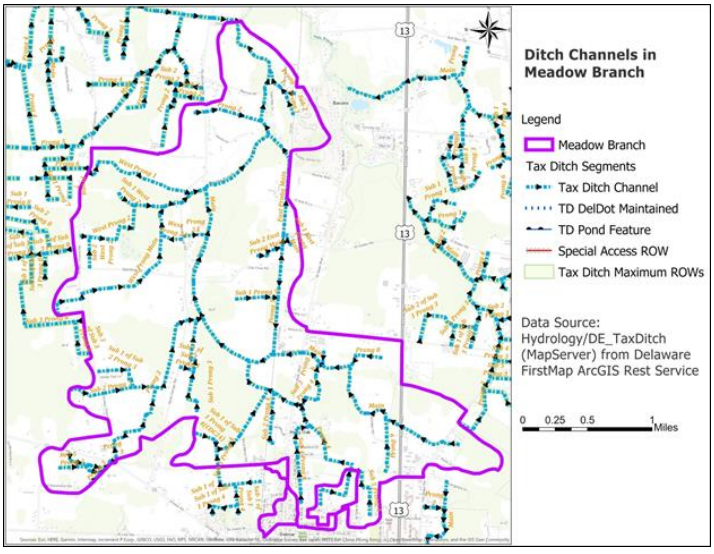
2 - Delaware Boundaries County State from Delaware FirstMap
3 - Hydrology/DE_TaxDitch (MapServer) from Delaware FirstMap ArcGIS Rest Service
4 - Delaware Public Protected Lands from Delaware FirstMap
0 2 4 8 Miles

Map 5


Future Land Use in Nanticoke Watershed with Tax Ditches
Legend
Tax Ditch Boundaries
Nanticoke Watershed Boundary
Future Land Use 2045
Rural
Commercial
Developing Area
Existing Developing Areas
Industrial
Municipality - Town Center
Town Center
Data Sources:
1 - Nanticoke's HUC8 from Delaware FirstMap
2 - Delaware Boundaries County State from Delaware FirstMap
3 - Hydrology/DE_TaxDitch (MapServer) from Delaware FirstMap ArcGIS Rest Service
4 - Future Land Use from Sussex County 2019 Comprehensive Plan / Department of Planning & Zoning
0 2 4 8 Miles


Parcels in Meadow Branch
Legend
Meadow Branch
Parcels in Meadow Branch
Parcel Area (Acres)
≤1.00
1.01-5.00
5.01-10.00
10.01-15.00
15.01-25.00
25.01-50.00
50.01-100.00
>100.01
Data Sources:
1 - Hydrology/DE_TaxDitch (MapServer) from Delaware FirstMap ArcGIS Rest Service
2 - Delaware Sussex County Parcels from Delaware FirstMap
0 0.5 1 Miles


Future Land Use in Meadow Branch
Legend
Meadow Branch
Future Land Use 2045 in Meadow Branch
A1
Commercial
Developing Area
Existing Developing Areas
Industrial
Municipality - Town Center
Town Center
Data Sources:
1 - Hydrology/DE_TaxDitch (MapServer) from Delaware FirstMap ArcGIS Rest Service
2 -Future Land Use from Sussex County 2019 Comprehensive Plan / Department of Planning & Zoning
0 0.5 1 Miles


Ditch Channels in Meadow Branch
Legend
Meadow Branch
Tax Ditch Segments
Tax Ditch Channel
TD DelDot Maintained
TD Pond Feature
Special Access ROW
Tax Ditch Maximum ROWs
Data Source:
Hydrology/DE_TaxDitch (MapServer) from Delaware FirstMap ArcGIS Rest Service
0 0.25 0.5 1 Miles