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## Comment

### WHEN GOING GREEN MEANS GOING INTO THE RED: PENNSYLVANIA'S STRUGGLE FUNDING STORMWATER REGULATIONS CREATES WATER WOES FOR MS4S

HANNAH SCHROER\*

“I say, oh, I am miserable,  
What shall—  
What should I do? And the sea says  
in its lovely voice:  
Excuse me, I have work to do.”<sup>1</sup>

#### I. STEPPING INTO THE WATER: AN INTRODUCTION

The City of Lebanon could manage compliance costs until the regulations changed for the third time.<sup>2</sup> A small city with 25,000 residents, the Pennsylvania Department of Environmental Protection (DEP) regulated Lebanon as a point-source polluter since 2003.<sup>3</sup> But a series of rapid-fire regulatory changes drove up the city's cost of compliance to \$1.4 million annually and forced it to find new revenue to stay afloat.<sup>4</sup>

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\* I would like to thank my parents, who are the wellspring of my passion for writing and stormwater runoff. The Villanova community provided me with boundless encouragement and excellent advice during the writing process, for which I am grateful. I also extend my love and thanks especially to Jacob Schroer, Gidget Zakar, and Carver Edlund, without whom I would have been swept away by this project.

1. MARY OLIVER, *I Go down to the Shore*, in *A THOUSAND MORNINGS: POEMS* 1, 1 (2013).

2. *See Presentation on Regulatory Compliance and Costs Associated with Stormwater Management Before the H. Comm. on Environmental Resources & Energy and H. Comm. on Local Government*, 2019 Leg., 2019 Reg. Sess. 60–63 (Pa. 2019) (statement of Sherry Capello, Mayor of Lebanon, PA) [hereinafter *Stormwater Hearing*] (describing Lebanon's struggle to meet changing state environmental regulations).

3. *See id.* at 60. (discussing origins of DEP regulation). Lebanon's storm sewer outflows into the Susquehanna River. *See id.* at 62. The DEP's initial requirements were fairly lax and able to be covered by the city's general budget. *See id.* at 60.

4. *See id.* at 63, 71 (discussing financial hardships). After 2015, the DEP imposed on Lebanon with harder permitting requirements that required the city to measure its pollution outflow and implement a pollution reduction plan. *See id.* at 60. After the city complied, the state changed its target in 2016 and requested Lebanon create a new pollution reduction plan within one year that showed a plan to reduce the city's sediment, phosphorous, and nitrogen outflows by 10%, 5%, and 3% respectively. *See id.* at 60–61. Adding to the confusion, the DEP determined that street sweeping was not as effective at reducing pollution as previously thought and decreased the credit the city could earn toward its pollution reduc-

The current struggle of small Pennsylvanian communities is one piece of a regulatory puzzle assembled over more than thirty years to revitalize the Chesapeake Bay (the Bay).<sup>5</sup> At forty million acres, the Chesapeake Bay watershed is the focus of a multi-state, federally mandated effort to restore the Bay's water quality by 2025.<sup>6</sup> Once a thriving mix of coast and wetland lush with aquatic plant life and uniquely adapted species, 80% of the Chesapeake Bay's tidal floodwaters are listed as partially or fully impaired by pollution.<sup>7</sup> The lion's share of that pollution washes down from Pennsylvania through the Susquehanna River.<sup>8</sup>

Pennsylvania, filling one-third of the watershed, faces the toughest path to reducing pollution in the Bay.<sup>9</sup> Half of the Commonwealth drains

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tion plan from 85% to 9%, effectively stripping the city of its major source of compliance and leaving it with an expensive capital purchase that would no longer pay for itself. *See id.* at 77–78.

5. *See* Oliver A. Houck, *The Clean Water Act Returns (Again): Part I, TMDLs and the Chesapeake Bay*, 41 ENVTL. L. REP. 10,208, 10,218 (2011) (recognizing point source pollution as a small piece of the pollution problem). While municipal stormwater runoff is a recognized offender, most pollution in the Bay has agricultural origins. *See id.* at 10,214. Existing point sources make up only 20% of the Bay's pollution load and 92% of these sources already have NPDES permits. *See id.* at 10,224.

6. *See id.* at 10,209 (describing Chesapeake Bay's status). The Chesapeake Bay watershed restoration project is the biggest and most challenging in the world. *See id.* The watershed drains 64,000 square miles of land. ENVTL. PROT. AGENCY, CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL) FACT SHEET 1 (2015), [https://www.epa.gov/sites/production/files/2015-07/documents/bay\\_tmdl\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2015-07/documents/bay_tmdl_fact_sheet.pdf) [<https://perma.cc/KZC4-QJGD>] (explaining what a TMDL is). A Total Maximum Daily Load (TMDL) caps the amount of pollution allowed into a body of water at a limit that can sustain safe water quality standards. *See id.*

7. *See* *Pollution*, CHESAPEAKE BAY PROGRAM, [chesapeakebay.net/state/pollution](http://chesapeakebay.net/state/pollution) [<https://perma.cc/R37G-VGK3>] (last visited Sept. 25, 2019) (highlighting extent of pollution in the Chesapeake Bay). *See generally* *Basic Information About Estuaries*, EPA <https://www.epa.gov/nep/basic-information-about-estuaries> [<https://perma.cc/8U6S-ZLJL>] (last updated Dec. 7, 2016) (describing estuaries).

8. *See* *Agriculture*, CHESAPEAKE BAY PROGRAM, [chesapeakebay.net/issues/agriculture](http://chesapeakebay.net/issues/agriculture) [<https://perma.cc/QXA4-5PA2>] (last visited Sept. 25, 2019) (summarizing agricultural contributions to Bay pollution); *see also* Annabelle Klopman, Comment, *An Undercurrent of Discontent: The Chesapeake Bay Total Maximum Daily Load and Its Impact on Bay Industries*, 24 VILL. ENVTL. L.J. 97, 98–99 (2013) (describing agricultural contribution to Chesapeake Bay pollution). There are 88,000 farms releasing polluted runoff, which carries 42% of the nitrogen, 55% of the phosphorus, and 60% of the sediment reaching the Bay. *See id.* Pennsylvania farms make up roughly half of the farms within the Chesapeake Bay watershed. *See id.* at 109; *see also* David McFadden, *Experts Warn of 'Dead Zone' in Chesapeake Bay from Pollution*, BALT. SUN (July 07, 2019), <https://www.baltimoresun.com/news/environment/bs-md-conowingo-pollutants-rainfall-chesapeake-20190706-story.html> [<https://perma.cc/C2MV-R788>] (warning of excess sediment pollution causing dead zone in Chesapeake Bay).

9. *See* *Chesapeake Bay Watershed Pollution Limits*, CHESAPEAKE BAY FOUND., <https://www.cbf.org/how-we-save-the-bay/chesapeake-clean-water-blueprint/pollution-limits/index.html> [<https://perma.cc/U3WX-TN2C>] (last visited Aug. 17, 2019) (providing updates on pollution reduction efforts and projections on pollution levels relative to the 2025 goals of the program); *see also* ENVTL. FIN. CTR.,

to the Chesapeake Bay, and one quarter of that land is farmland.<sup>10</sup> Despite heightened regulations on point-source polluters and a growing number of incentives for farmers to undertake conservation actions, a \$256 million funding gap indicates Pennsylvania will not meet its mandated pollution reduction goal by the 2025 deadline.<sup>11</sup>

Pennsylvania's current focus on meeting the Bay's "pollution diet" by imposing stricter requirements on municipalities, while failing to monitor agricultural compliance, will kill the entire endeavor.<sup>12</sup> The state's approach of more intensely regulating point source polluters raises costs for local municipalities but does not decrease the state's pollution output to below its designated pollution cap.<sup>13</sup> In order to meet the Bay's 2025 res-

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FINANCIAL INCENTIVES FOR WATER QUALITY PROTECTION AND RESTORATION ON AGRICULTURAL LANDS IN PENNSYLVANIA (Sept. 28, 2016), [https://www.chesapeakebay.net/channel\\_files/23872/financial\\_incentives\\_for\\_conservation\\_on\\_ag\\_land\\_9-28-16.pdf](https://www.chesapeakebay.net/channel_files/23872/financial_incentives_for_conservation_on_ag_land_9-28-16.pdf) [<https://perma.cc/F6FJ-RC95>] (providing background on Chesapeake Bay watershed); *see also* *Pennsylvania's Chesapeake Bay Plan*, PA. DEP'T ENVTL. PROT., <https://www.dep.pa.gov/Business/Water/Pennsylvania%20%80%99s%20Chesapeake%20Bay%20Program%20Office/Pages/default.aspx> [<https://perma.cc/U2VL-D3AM>] (last visited Sept. 2, 2019) (providing overview of state's Chesapeake Bay strategy). Stormwater runoff impairs more than 11,400 miles of Pennsylvanian streams within the Chesapeake Bay watershed. *See id.*

10. *See* ENVTL. FIN. CTR., *supra* note 9, at 6 (discussing Pennsylvania section of Bay watershed); *see also* Press Release, PA. DEP'T OF ENVTL. PROT., *Majority of Conservation Districts in Bay Watershed Agree to Work with DEP to Reduce Runoff* (Sept. 13, 2016), <http://www.ahs.dep.pa.gov/NewsRoomPublic/articleviewer.aspx?id=21065&typeid=1> [<https://perma.cc/EVV6-W3XL>] (discussing magnitude of conservation effort).

11. *See* Ben Finley, *Chesapeake Bay Foundation Slams Pennsylvania's Plan to Reduce Pollution as 'Woefully Inadequate,'* BALT. SUN (May 28, 2019), <https://www.baltimoresun.com/news/environment/bs-md-chesapeake-bay-report-20190528-story.html> [<https://perma.cc/F5LD-FN3H>] (reporting criticisms of Pennsylvania's Phase III reduction plan); *see also* Meg Wilburn Viviano, *Critics: "Sue Pennsylvania" over Bay Cleanup Shortfall*, CHESAPEAKE BAY MAG. (July 19, 2019), <https://chesapeakebaymagazine.com/critics-sue-pennsylvania-over-bay-cleanup-shortfall/> [<https://perma.cc/T7C3-7X9C>] (noting negative reaction to Pennsylvania's Draft Phase III WIP).

12. *See* Karl Blankenship, *States' Latest Bay Cleanup Plans Found Lacking by EPA*, BAY J. (July 09, 2019), [https://www.bayjournal.com/article/states\\_latest\\_bay\\_cleanup\\_plans\\_found\\_lacking\\_by\\_epa](https://www.bayjournal.com/article/states_latest_bay_cleanup_plans_found_lacking_by_epa) [<https://perma.cc/QH4J-C5UN>] (discussing cause of most Chesapeake Bay pollution). Nitrogen, the cause of dreaded algal blooms and many dead zones, is the key to saving the Chesapeake Bay. *See id.* Because most of the Bay's current pollution shortfall is from Pennsylvania nitrogen, Pennsylvania's failure to reduce nitrogen pollution in upcoming years would ensure the entire jurisdiction misses its 2025 federal deadline. *See id.* Agriculture is the largest source of nutrients for the Chesapeake Bay and will thus be the most important area to focus on in any new plan to reduce pollution. *See id.*

13. *See* PA. DEP'T ENVTL. PROT., 2018 PENN. INTEGRATED WATER QUALITY MONITORING & ASSISTANCE REPORT (2018) [hereinafter 2018 INTEGRATED REPORT], [https://www.depgis.state.pa.us/2018\\_integrated\\_report/index.html](https://www.depgis.state.pa.us/2018_integrated_report/index.html) [<https://perma.cc/83BS-FNRK>] (stating Pennsylvania number of permitted municipalities within watershed); *see also* *Stormwater Hearing*, *supra* note 2, at 47 (statement of Jeffrey Stonehill, Chambersburg Borough Manager) (testifying about municipalities' difficulties affording stormwater improvements). The 340 municipalities within the watershed regulated under the NPDES point source permitting program must

toration deadline, Pennsylvania must monitor and enforce regulations on agricultural non-point source polluters or risk having the EPA pass down even stronger regulations on already struggling municipalities.<sup>14</sup>

Part II of this Comment provides background on federal stormwater regulation of municipalities compared to farmers, the long effort of states and conservationists to clean the Chesapeake Bay, and the lead up to the EPA's declaration of a total maximum daily load (TMDL) across the Chesapeake Bay.<sup>15</sup> Part III focuses on Pennsylvania's approach to stormwater management and the different techniques used to regulate municipalities versus farmers within the Chesapeake Bay watershed.<sup>16</sup> Part IV critiques the state's carrot-and-stick approach as both inequitable and an inefficient use of resources.<sup>17</sup> Part V discusses how political uncertainty is preventing Pennsylvania from reaching its 2025 goal and putting municipalities in a legally vulnerable position.<sup>18</sup>

## II. REMINISCING ON THE GOOD OL' DAYS: AN OVERVIEW OF STORMWATER REGULATIONS

Stormwater runoff is indiscriminate: it accumulates from storms, snow, and ice melt; it runs through lawns, streets, forests, and farms.<sup>19</sup>

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hire engineers to create stormwater models and projections to show they are actually measuring and trying to reduce nitrogen, phosphorus, and sediment pollution before the DEP will approve a permit. *See Stormwater Hearing, supra* note 2, at 42–45. Municipalities are passing the regulatory cost on to property owners in the form of stormwater user fees, the revenue from which can double annual stormwater infrastructure budgets. *See id.* at 57; *see also* Blankenship, *supra* note 12 (expressing doubt on whether the current proposed plans to reduce pollution can succeed without a proper focus on reducing discharge from agricultural sources).

14. *See* ENVTL. FIN. CTR., *supra* note 9, at 6 (describing EPA's backstop measures after Pennsylvania failed to meet its 2016 milestone goal). When Pennsylvania failed to reach 60% of its 2025 pollution goal by 2016, the EPA implemented backstop measures that led to more rigorous point-source pollution regulations for local governments to fund. *See id.*

15. For a further discussion of the legal context of Pennsylvania's current stormwater regulatory scheme, *see* Part II *infra*.

16. For a further discussion of Pennsylvania's bisected approach to stormwater regulations, *see* Part III *infra*.

17. For a further discussion of state oversight of Chesapeake Bay restoration project, *see* Part IV *infra*.

18. For a further discussion of a prediction of how Pennsylvania's current stormwater strategy with impact the Commonwealth's citizens, *see* Part V *infra*.

19. *See* Jonathan Rosenbloom, *Fifty Shades of Gray Infrastructure: Land Use and the Failure to Create Resilient Cities*, 93 WASH. L. REV. 317, 322 (2018) (criticizing land use laws for increasing stormwater); *see also* David Unkovic & J. Adam Matlawski, *How Should Regional Stormwater Systems Be Structured and Financed?*, LEGAL INTELLIGENCER (Apr. 22, 2014) (noting the varied sources where stormwater runoff may be collected from); *Polluted Runoff*, CHESAPEAKE BAY FOUND., <https://www.cbf.org/issues/polluted-runoff/index.html> [<https://perma.cc/83BS-FNRK>] (last visited Aug. 8, 2019) (explaining how harmful runoff pollution is to Chesapeake Bay). Because of their default presumption that development includes gray infrastructure and impervious surfaces, land use laws offer no solution to the stormwater runoff problem. *See* Rosenbloom, *supra*, at 322.

The byproduct of land development, stormwater picks up debris and pollution in its path—wherever its destination.<sup>20</sup> The only true difference between point source and non-point source runoff is how government agencies regulate it and what those distinctions mean for water quality standards.<sup>21</sup>

This Part covers the history of urban and agricultural regulations under the Clean Water Act and the longstanding cleanup efforts in the Chesapeake Bay.<sup>22</sup> Section II.A covers municipal stormwater regulations under the Clean Water Act, including its creation and delegation of responsibility to states.<sup>23</sup> Section II.B looks at the relationship between the federal government and the agriculture industry, particularly in the regulation of large farms under the National Pollutant Discharge Elimination System (NPDES) and the role of manure in non-point source pollution.<sup>24</sup> Section II.C explores the long history of cleanup efforts in the Chesapeake Bay, including Phases I and II of the three-part TMDL established by the EPA.<sup>25</sup>

#### A. *The Mean Streets: A History of Municipal Stormwater Regulation*

Municipalities, traditional point source polluters, control the runoff flowing through their streets using gray infrastructure—a series of catch basins, holding reservoirs, and outlets connected by underground piping—as opposed to green infrastructure, which includes manmade elements replicating natural water infiltration.<sup>26</sup> Gray infrastructure systems are well established in municipal land use laws, making it easier for devel-

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20. See David Law, Note and Comment, *Between a Rock and a Hard Place: Legal and Practical Issues Regarding Municipal Power to Address Federal Mandates*, 50 IDAHO L. REV. 27, 36 (2014) (defining environmental context of stormwater).

21. See Robert B. McKinstry Jr., et al., *Unpave a Parking Lot and Put Up a Paradise: Using Green Infrastructure and Ecosystem Services to Achieve Cost-Effective Compliance*, 42 ENVTL. L. REP. 10,824, 10,826 (2012) (commenting on differing stormwater management practices). The EPA limits pollutants emanating from point sources with scientific-based maximums, which can be measured and verified. See *id.* It controls non-point source pollution with water quality standards. See *id.*

22. For a further discussion of the history of regulation under the Cleanwater Act and information on the effort to clean up the Chesapeake Bay, see Sections II.A–C *infra*.

23. For a further discussion on background of federal and state stormwater regulations, see Section II.A *infra*.

24. For a further discussion of federal and state relationship with agricultural runoff, see Section II.B *infra*.

25. For a further discussion of Pennsylvania’s response to Chesapeake Bay cleanup efforts, see Section II.C *infra*.

26. See 33 U.S.C. § 1362(14) (2019) (defining “point source” as “any means of discernable, confined, and discrete conveyance . . . from which pollutants are or may be discharged.”); see also McKinstry, *supra* note 21, at 10,824 n.4 (comparing green and gray infrastructure). Green infrastructure incorporates green roofs, swales, and permeable surfaces to increase soil infiltration and lower the volume of water entering traditional storm sewers. See McKinstry, *supra* note 21, at 10,824.

opers to design with the existing legal framework and water infrastructure in mind.<sup>27</sup> Green infrastructure makes stormwater management more cost effective in the long-term because it prevents stormwater from entering regulated storm sewers in the first place; water never discharged into waterways is water that never pollutes.<sup>28</sup> Increasingly, thanks to environmental regulations and budget crunches, big cities are incorporating green infrastructure to take advantage of the ecosystem services nature provides.<sup>29</sup> Smaller municipalities, lacking access to initial funding for capital improvements, have a harder time keeping up with their environmental obligations under the Clean Water Act.<sup>30</sup>

### 1. *The Clean Water Act*

Congress enacted the Federal Clean Water Act (CWA) in 1972.<sup>31</sup> Initially a law intended to encourage voluntary best management practices

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27. See CONSERVATION RESEARCH INST., CHANGING COST PERCEPTIONS: AN ANALYSIS OF CONSERVATION DEVELOPMENT 2 (2005), [http://www.auburnhills.org/departments/community\\_development/low\\_impact\\_development/docs/4\\_3F10D62B\\_F3D4\\_4FC9\\_97D8\\_35DB71D6CC4B\\_.pdf](http://www.auburnhills.org/departments/community_development/low_impact_development/docs/4_3F10D62B_F3D4_4FC9_97D8_35DB71D6CC4B_.pdf) [<https://perma.cc/284M-9E55>] (not accounting for cost of changing minds when price comparing conventional and low impact development). The municipal focus on upfront costs enables developers to choose conventional building materials such as concrete over permeable pavers and furthers public opinion that conventional gray infrastructure is always more affordable. *Id.*; see also *Green Infrastructure Cost-Benefit Resources*, ENVTL. PROT. AGENCY (2017), <https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources#costanalysis> [<https://perma.cc/T2PK-YZR6>] (providing information on cost-benefit analysis methods). Straight cost comparisons analyze initial and lifecycle costs while cost-benefit analyses attempt to account for environmental and social outcomes of incorporating green infrastructure. *Id.*

28. See McKinstry, *supra* note 21, at 10,827 (recounting benefits of green infrastructure). Green infrastructure features also provide multiple environmental benefits such as absorbing heat, absorbing water and air pollution, and increasing a neighborhood's overall aesthetic. *See id.*

29. *See id.* at 10,824 (describing implementation of green infrastructure). Philadelphia and New York City use natural environmental services to clean and filter municipal water as part of larger water management plans. *See id.* Philadelphia implemented a program in 2012 to reduce stormwater flow into its sewer system that is expected to save the city \$8 billion. *See id.*

30. *See Stormwater Hearing, supra* note 2, at 47–48 (statement of Jeffrey Stonehill) (accounting municipality's focus on repairing existing infrastructure). The 2,533 inlets of Chambersburg's "gray" storm sewer lead to 128 outfalls into the adjacent river. *See id.* at 42. According to Jeffrey Stonehill, Borough Manager, the borough's gray infrastructure had been left untouched for a century because there were no regulations or money to intervene. *See id.* at 54. Stonehill, who was speaking for the Pennsylvania State Association of Township Supervisors, said: "If we don't make these big improvements that the DEP has put on our permit we're going to get in big trouble. And we've seen other communities get in big trouble . . . ." *See id.* at 58. Derry Township, which also imposed a stormwater user fee, raises \$1 million annually to repair aging infrastructure; to fully assess and manage its stormwater runoff the township needs at least \$27 million. *See id.* at 14.

31. *See Summary of the Clean Water Act*, ENVTL. PROT. AGENCY [hereinafter *CWA Summary*], <https://www.epa.gov/laws-regulations/summary-clean-water-act> [<https://perma.cc/6G72-A8EY>] (last visited Sept. 11, 2019) (summarizing origin

(BMPs), increased urbanization and ensuing stormwater pollution soon drove the implementation of a new pollution control feature: stormwater permitting.<sup>32</sup> Stormwater permitting imposes maintenance measures and outright bans on stormwater to reduce the pollution load in streams and rivers.<sup>33</sup> Only once a polluter successfully applies for a permit under the NPDES can they discharge into waterways.<sup>34</sup> Further, the CWA conditions permit approvals on applicants using BMPs to reduce the amount of pollutants entering storm sewers in order to maintain or meet water quality standards.<sup>35</sup>

The NPDES targets municipal separate storm sewer systems (MS4s) because of the abundance of pollutants found in urban runoff.<sup>36</sup> Stormwater contains pesticides, fertilizers, pet waste, and illicitly dumped pollutants such as chlorinated water.<sup>37</sup> MS4 operators must develop, ap-

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of Clean Water Act). The Clean Water Act is truly an amendment to the 1948 Federal Water Pollution Control Act. *See id.*

32. *See* McKinstry, *supra* note 21, 10,826 (exploring history of Clean Water Act); *see also* OFFICE OF WATER, ENVTL. PROT. AGENCY, EPA 833-F-00-001, STORMWATER PHASE II FINAL RULE: AN OVERVIEW [hereinafter PHASE II], <https://www.epa.gov/sites/production/files/2015-11/documents/fact1-0.pdf> [<https://perma.cc/TJ4T-K8D2>] (last revised Dec. 2005) (explaining reason for second wave of NPDES permitting in 2000).

33. *See* 33 U.S.C. § 1311(a) (1995) (decreeing pollutant discharge illegal unless in accordance with issued permit).

34. *See* 33 U.S.C. § 1342(p)(3)(B)(i)-(iii) (2018) (requiring discharging permittees to comply with EPA programs). NPDES general permits are distinguished from industrial discharge permits because they are issued for “clearly described category of point source discharges, when those discharges are substantially similar in nature and do not have the potential to cause significant adverse environmental impact.” 25 PA. CODE § 92a.2 (2010).

35. *See* 33 U.S.C. § 1314(e) (2000) (authorizing EPA administrator to establish BMPs); *see also* 40 C.F.R. §122.4(d) (2019) (prohibiting issuance of a permit unable to guarantee compliance with water quality standards of downstream states); McKinstry, *supra* note 21, at 10,826 (describing purpose of NPDES program); Kate Miller & Joshua Duke, *Additionality and Water Quality Trading: Institutional Analysis of Nutrient Trading in the Chesapeake Bay Watershed*, 25 GEO. INT’L ENVTL. L. REV. 521, 533 (2013) (describing effectiveness of forested riparian barriers as BMPs). The EPA also establishes nationwide ambient water quality standards; streams not meeting those standards are considered “impaired” and are written onto the CWA’s 303(d) list. *See* § 1314. NPDES permittees must commit to, and provide regular updates on, reducing runoff pollution above. *See id.*

36. *See* PHASE II, *supra* note 32 (providing background on NPDES program). The initial push to require stormwater permitting from point sources captured “large” MS4s that served more than 100,000 people as well as construction sites larger than five acres. *See id.* at 2. Phase II, revealed in 1999, encompassed all MS4s located in urbanized areas regardless of population and construction sites between one and five acres. *See id.* For further discussion of MS4s, see *infra* note 51 and accompanying text.

37. *See Polluted Runoff*, *supra* note 19 (explaining content and effect of polluted runoff). Untreated runoff travels fast enough to erode stream banks, pulling sediment into the water in a volume that alters water composition enough to impair visibility. *See id.*



ply, and enforce BMPs to reduce the amount of pollutants in the water “to the maximum extent practicable.”<sup>38</sup>

The EPA authorizes qualifying states to administer the NPDES program on its behalf, requiring permittees to include national and local water standards while saying little about how states should treat non-point source pollution.<sup>39</sup> The EPA approved forty-seven states based on their program description.<sup>40</sup> Pennsylvania is one of those states.<sup>41</sup>

## 2. *Stormwater Regulations in Pennsylvania*

The DEP regulates stormwater through the Stormwater Management Act and the Clean Streams Law.<sup>42</sup> The Stormwater Management Act is intended to preserve and restore streams through local stormwater management.<sup>43</sup> The act created an environmental framework in which counties are charged with coordinating watershed management plans with municipalities and the DEP.<sup>44</sup> It also forced developers to build new

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38. See PHASE II, *supra* note 32, at 3 (explaining BMPs). The Phase II program relies heavily on MS4 operators doing public outreach and encouraging the public to make personal changes to stormwater practices, but also listed “illicit discharge detection” as a BMP. See *id.*

39. See McKinstry, *supra* note 21, at 10,824 (discussing the EPA, Pennsylvania Department of Environmental Protection, and City of Philadelphia’s consent agreement to allow the city to use green infrastructure to limit uncontrolled stormwater run-off); Clean Water Act, 33 U.S.C. § 1342(b) (2018) (authorizing states to implement NPDES program); 35 PA. CONS. STAT. § 691.307 (discussing Pennsylvania law on industrial waste).

40. See Clean Water Act, 33 U.S.C. § 1342(b) (2018) (authorizing states to implement NPDES program); see also 40 C.F.R. §123.22 (2019) (providing overview of concentrated animal feeding operations under NPDES program); EPA, *NPDES State Program Information*, <https://www.epa.gov/npdes/npdes-state-program-information> [<https://perma.cc/9GRW-Z4QD>] (last visited Sept. 9, 2019) (providing overview of states with delegated NPDES authority).

41. See 33 U.S.C. § 1251 (1987) (recognizing state sovereignty over territorial waters); see also The Clean Streams Law, 35 PA. CONS. STAT. §§ 691.1–692.1001 (1970) (banning water prohibiting discharge into the waters of the Commonwealth, directly or indirectly, without a permit authorized by the Department of Environmental Protection).

42. See The Stormwater Management Act, 32 PA. CONS. STAT. §§ 680.1–680.17 (1978) (detailing the statutory provision that controls stormwater management); see also The Clean Streams Law, 35 PA. CONS. STAT. §§ 691.1–691.1001 (1970) (providing the statutory provision that disallows the discharge of stormwater without a permit).

43. See 32 PA. CONS. STAT. §680.3 (1978) (setting purpose of Stormwater Management Act). Stormwater management was increasingly necessary as development upended natural environment, increasing the flow and velocity of runoff. See *id.* § 680.2 (describing runoff problem). Trying for a gentle approach, the Stormwater Management Act only set “reasonable regulation” of runoff-causing developments. See *id.*

44. See *id.* § 680.5 (detailing tasks “reasonably necessary” to manage stormwater in accord with other municipal, county, state, and regional environmental plans). Watershed management plans are built from assessments of current runoff, drainage problems, available control technology, and environmental impacts. See *id.* § 680.5(b). The act also required counties to submit reports, con-

properties in a way that did not increase the “quantity, velocity, or direction” of runoff.<sup>45</sup>

Pennsylvania also extended the CWA into state law through the Clean Streams Law with the goal of eliminating pollution in every stream.<sup>46</sup> By all accounts this is a tough goal to meet: Pennsylvania houses some 85,000 miles of streams statewide, more than 11,000 miles of which are impaired in the Chesapeake Bay watershed alone.<sup>47</sup> Still, the Clean Streams Law declared any effluent discharge able to pollute streams to be a public nuisance and authorized the DEP to create a “comprehensive program of watershed management and control.”<sup>48</sup>

The Clean Streams Law also implemented the NPDES under Pennsylvania’s control with the EPA’s blessing.<sup>49</sup> Pennsylvania MS4s located in “urbanized areas” or otherwise designated by the DEP must hold the NPDES permits.<sup>50</sup> If the MS4 discharges into impaired waters, it must implement pollution reduction plans “to the maximum extent possible”; but

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duct stormwater surveys and educational program, but it did not create water quality standards. *See id.* § 680.14. Moreover, because of how expensive management plans could be to study and implement, the DEP made grants available to cover 75% of the cost—on top of what any federal program could provide. *See id.* § 680.17 (explaining Stormwater Management Act funding).

45. *See id.* § 680.13 (applying stormwater regulations to developers). Following implementation, municipalities across the state had six months to change their ordinances and implement the Stormwater Management Act into their review of land use plans. *See id.*

46. *See* 35 PA. STAT. §§ 691.4, 691.401 (declaring water conservation policy); *see also* 25 PA. CODE § 91.5 (describing state NPDES permitting process).

47. *See* 2018 INTEGRATED REPORT, *supra* note 13 (reviewing Pennsylvania water management background information).

48. 35 PA. CONS. STAT. § 691.4 (1970) (defining policy underlying statute). Pollution is the contamination of streams that makes water harmful or detrimental to public health of legitimate uses, including contamination that changes water’s smell, color, temperature, or visibility. *See id.* § 691.1.

49. *See* McKinsty, *supra* note 21, at 10,826 (recounting history of NPDES).

50. *See* Notice of Qualifying Urban Areas for the 2010 Census, 77 FED. REG. 18,651 (Mar. 27, 2012) (describing how Census Bureau determines urbanized areas based on population density); *see also* 2010 Census Urban and Rural Classification and Urban Area Criteria, U.S. CENSUS BUREAU, <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html> [<https://perma.cc/KGU9-ZT5G>] (last visited Oct. 4, 2019) (defining “urbanized area” as population of 50,000 or more people); *Urbanized Area Maps for NPDES MS4 Phase II Stormwater Permits*, ENVTL. PROT. AGENCY, <https://www.epa.gov/npdes/urbanized-area-maps-mpdes-ms4-phase-ii-stormwater-permits> [<https://perma.cc/MWW5-KEY7>] (last visited Oct. 4, 2019) (explaining that “A ‘small MS4’ is any MS4 not already regulated under Phase I of the NPDES stormwater program” in 1999). *See generally* *Municipal Stormwater*, PA. DEP’T OF ENVTL. PROT. [hereinafter *Municipal Stormwater*], <https://www.dep.pa.gov:443/Business/Water/CleanWater/StormwaterMgmt/Stormwater/Pages/default.aspx> [<https://perma.cc/WYL2-JFQY>] (last visited Sept. 1, 2019) (summarizing state of municipal stormwater regulations). Pennsylvania identifies 2 “large” MS4s and 1,059 “small” MS4s. *See Municipal Stormwater, supra.*

if the MS4 lies within the Chesapeake Bay watershed it must submit a more rigorous TMDL plan.<sup>51</sup>

B. *High on the Hog: Agriculture's Rich History of Federal Funding*

Although the idea of American farmland conjures to mind idyllic pastures, the true picture of modern agriculture is often sobering.<sup>52</sup> While most farms are indeed run by families, only 43% of those farms earn more than \$10,000 in gross income.<sup>53</sup> The agricultural industry relies heavily on federal support in the form of loans, insurance programs, research projects, and regulatory exemptions.<sup>54</sup> Most agricultural wealth is concentrated in 77% of agricultural producers, who own most of the cropland, receive half of the federal government's support, and receive 90% of the industry's income.<sup>55</sup> In total, the federal government gives approximately \$3 billion annually to farmers, little of which is dedicated to conservation measures.<sup>56</sup>

1. *"Big Ag" as Point Source Polluters Under the NPDES*

The Clean Water Act encompasses the NPDES program, which focuses on regulating animal-producing operations.<sup>57</sup> The program focuses on operations that confine animals to feed lots for significant periods of time.<sup>58</sup> Crowded living conditions in those animal feed operations are fresh fodder for EPA regulation because they compact the soil and con-

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51. See *Municipal Stormwater*, *supra* note 50 (explaining pollution reduction requirements in Pennsylvania); see also Unkovic, *supra* note 19 (commenting on how DEP regulations function).

52. See Peter Lehner & Nathan Rosenberg, *Legal Pathways to Carbon-Neutral Agriculture*, 47 ENVTL. L. REP. 10,845, 10,855 (2017) (describing livestock waste management).

53. See Lehner, *supra* note 52, at 10,867 (noting statistics of agricultural industry).

54. See *id.* at 10,858 (describing relationship of agricultural industry to federal government).

55. See *id.* at 10,870 (examining regulatory approaches in light of farm size). The USDA's mission includes preserving natural resources for farming, necessarily entailing the use of some conservation practices to prevent the industry from shooting itself in the foot. See *id.* at 10,859.

56. See *id.* at 10,858 (discussing federal aid programs).

57. See 40 C.F.R. § 122.3(a)–(g) (2019) (detailing which discharges are not subject to NPDES permits); see also 25 PA. CODE § 92a.5 (2019) (detailing further prohibitions for the state NPDES program); Klopman, *supra* note 8, at 110. Federal and state NPDES programs exempt agricultural runoff from orchards, row crops, and pastureland from permitting requirements because the water does not enter streams from an identifiable culvert or pipe that could be measured. See 40 C.F.R. § 122.3(a)–(g) (2019); see also 25 PA. CODE § 92a.5.

58. See *Animal Feeding Operations*, ENVTL. PROT. AGENCY (Aug. 24, 2015), <https://www.epa.gov/npdes/animal-feeding-operations-afos> [<https://perma.cc/S6GH-ZK39>] (providing criteria for NPDES permitting).

concentrate manure so it cannot naturally be reintegrated with the soil.<sup>59</sup> As manure builds up, heavy rains and manure management failure release waste into surface waters, leading to nutrient pollution downstream.<sup>60</sup>

Once an animal feed operation's size passes the federal threshold and it discharges runoff through man-made culverts, its risk to surface waters triggers government intervention.<sup>61</sup> The federal government categorizes the operation as a concentrated animal feeding operation (CAFO).<sup>62</sup> NPDES permits regulate America's 20,000 CAFOs, which produce most of the country's food-producing animals and pollution.<sup>63</sup> CAFOs must implement conservation plans, including nutrient management plans, to obtain an NPDES permit.<sup>64</sup>

## 2. *Manure Management in Pennsylvania*

Agricultural operations generate significant nitrogen-rich manure spread over cropland in unnecessarily large amounts.<sup>65</sup> Half of the nitrogen in fertilizer stays in the soil where it can be carried away by water

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59. See ENVTL. PROT. AGENCY, EPA 820-R-13-002, LITERATURE REVIEW OF LIVESTOCK AND POULTRY MEASURES 1 (2013) [hereinafter EPA, LITERATURE REVIEW] (critiquing concentrated livestock farming). According to one USDA Economic Research Services study, 60% of nitrogen and 70% of phosphorus from manure cannot be incorporated into the soil where it was excreted. See *id.* at v.

60. See *id.* at 1 ("Runoff related to manure is considered a primary contributor to widespread nutrient water quality pollution in the U.S. . . ."). Excess nutrients in water lead to eutrophication, which is evidenced by blue-green blooms of algae that create low oxygen zones called "dead zones" and are toxic to both animals and humans. See *id.* at 48.

61. See 40 C.F.R. § 122.23(b)(6) (2019) (listing animal threshold to be considered a CAFO). In some cases, animal feed operations that do not meet the EPA's size requirement are regulated as "small CAFOs" because the operation itself or its location near surface waters makes it "a significant contributor of pollutants." See *id.* § 122.23(c).

62. See *id.* To be considered a CAFO, any animal operation must reach a certain size and either discharge runoff through a manmade structure or allow runoff to pass through the area where animals are located. See *id.*

63. See 40 C.F.R. § 122.23 (2019) (setting framework for CAFO permitting); see also Lehner, *supra* note 52, at 10,855 (describing pollution from factory farms); Klopman, *supra* note 8, at 98–99 (commenting on EPA finding farms to be Bay's largest pollution source).

64. See EPA, LITERATURE REVIEW, *supra* note 59, at 71 (explaining nutrient management measures). Nutrient plans describe to government inspectors what tools the operation is using (i.e., surface storage tanks for liquid manure or diverting rainfall around pens) to prevent polluted runoff. See *id.* at 72; see also 40 C.F.R. § 122.42(c)(1) (2019) (regulating municipal annual reports).

65. See 40 C.F.R. § 122.23(4), (6) (2019) (defining CAFOs); see also Lehner, *supra* note 52, at 10,849 (critiquing over-application of nitrogen fertilizer). Perhaps in a mistaken belief that more fertilizer will result in a higher yield, farmers over apply fertilizer, sometimes up to 40% more than what was captured by plants during the previous growing season. Lehner, *supra* note 52, at 10,849. In 2011, farmers applied 12,840,000 tons of nitrogen fertilizer to cropland. See *id.* at 10,869 n.303.

runoff as nitrate.<sup>66</sup> Application techniques and timing contribute to nutrient pollution.<sup>67</sup>

Pennsylvania farms rank exceptionally high in both concentration of manure per acre and the use of manure as an organic fertilizer.<sup>68</sup> While synthetic fertilizers account for more nutrient application nationwide, in Pennsylvania's Susquehanna River, most of the nutrient pollution comes from animal manure.<sup>69</sup> Moreover, the land draining to the Susquehanna is dotted with thousands of farms too small to be regulated by Pennsylvania's NPDES program.<sup>70</sup>

### C. *Catastrophe in the Chesapeake Bay Watershed*

Chesapeake Bay cleanup efforts have a long but unsuccessful career.<sup>71</sup> One of the oldest efforts is the Chesapeake Bay Program, which began in 1983 and subsequently led to a 1987 agreement among several states in the watershed to cut nitrogen and phosphorous levels 40% by 2000.<sup>72</sup> Despite federal interest and grants, the 2000 deadline passed with nitrogen and phosphorus levels reduced by only 13% and 25%, respectively.<sup>73</sup> Undeterred, member states changed tactics in 2000 and focused instead on working with local communities to develop watershed remediation plans to remove the Bay from the CWA's impaired waters list within the decade.<sup>74</sup>

In 2009, the Bay and many of its watershed streams were impaired thanks to an annual 282 million pounds of nitrogen.<sup>75</sup> Three states—Ma-

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66. See Lehner, *supra* note 52, at 10,845, 10,84–49 (describing chemical composition of pollutants). Manure not integrated into the soil also releases into the air as nitrous oxide, a source of air pollution. See *id.*

67. See *id.* at 10,849 (stating that the “[B]est practices for fertilization include reducing the rate of application [and] . . . improving the timing.”).

68. See EPA, LITERATURE REVIEW, *supra* note 59, at 5 (comparing Pennsylvania farms to manure production in other states). Pennsylvania farms produced 2.99 tons of manure per acre of farmland in 2007. See *id.*

69. See *id.* at 47 (“Nationwide, 45% of nitrogen and 79% of phosphorus inputs to cropland may be attributed to synthetic fertilizers.”). Organic fertilizers account for more nutrient pollution in certain watersheds. See *id.* at 47–48.

70. See 25 PA. CODE § 92a.29 (setting limits to NPDES permitting).

71. See Klopman, *supra* note 8, at 98 (chronicling Chesapeake Bay cleanup efforts). Despite its being a vital natural resource, efforts to clean the Chesapeake Bay reaching back to the 1960s have not cleaned up the water. See *id.*

72. See Houck, *supra* note 5, at 10,214 (detailing historic attempts to clean the Chesapeake Bay). In 1987, Congress created the Chesapeake Bay Program from those member states; it simultaneously authorized the EPA to advise members and to extend grants toward Bay restoration. See *id.*

73. See *id.* (recounting Pennsylvania's failure to meet 2010 pollution reduction goals).

74. See *id.* (explaining 2000 Chesapeake Bay Agreement).

75. See *Chesapeake Bay Watershed Pollution Limits*, CHESAPEAKE BAY FOUND., <https://www.cbf.org/how-we-save-the-bay/chesapeake-clean-water-blueprint/pollution-limits/index.html> [<https://perma.cc/59DG-8V3M>] (last visited Sept. 30, 2019) (comparing pollution reduction milestones). In 2009, the Bay also saw

ryland, Pennsylvania, and Virginia—accounted for nearly 90% of the nitrogen and phosphorus flowing into the Bay.<sup>76</sup> The problem was boundless; only 20% of the total pollution load was tied to existing point sources.<sup>77</sup> The 2000 plan failed, and after years of ineffectual cleanup efforts the EPA realized it needed to do more.<sup>78</sup>

### 1. *The TMDL: Reaping What Was Sowed*

Spurred on by thirty years of failed restoration efforts, a lawsuit, and an executive order from President Obama, the EPA established a phased TMDL across the entire Chesapeake Bay in 2010.<sup>79</sup> The TMDL effectively put the Chesapeake Bay on a “pollution diet,” restricting the total amount of pollution it could accept.<sup>80</sup> The EPA announced that any state not meeting the pollution limitations would invite stronger oversight and expanded regulations.<sup>81</sup> As part of the diet’s first phase, the EPA ordered

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19.23 million pounds of phosphorous and 8.68 billion pounds of sediment annually. *See id.*

76. *See* Houck, *supra* note 5, at 10,222 (describing Bay pollution status as of 2010).

77. *See id.* at 10,223–24 (explaining state of water pollution regulation). In 2009, the EPA’s “weak financial leverage” over non-point sources, which created the bulk of the Bay’s pollution load and are frequently exempted from regulations, led the agency to create an accountability framework for the Bay out of existing control mechanisms and threaten to actually use them against a broader scope of pollutant sources than it had previously. *Id.* at 10,212, 10,217–18.

78. *See id.* at 10,215 (describing end result of 2000 Chesapeake Bay Agreement). Chesapeake Bay Program members recognized a need for stronger regulations on agriculture by 2010. *See id.* Overall, water quality nationwide worsened during 1998–2008; the number of impaired U.S. streams rose from 291,000 to 463,000. *See id.* at 10,211; *see also* Klopman, *supra* note 8, at 98 (introducing the 2010 TMDL).

79. *See* Exec. Order No. 13508, 74 Fed. Reg. § 23,099 (May. 15, 2009), <https://www.federalregister.gov/documents/2010/05/11/2010-11143/executive-order-13508-chesapeake-bay-protection-and-restoration-section-203-final-coordinated> [<https://perma.cc/T9QV-SUYR>] (ordering protection and restoration of the Chesapeake Bay); *see also* CHESAPEAKE BAY PROGRAM, 2014 CHESAPEAKE BAY AGREEMENT 1 (2017) [hereinafter 2014 AGREEMENT], [https://www.chesapeakebay.net/documents/FINAL\\_Ches\\_Bay\\_Watershed\\_Agreement.withsignatures-Hires.pdf](https://www.chesapeakebay.net/documents/FINAL_Ches_Bay_Watershed_Agreement.withsignatures-Hires.pdf) [<https://perma.cc/2YKH-A4ZH>] (describing TMDL program). TMDL programs monitor and target non-point source pollution, which cannot be captured through the NPDES permitting program, by enforcing ambient water quality standards. *See* Houck, *supra* note 5, at 10,209 (describing function of TMDL). A TMDL identifies a polluted waterway, sets a threshold pollution standard in which the waterway can still maintain aquatic life, and works backward to enforce the limit without discriminating between pollution sources. *See id.* TMDLs are not rare, but the Chesapeake Bay TMDL, imposed in 2010, is the most ambitious and complex to date. *See* Am. Farm Bureau Fed’n v. U.S. EPA, 984 F. Supp. 2d 289, 303 (M.D. Pa. 2013) (counting 730 meetings over five years to develop TMDL).

80. *See* Houck, *supra* note 5, at 10,209–10 (setting stage for TMDL’s impact).

81. *See* Klopman, *supra* note 8, at 105–06 (describing stronger measures).

states within the watershed to draft “enforceable and binding” blueprints for how they planned to reach their water quality goals.<sup>82</sup>

State governments responded by September 2010 with Phase I Watershed Implementation Plans (WIPs) that were inadequate, lacking sufficient detail on how to implement, monitor, and fund reductions.<sup>83</sup> In particular, Pennsylvania’s plan increased pressure on point source polluters instead of creating new requirements for non-point sources.<sup>84</sup> When the plan finally did turn to non-point sources, it was with hopes they would voluntarily reduce pollution.<sup>85</sup>

The EPA offered guidance on what it was looking for, but even so Pennsylvania’s final Phase I WIP was little better.<sup>86</sup> Pennsylvania’s WIP now called for increased local government involvement in water regulations but provided few details on what that meant in practice.<sup>87</sup> Dissatisfied, the EPA put its own requirements in place that were stricter than anything Pennsylvania’s Phase I WIP proposed.<sup>88</sup>

## 2. *Phase II: Reduce, Reassure, Revise*

If the EPA had high hopes for Pennsylvania in Phase II, those hopes were again disappointed.<sup>89</sup> Beginning in 2012 with the release of Phase II

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82. See Houck, *supra* note 5, at 10,217 (detailing the standard for WIPs). State WIPs had to give “reasonable assurances” that necessary reductions were happening through descriptions, measures, and by listing who the state’s responsible parties were. See *id.*; see also Klopman, *supra* note 8, at 97–98 (introducing TMDLs).

83. See Houck, *supra* note 5, at 10,221 (introducing Phase I WIPs); Klopman, *supra* note 8, at 106 (asserting states over relied on voluntary pollution reduction by non-point sources).

84. See ENVTL. PROT. AGENCY, CHESAPEAKE BAY TMDL, 8–9 to –10 (2010) [hereinafter EPA TMDL Section 8], [https://www.epa.gov/sites/production/files/2014-12/documents/cbay\\_final\\_tmdl\\_section\\_8\\_final\\_0.pdf](https://www.epa.gov/sites/production/files/2014-12/documents/cbay_final_tmdl_section_8_final_0.pdf) [<https://perma.cc/WUW9-NNU3>] (discussing backstop adjustments). The EPA considered Pennsylvania’s focus on urban stormwater lacking and wrote backstop adjustments into the TMDL based on the state’s final Phase I WIP. See *id.*; see also Houck, *supra* note 5, at 10,222 (discussing regulatory impact on MS4s versus non-point source polluters).

85. See Houck, *supra* note 5, at 10,222 (commenting on voluntary measures guiding non-point source agricultural regulations).

86. See Klopman, *supra* note 8, at 106 (“[S]tates were unwilling to confront one of the prime sources of pollution: agriculture.”).

87. See *id.* at 106–07 (discussing Phase I WIPs).

88. See EPA TMDL Section 8, *supra* note 84, at 8–9 (opening more urban stormwater to regulation as point-source pollution). Fifty percent of the urban stormwater load was readjusted to be point source pollution, subjecting more urbanized areas to increased and expansive NPDES permitting requirements. See *id.* at 8–26.

89. See PA. DEP’T OF ENVTL. PROT., EPA EVALUATION OF PENNSYLVANIA’S 2016–2017 AND 2018–2019 MILESTONES 1 (2018) [hereinafter EPA EVALUATION], [http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/TrackProgress/EPA\\_Final\\_Evaluation\\_of\\_Pennsylvania\\_2016-2017\\_and\\_2018-2019\\_Milestones.pdf](http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/TrackProgress/EPA_Final_Evaluation_of_Pennsylvania_2016-2017_and_2018-2019_Milestones.pdf) [<https://perma.cc/9PTK-K9XL>] (describing the unachieved goals of Phase II).

plans, Pennsylvania—the key player in Bay restoration—struggled.<sup>90</sup> When Pennsylvania failed to meet its 2015 milestone goals for nitrogen and sediment reduction in both agricultural and stormwater sectors, the EPA stripped the state of \$2,896,723 in Chesapeake Bay funding.<sup>91</sup>

Until that point, the DEP had been spending \$127.6 million annually to deploy BMPs across the state.<sup>92</sup> Now it had reoriented toward providing technical assistance and identifying agricultural BMPs put into place without government assistance.<sup>93</sup> It also pushed for upcoming MS4 NPDES permits to condition DEP approval on municipalities reducing pollution outflows by a set percentage.<sup>94</sup>

Despite laying out an ambitious plan to meet the 2017 reduction target of 60% of the state's TMDL reductions, Pennsylvania's missed mark

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90. See PA. DEP'T OF ENVTL. PROT., DECEMBER 2014 STATUS REPORT ON PA 2014–2015 PROGRAMMATIC MILESTONE [hereinafter DEP, DECEMBER STATUS], <http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/TrackProgress/PA2014-2015ProgrammaticMilestonesSTATUSREPORT1-13-15.pdf> [<https://perma.cc/46XW-VJQU>] (last visited Sept. 9, 2018) (recording DEP progress through 2014). The 2014 Status Report showed the DEP understaffed and falling behind in its nutrient oversight, educational outreach, and surveying of farms. See *id.* at 2–4; see also Heidi Reed, *Pa. Farmers Working to Improve Health of Chesapeake Bay*, HERALD MAIL MEDIA (Mar. 16, 2019), [https://www.heraldmillmedia.com/news/farm\\_news/pa-farmers-working-to-improve-health-of-chesapeake-bay/article\\_d41578b9-15de-5868-9a0f-2ff6acc84ae8.html](https://www.heraldmillmedia.com/news/farm_news/pa-farmers-working-to-improve-health-of-chesapeake-bay/article_d41578b9-15de-5868-9a0f-2ff6acc84ae8.html) [<https://perma.cc/SL3G-6QFN>] (giving background context to impending Phase III requirements).

91. See PA. DEP'T OF ENVTL. PROT., A DEP STRATEGY TO ENHANCE PENNSYLVANIA'S CHESAPEAKE BAY RESTORATION EFFORT 1 (2016) [hereinafter PA. DEP. STRATEGY] <http://www.dep.state.pa.us/river/iwo/chesbay/docs/DEPChesapeakeBayRestorationStrategy012116.pdf> [<https://perma.cc/GLY2-JB4N>] (comparing success in wastewater plants to failures in stormwater sewers and farms). The EPA conditioned the future receipt of funds on increasing and targeting state funding toward high-need farms, proving the state's commitment to a “culture of compliance,” and commit to inspecting 10% of farms within the watershed. See *id.* at 19. The EPA also threatened to expand the NPDES permitting program to previously waived municipalities and take control of permits that did not conform to the TMDL. See *id.* at 20–21.

92. See *id.* at 6 (calculating government contribution to farm BMPs). The government contributed \$42,000–\$45,000 to each farm in its grant program to build and implement BMPs such as manure management systems. See *id.* In the same time, it offered municipalities \$25,000–\$50,000 grants—conditioned on availability of funding—to study the feasibility of self-creating a water authority or stormwater fee to fund their reduction requirements. See *id.* at 11.

93. See *id.* at 9–10 (noting reliable strategies to maximize resources).

94. See *id.* at 10 (“There is a need to re-evaluate the Chesapeake Bay Phase 2 WIP for achieving reductions from the urban sector and the reduction allocations for this sector.”). At a minimum, the pollution reduction plan accompanying each municipality's general MS4 permit application must cover a plan to reduce sediment, nitrogen, and phosphorus by 10%, 5%, and 3%, respectively, over the five year life of the permit. See PA. DEP'T OF ENVTL. PROT., AUTHORIZATION TO DISCHARGE 3800-PM-BCW0100D, at 29 (2016), <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=11134&DocName=04%20SAMPLE%20APPROVAL%20OF%20COVERAGE%20AND%20MS4%20GENERAL%20PERMIT.pdf> [<https://perma.cc/9Y79-QQSH>] (discussing the pollution reduction plan).



still stymied Bay restoration efforts.<sup>95</sup> In the years prior to 2017, when all Bay jurisdictions were due to reach 60% of the TMDL reduction goal, the Bay fell short.<sup>96</sup> Just 42% of the Chesapeake Bay and its tributaries met TMDL water quality standards.<sup>97</sup>

### III. SWIMMING IN THE SHADOW OF GIANTS: PENNSYLVANIA REACTS TO THE TMDL

Pennsylvania's 2016 Bay restoration strategy strained municipalities and promised increased agricultural oversight while the DEP drafted the Commonwealth's *Phase III WIP*.<sup>98</sup> The heightened NPDES requirements for MS4s created risks for local governments by hinging state compliance with a fast-approaching deadline on slow-moving and legally risky stormwater charges.<sup>99</sup> Pennsylvania's five state programs focused on agricultural environmental conservation and promised big results, but had little payoff.<sup>100</sup> Finally, Pennsylvania's much-anticipated Draft Phase III WIP, which was released in August 2019, promised "reasonable assurances" of compliance despite a history of underfunding and under-monitoring of agricultural initiatives.<sup>101</sup>

#### A. *Low-Hanging Fruit: Point Source Regulation of MS4s*

Pennsylvania understands water pollution first as a statewide problem of water quality.<sup>102</sup> The Chesapeake Bay TMDL, covering 350 regulated

95. See ENVTL. PROT. AGENCY, EVALUATION OF PENNSYLVANIA'S 2016–2017 AND 2018–2019 MILESTONES 1 (2018), [http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/TrackProgress/EPA\\_Final\\_Evaluation\\_of\\_Pennsylvania\\_2016-2017\\_and\\_2018-2019\\_Milestones.pdf](http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/TrackProgress/EPA_Final_Evaluation_of_Pennsylvania_2016-2017_and_2018-2019_Milestones.pdf) [<https://perma.cc/RU44-TRRC>] (critiquing Pennsylvania's TMDL performance). Several river basins within the Bay watershed met either phosphorous or nitrogen goals, but no river basin was able to meet the 2017 target for sediment reductions. See *id.*; see also DEP STRATEGY, *supra* note 91 (announcing Pennsylvania's new plan to tackle Bay pollution underperformance).

96. See CHESAPEAKE BAY PROGRAM, 2017–2018 BAY BAROMETER 1, 11 (2018), [https://www.chesapeakebay.net/documents/2017-2018\\_Bay\\_Barometer.pdf](https://www.chesapeakebay.net/documents/2017-2018_Bay_Barometer.pdf) [<https://perma.cc/LC45-2EQN>] (showing total percentage nitrogen reduction). The Bay fell short of its 60% nitrogen reduction goal and was 15 million pounds above the TMDL cutoff. See *id.*

97. See *id.* at 12 (detailing water quality standards). In 2017, 240 million pounds of nitrogen, 12.7 million pounds of phosphorus, and 4.3 million pounds of sediment entered the Chesapeake Bay. *Id.*

98. See PA. DEP, STRATEGY, *supra* note 91 (outlining Commonwealth's strategy to reach TMDL levels). One of the DEP's strategies was giving MS4s a bigger piece of phosphorus reductions to alleviate the burden from agriculture sources. See *id.* at 27.

99. For a further discussion of legal risks in raising stormwater, see *infra* notes 102–45 and accompanying text.

100. For a further discussion of Pennsylvania's slow response to agricultural runoff compliance, see Section III.C.

101. For a further discussion on mixed feedback to Pennsylvania's Phase III WIP, see Section III.C *infra*.

102. See *Pennsylvania's Chesapeake Bay Plan*, PA. DEP'T ENVTL. PROT., <https://www.dep.pa.gov:443/Business/Water/Pennsylvania%E2%80%99s%20Chesapeake>

municipalities and 11,000 miles of impaired streams across the center of the state, is merely an additional layer of regulation.<sup>103</sup> So when the percentage pollution reduction for MS4 communities developed in the DEP's 2016 Bay Restoration Strategy hit, the shockwaves went out statewide.<sup>104</sup>

Municipalities in the watershed felt the biggest impact: NPDES permit renewals now had to include a TMDL plan to reduce nitrogen, phosphorus, and sediment by 10%, 5%, and 3% respectively.<sup>105</sup> Outside the watershed, MS4s discharging into impaired streams also had to develop pollution reduction plans, albeit at different reduction amounts.<sup>106</sup> Two key aspects of plan development included mapping the municipality's en-

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%20Bay%20Program%20Office/Pages/default.aspx [https://perma.cc/QN78-7Z3D] (last visited Sept. 11, 2019) (explaining importance of focusing on local water quality). Local water quality improvements are required pursuant to Pennsylvania's Clean Streams Law and the Pennsylvania Constitution. *See id.*; *see also Majority of Conservation Districts in Bay Watershed Agree to Work with DEP to Reduce Runoff*, PA. DEP'T ENVTL. PROT.: DEP NEWSROOM (2016), <http://www.ahs.dep.pa.gov/NewsRoomPublic/articleviewer.aspx?id=21065&typeid=1> [https://perma.cc/23ZT-U8HZ] ("Reducing farm runoff is key to restoring water quality both locally in Pennsylvania and in the Bay . . .").

103. *See* DEP, DECEMBER STATUS, *supra* note 90 (quantifying level of pollution in Chesapeake Bay watershed). Since the website's last update, water pollution in watershed rivers has increased somewhat; Pennsylvania's Phase III WIP noted 15,369 miles of "impaired" streams. *See* PA. DEP'T OF ENVTL. PROT., CHESAPEAKE BAY OFFICE PENNSYLVANIA PHASE 3 CHESAPEAKE BAY WATERSHED IMPLEMENTATION PLAN (2019) [hereinafter FINAL PHASE III], [http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/WIPIII/FinalPlan/PA\\_Phase\\_3\\_WIP\\_Final.pdf](http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/WIPIII/FinalPlan/PA_Phase_3_WIP_Final.pdf) [https://perma.cc/CX35-3GPP] (laying out Pennsylvania's plan to meet 2025 TMDL goals within seven years).

104. *See PRP/TMDL Plans*, PA. DEP'T ENVTL. PROT., <https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater/Pages/PRPTMDLPlans.aspx> [https://perma.cc/R295-Y4GS] (last visited Sept. 11, 2019) (providing information for TMDL and pollution reduction plans); PA. DEP'T OF ENVTL. PROT., PA GENERAL NPDES PERMIT 3800-PM-BCW0100D (2016) (setting out purposes of TMDL and pollution reduction plans); *see also* Unkovic, *supra* note 19 (noting discharges into high quality water face different oversight than those into impaired waters). For a further discussion of Pennsylvania resident's reactions to stormwater fees and other measures to reduce pollution, *see infra* notes 181–82 and accompanying text.

105. *See* PA. DEP'T OF ENVTL. PROT., PA GENERAL NPDES PERMIT 3800-PM-BCW0100D (2016) (describing pollution reduction requirements for Chesapeake Bay watershed discharges). To discharge into the Chesapeake Bay, MS4s must submit approved plans and put them into place over a five-year timescale. *See id.* MS4s also have to submit annual progress reports to the DEP. *See id.* at 29.

106. *See id.* at 30 (noting pollution reduction requirements for impaired streams not in watershed). Pollution reduction plans for non-Bay discharge into impaired streams face a 10% sediment reduction and total pollution reductions of 5% over the course of the five-year permit. *See id.* The difference in requirements does not make life easier for MS4 communities, who still face increased compliance costs on tight budgets. *See generally* Kurt Bresswein, *New Stormwater Fee to Cost Easton Residents \$75–80 a Year*, LEHIGHVALLEYLIVE.COM (Aug. 23, 2018), [https://www.lehighvalleylive.com/easton/2018/08/new\\_stormwater\\_fee\\_to\\_cost\\_eas.html](https://www.lehighvalleylive.com/easton/2018/08/new_stormwater_fee_to_cost_eas.html) [https://perma.cc/34SZ-HND5] (discussing fee implemented to fund 30.5 ton reduction in runoff sediment).

tire stormwater system from inflow to river and identifying BMPs such as green infrastructure.<sup>107</sup>

Local municipalities implementing federally mandated stormwater improvements saw red, not green.<sup>108</sup> The high cost of complying with these mandates caused tension in local governments.<sup>109</sup> With money tied up in ballooning pension and healthcare costs, municipalities found it difficult to manage the additional cost without burning through slim budget surpluses or generating new revenue.<sup>110</sup> The solution to these problems was not innovative—it was fees.<sup>111</sup>

### 1. *Looking for Funding in All the Wrong Places*

Infrastructure is financed by grants, bonds, fees, and taxes, but Pennsylvania municipalities face legal and practical limitations on how they can raise money.<sup>112</sup> Grants are in short supply, and bonds require taking out debt that has to be paid back one way or another.<sup>113</sup>

Meeting TMDL water quality standards before 2025 may well require municipalities to seek initial financing on their infrastructure projects.<sup>114</sup> A common option for initial funding on big infrastructure projects is issu-

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107. See McKinstry, *supra* note 21, at 10,824 (comparing traditional and “green” sewer systems); Rosenbloom, *supra* note 19, at 322 (criticizing ability of gray infrastructure to respond to extreme weather events). Because gray infrastructure is a system of cisterns connected by fixed-size pipes, it cannot adapt to accommodate sudden rain events like environmental-based systems do. See Rosenbloom, *supra* note 19, at 321–22. Scholars, experts, and advocates focus on the benefits of replacing “gray infrastructure”—traditional stormwater sewer systems—with “green infrastructure” that replicates natural water infiltration. See *id.*

108. See *Stormwater Hearing*, *supra* note 2, at 60 (statement of Mayor Sherry Capello, Pennsylvania Municipal League).

109. See Law, *supra* note 20, at 40 (explaining impacts of federal mandates).

110. See Stephen Eide, *Defeating Fiscal Distress: A State Responsibility*, CIVIC REPORT, July 2013, at 1–2 [hereinafter Eide, *Fiscal Distress*] (describing expense challenges of local governments). In many cities, funds raised by taxes are insufficient to cover growing expenses. *City Fiscal Conditions 2018*, NAT’L LEAGUE CITIES (Sept. 10, 2018), [nlc.org/resource/city-fiscal-conditions-2018](https://nlc.org/resource/city-fiscal-conditions-2018) [https://perma.cc/48AF-9NPE] (surveying cities financial well-being).

111. See *City Fiscal Conditions 2018*, *supra* note 110 (critiquing municipalities for being hind-sighted).

112. See James Salzman et al., *The Most Important Current Research Questions in Urban Ecosystem Services*, 25 DUKE ENVTL. L. & POL’Y F. 1, 24 (2014) (providing overview of green infrastructure funding); McKinstry, *supra* note 21, at 10,835–36 (discussing financing structure and authorization of green infrastructure programs); see also 53 PA. CONS. STAT. § 5607 (powers of municipal authorities include issuing bonds and implementing fees).

113. See Jonathan Rosenbloom, *Funding Adaptation*, 47 J. MARSHALL L. REV. 657, 673 (2013) [hereinafter Rosenbloom, *Funding Adaptation*] (noting risk investor’s take investing in municipal bonds); Erin Adele Scharff, *Powerful Cities?: Limits on Municipal Taxing Authority and What to Do About Them*, 91 N.Y.U.L. REV. 292, 316 (2018) [hereinafter Scharff, *Powerful Cities*] (noting that states are providing fewer grants to municipalities).

114. See Erin Adele Scharff, *Green Fees: The Challenge of Pricing Externalities Under State Law*, 97 NEB. L. REV. 168, 174–75 (2018) [hereinafter Scharff, *Green*

ing bonds, which are loans issued by the government at a fixed interest rate for an agreed upon length of time.<sup>115</sup> Relying on bond debt increases the chance of a municipality falling into fiscal distress because municipalities are required to repay them regardless of whether the capital improvement generates the anticipated revenue, or, as in the case of green infrastructure, sufficiently reduces costs.<sup>116</sup> For small municipalities in Pennsylvania's heartland already burdened by higher-than-average poverty levels, an aging population living on fixed incomes, and population decline, bonds may be an untenable alternative to implementing fees.<sup>117</sup> That leaves fees and taxes.

Fees are charges that residents pay for services the municipality provides.<sup>118</sup> Fees recoup the cost a municipality spends providing the service, and the money is held in a separate account than general funds.<sup>119</sup> Fees offer municipalities near unlimited power—so long as the fee only reimburses expenses, a municipality has no limit to the money it can raise.<sup>120</sup> For example, trash collection is a service frequently provided by municipalities so that each resident does not have to independently contract with a waste hauler.<sup>121</sup> A monthly or quarterly bill from the resident's municipality for trash collection is considered a fee because each resident is specially benefited and can choose whether or not to receive the service.<sup>122</sup>

Taxes, applied across the board, are funds the municipality raises to provide public services regardless of whether those services are used by an individual.<sup>123</sup> For example, residents might pay a local services tax to support emergency services regardless of whether any given resident will ever need to call the fire department. Local governments do not have the

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*Fees*] (discussing the nature of fees); see also Salzman, *supra* note 112, at 25–26 (discussing the importance of upfront financing).

115. See 53 PA. CONS. STAT. §§ 5602, 5608 (defining and authorizing municipal authorities to issue bonds).

116. See Scharff, *Powerful Cities*, *supra* note 113, at 299–30 (describing the roles of municipal governments); Rosenbloom, *Funding Adaptation*, *supra* note 113, at 673 (describing financing concerns of municipal bonds). Bonds are risky business because municipalities become obligated to repay them regardless of whether a capital improvement generates the anticipated fee revenue. See *id.* at 673. Despite being the primary way large municipalities fund ecosystem services, the law limits the use of tax-exempt bonds for projects on private property. See Salzman, *supra* note 112, at 28. Sometimes the money is limited by project—bonds may be available for construction but not maintenance costs. See *id.* at 29.

117. For a further discussion of the strain of state-imposed stormwater regulations, see Part V *infra*.

118. See Scharff, *Powerful Cities*, *supra* note 113, at 304 (defining fees).

119. See *id.* (defining user fees).

120. See *id.* (highlighting greater freedom municipalities enjoy over fees than taxes).

121. See Law, *supra* note 20, at 35 (analogizing stormwater charges to garbage fees).

122. See *id.* (explaining premise behind garbage fees); Scharff, *Powerful Cities*, *supra* note 113, at 304–06 (explaining features of fees).

123. See Scharff, *Powerful Cities*, *supra* note 113, at 304 (defining taxes).

power to tax unless provided to them by the state, and Pennsylvania's Local Tax Enabling Act limits the scope and caps taxes that local governments can implement.<sup>124</sup>

Pennsylvania home rule law creates an exception to traditional funding limits, giving other municipalities more discretion to use all power except that forbidden by state constitution or the legislature.<sup>125</sup> Municipalities that incorporate under a home rule charter can structure their own governments, set employment policies, and raise revenue through taxes or borrowing without being specifically authorized to do so by state law.<sup>126</sup> Although a home rule charter cannot increase or decrease power already granted by the general assembly for the municipal class—it cannot fix subjects and rates of taxation—powers explicitly granted are interpreted in favor of the municipality.<sup>127</sup> Some municipalities with home rule charters implement stormwater fees.<sup>128</sup>

The Municipal Authorities Act allows municipalities to enter into multi-municipality authorities for limited projects and services such as managing stormwater infrastructure.<sup>129</sup> Municipal authorities are afforded wide discretion in how their services are operated and can collect fee-generated revenue on a town's behalf, but they cannot raise taxes.<sup>130</sup> Fees must be "reasonable and uniform" and geared specifically toward cov-

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124. See Local Tax Enabling Act, 53 PA. STAT. § 6924.301.1 (2014) (explicitly authorizing local tax authority for general revenue purposes, property transfers, business privilege, and local services). The Local Tax Enabling Act covers second and third class cities; towns; boroughs; and first and second class townships. *Id.* It allows these municipalities to create taxes on real property, business privilege, local services, and for "general revenue purposes." *Id.* It also limits the rates of specific taxes. § 6924.311; see also Scharff, *Powerful Cities*, *supra* note 113, at 301 (introducing history of local governments lacking independent authority).

125. See PA. CONST. art. IX, § 2 (adopting process of home rule charters); 53 PA. CONS. STAT. § 2902 (listing powers of home rule municipalities); see also Scharff, *Powerful Cities*, *supra* note 113, at 301–02 (explaining home rule charters). Home rule arose out of the rapid industrialization of cities that needed to respond faster and more flexibly to growing citizen concerns than the state could keep up with. See *id.*

126. See Scharff, *Powerful Cities*, *supra* note 113, at 302–03 (listing home rule municipality powers).

127. See 53 PA. CONS. STAT. §§ 2961, 2962(a) (1996) (describing the limited powers of a home rule charter).

128. See STORMWATER FEES: OVERVIEW OF MUNICIPAL STORMWATER FEE PROGRAMS, PENNSYLVANIA ENVIRONMENTAL COMMISSION 7 (2017), [https://pecpa.org/wp-content/uploads/Stormwater-Utility-Fee-Booklet\\_Revamp\\_March17.pdf](https://pecpa.org/wp-content/uploads/Stormwater-Utility-Fee-Booklet_Revamp_March17.pdf) [<https://perma.cc/EY6S-9P7L>] (summarizing legal status of Pennsylvania stormwater fees).

129. See 53 PA. CONS. STAT. §§ 5602, 5608 (2001).

130. See *id.* § 5607(d)(9) (authorizing multi-municipality authorities to "fix, alter, charge and collect rates"); PENNSYLVANIA DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT, MUNICIPAL AUTHORITIES IN PENNSYLVANIA 2 (2015), <https://dced.pa.gov/download/municipal-authorities-in-pennsylvania/?wpdmdl=57758&ind=0> [<https://perma.cc/FF55-8JH4>] (explaining benefits of creating municipal authorities); McKinstry, *supra* note 21, at 10,835–37 (describing Municipal Authorities Act).

ering the authority's operation, construction, repair, and maintenance costs.<sup>131</sup>

While the general trend is for municipalities to have authority over fees (after all, residents ostensibly opted into the MS4 services and can "opt out" by making on-site stormwater improvements), in Pennsylvania, only second class townships<sup>132</sup> and municipalities with home rule charters are permitted to directly implement user fees to cover their stormwater expenses.<sup>133</sup> Although local governments and residents prefer user fees for their direct and efficient nature, there are other difficulties to consider.<sup>134</sup> Fees are better suited to keeping up with maintenance costs and paying loan interest than as upfront payments of new infrastructure features.<sup>135</sup> In using only fees, cities are hard-pressed to generate enough money to actually cover infrastructure repairs within the time given by state and federal agencies.<sup>136</sup> Larger repairs are costly and demand fees larger than the public will tolerate.<sup>137</sup> Municipalities are also hesitant to create large fees because charges must be viewed as regulatory tools, not money-generating tax levies.<sup>138</sup> Meanwhile, pollution-reduction deadlines can pass while revenue trickles in from fees.<sup>139</sup>

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131. See 53 PA. CONS. STAT. § 5607(d) (2017) (listing powers of municipal authorities).

132. See Second Class Township Code, 53 PA. STAT. § 65,201 (1995) (defining second class townships as municipalities not governed by home rule charters and having fewer than fewer than 300 residents per square mile).

133. See 53 PA CONS. STAT. § 67705; H.B. 473–474, 2019 Gen. Assemb., Reg. Sess. (Pa. 2019); see also McKinstry, *supra* note 21, at 10,834 (discussing municipal authority to implement fees); Scharff, *Powerful Cities*, *supra* note 113, at 292 (explaining municipal power distribution). Chambersburg, Pennsylvania is one borough that was able to self-impose a stormwater fee. See *Stormwater Hearing*, *supra* note 2, at 39–40 (testifying about difficulties affording stormwater improvements). Chambersburg considered it more appropriate for the council to set and collect the fee directly because they were on "the frontline" handling business owners and homeowners. *Id.* at 40.

134. See Scharff, *Green Fees*, *supra* note 114, at 174–75 (discussing nature of fees). Residents prefer user fees because they have a limited scope, which holds the government more accountable for its spending. See *id.* Governments prefer fees because they are easier to raise and can be implemented in fewer steps. See *id.*

135. See Rosenbloom, *Funding Adaptation*, *supra* note 113, at 671–72 (criticizing fees as slow-accumulating source of funding).

136. See McKinstry, *supra* note 21, at 10,835 (municipalities must ensure water systems charge enough to cover costs).

137. See *id.* (commenting on difficulties in implementing fees and taxes to cover compliance costs).

138. See Law, *supra* note 20, at 47 (explaining user fee's nexus requirement). A fee can still be considered a tax if the relationship between the fee and its stated purpose is unclear. See *id.* at 32.

139. See Rosenbloom, *Funding Adaptation*, *supra* note 113, at 671–72 (explaining fees do not accumulate revenue quickly enough to fund large capital purchases).

## 2. *A Fee by Any Other Name*

MS4 communities across Pennsylvania began funding stronger federal regulations by implementing stormwater charges.<sup>140</sup> But this puts local governments in a bind because the difference between a fee and a tax is fact-specific enough to make it ripe grounds for litigation.<sup>141</sup> Calling a stormwater charge a fee rather than a tax does not make it so.<sup>142</sup> The distinction is grounded in the charge's purpose.<sup>143</sup>

In a licensing context, Pennsylvania's definition of a fee's purpose is based on the Pennsylvania Supreme Court's four-factor test in its 1953 decision, *National Biscuit Company v. Philadelphia*.<sup>144</sup> A license fee is characterized by its being tailored to the type of business being regulated, oversight and regulation by an authority, the business' continued operation being conditioned on paying the fee, and the charge's purpose of reimbursing the agency for regulatory oversight expenses.<sup>145</sup> Later, when the Commonwealth Court of Pennsylvania established Pennsylvania's modern tax-fee framework in *White v. Commonwealth, Medical Professional Liability Catastrophe Loss Fund*,<sup>146</sup> it acknowledged the contested charge did

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140. See Salzman, *supra* note 112, at 31 (describing uses of fees). Large scale projects are paid up front by bonds and use fees to pay for debt service, but smaller MS4s use the fees to directly fund improvement projects. See *id.*

141. See *Borough of West Chester v. Pa. State Sys. of Higher Educ.*, No. 260 M.D. 2018, 2019 WL 30696422 (Pa. Commw. Ct. July 15, 2019) (demurrer premature when law uncertain as to whether stormwater charge is tax or fee); Scharff, *Green Fees*, *supra* note 114, at 171 (noting gray area between fees and taxes). The difference between recouping direct costs of stormwater regulations and a more general tax is determined by whether one considers rain gardens, repaving, and riverbank reinforcement truly relating to improving water quality standards. See *id.* Courts have allowed some user fees by twisting definitions and carving out exceptions, rendering the legal status of user fees an unpredictable, fact specific inquiry. See *id.* at 178.

142. See *White v. Commonwealth, Med. Profl. Liab. Catastrophe Loss Fund*, 571 A.2d 9, 11 (Pa. Commw. Ct. 1990) (noting charges are categorized based on their purpose, not their name). In fact, the most basic factor test to determine whether a charge is a fee or tax looks at a single characteristic such as purpose or how funds will be spent. See Scharff, *Green Fees*, *supra* note 114, at 186 (discussing characterization of charges). Mileage may vary by state; South Dakota, for example, defines "fee" based on revenue. *Id.*

143. See *generally Nat'l Cable Television Ass'n v. United States*, 415 U.S. 336 (1974) (holding federal statute authorized imposition of a fee, not a tax). In deciding whether an annual charge to communication antenna television systems was properly a fee or an unconstitutional tax, the Supreme Court focused on the basis on which the taxes and fees were issued. See *id.* at 337. Whereas fees are voluntarily exchanged for a unique benefit to the payer, taxes are implemented—even for regulatory purposes—based on "public policy or interest served" rather than an individual benefit. See *id.* at 340–41. "The lawmaker may, in light of the 'public policy or interest served' make the assessment heavy if the lawmaker wants to discourage the activity . . ." *Id.* at 341.

144. See *generally Nat'l Biscuit Co. v. Philadelphia*, 98 A.2d 182 (Pa. 1953) (distinguishing four features of a fee).

145. See *id.* at 188 (providing four-part test for licensing fees).

146. 571 A.2d 9 (Pa. Commw. Ct. 1990).

not fit within the state's analytical framework but nevertheless determined it to be a fee based on the support of only two factors.<sup>147</sup>

Stormwater charges present a fresh challenge for Pennsylvania courts because they live between the opposed worlds of regulatory fees and general taxation.<sup>148</sup> Fees pay for services benefitting the payer in a way not experienced by the general public, and arguably this definition extends to property owners required to pay stormwater charges.<sup>149</sup> Looked at in the context of stormwater, a naturally occurring process created by and affecting all properties differently, the degree to which properties benefit from a system of stormwater control is unique to each property.<sup>150</sup> If stormwater systems are viewed as a municipally provided alternative to property owners having to deal with their property's stormwater discharges on an individual basis, it becomes more palatable to consider stormwater charges as fees for a service rendered rather than a general public benefit.<sup>151</sup>

But stormwater charges also bear characteristics of taxes.<sup>152</sup> According to *White*, taxes are charges imposed by a legislature that raise money for public purposes and offset government expenses.<sup>153</sup> Because taxes are

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147. *See id.* at 11 (holding plaintiff's charge was "more logically" a fee than tax); *see also Nat'l Biscuit Co.*, 98 A.2d at 182 (defining license fee). In *White*, the statute required doctors with most of their practice within Pennsylvania to pay into a fund meant to reimburse victims of malpractice. *White*, 571 A.2d at 11–12. Plaintiff *White*, a doctor with a majority of his clients in the state, challenged the charge as an unlawful tax implemented by a non-elected body. *Id.* at 10. The Pennsylvania Supreme Court applied *National Biscuit's* definition of "fee" and concluded the charge was properly a fee despite meeting only two of four prongs in the test. *Id.* at 11.

148. *See Law*, *supra* note 20, at 36 (describing stormwater fees). Stormwater fees have the features of both a tax and a fee. *See id.*

149. *See id.* at 31 (distinguishing fees from taxes). Jurisdictions often begin by basing the fee-tax distinction on a single characteristic such as purpose or amount spent before evolving the meaning through litigation. *See Scharff*, *Green Fees*, *supra* note 114, at 186 (discussing characterization of charges).

150. *See Law*, *supra* note 20, at 37 (asserting that misunderstanding stormwater leads courts to consider charges to be taxes).

151. *See id.* at 38 ("It also makes sense, in light of stormwater science, to impose the fee on all property owners unless they can prove that they really contain all of their stormwater on-site.").

152. *See Scharff*, *Green Fees*, *supra* note 114, at 185 ("It is frequently difficult to discern whether a given enactment provides for a regulatory fee or authorizes simply a tax." (citing *McLeod v. Colombia County*, 599 S.E.2d 152, 154 (Ga. 2004))). Levies organized into general fund are more likely taxes. *See id.* Similarly, if the levy raises surplus money, is intended to raise money, is involuntary, or collects a large sum of money compared to the benefit received from paying, it is more likely a tax. *See id.* "[A]ll properties within a city contribute to and receive a general and specific benefit from a stormwater management system." *Law*, *supra* note 20, at 37.

153. *See White*, 571 A.2d at 11 ("This Court however finds that the surcharge is not a tax as its purpose is not to raise revenues for public purposes or to defray the necessary expenses of government."). Further, the court noted that taxes were money-raising measures producing high income for the government compared to the cost of collecting. *See id.* at 12



meant to raise money and benefit the whole community, when a fee ceases to merely recoup costs and generates large revenue for the legislature's general public or future capital improvements it can become a tax.<sup>154</sup> Stormwater charges, sometimes called "rain taxes," benefit the entire community by offsetting expenses for government infrastructure used by all property owners in the municipality.<sup>155</sup>

Part of the difficulty in categorizing stormwater charges is that they are neither taxes nor fees.<sup>156</sup> Because of the duality of stormwater charges, commentators sometimes categorize them into a third category, Pigovian taxes, that is unacknowledged by the existing framework of municipal laws.<sup>157</sup> Pigovian taxes are charges imposed to combat pollution or congestion at a rate proportionate to the harm being caused, making them difficult to categorize as general revenue-raising taxes.<sup>158</sup> Nor are they easily categorized as fees because the charge is not based on the service provided, but rather the cost a behavior imposes on society more generally.<sup>159</sup> Stormwater charges may fit this mold because they incentivize property owners to pollute less by raising the cost of certain behaviors (i.e., not treating or mitigating stormwater before it enters the sewer system) based on how much that activity contributes to a societal ill.<sup>160</sup> Unfortunately, that mold is one unacknowledged by Pennsylvania courts and municipalities, which see the question as one of taxes vs. fees.<sup>161</sup>

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154. See Scharff, *Green Fees*, *supra* note 114, at 171–72 (distinguishing taxes from fees); see also Law, *supra* note 20, at 36 (defining role of taxes). Courts determine whether a charge is a user fee by looking to its purpose, proportionality with harm created, and voluntary nature. Scharff, *Green Fees*, *supra* note 114, at 186–87 (discussing characterization of charges).

155. See Law, *supra* note 20, at 34 (“[S]tormwater is something all properties in a watershed create . . .”); see also Raven Santana, *Why Is a Stormwater Management Bill Being Called a ‘Rain Tax’?*, NJTV News (Feb. 13, 2019), <https://www.njtvonline.org/news/video/why-is-a-stormwater-management-bill-being-called-a-rain-tax/> [<https://perma.cc/8MXM-XLFP>] (explaining some dub stormwater fees as rain taxes.).

156. See Scharff, *Green Fees*, *supra* note 114, at 170 (categorizing stormwater charges as Pigovian taxes and highlighting varied state court reactions to them).

157. See *id.*

158. See Scharff, *Powerful Cities*, *supra* note 113, at 318.

159. See *id.* at 319 n.138 (discussing difficulty of fitting Pigovian fees into existing legal frameworks).

160. See Scharff, *Green Fees*, *supra* note 114, at 169–70 (explaining market mechanics of stormwater fees).

161. See *Borough of West Chester v. Pa. State Sys. of Higher Educ.*, No. 260 M.D. 2018, 2019 WL 3069642 (Pa. Commw. Ct. July 15, 2019) (determining demurrer based on tax-fee distinction). In *Borough of West Chester*, the Middle District of Pennsylvania determined that the parties had not sufficiently answered whether a stormwater charge provided a special benefit to respondent, whether the charge was proportional to any benefit, and how the borough actually used funds generated under the banner of a “fee.” *Id.* at \*13. Respondents challenged the stormwater charge and argued it was a real estate tax assessed based on the property’s condition because it forced respondents to support water quality without providing a benefit to the property. *Id.* at \*7. The borough, implementing the fee to raise money for pollution remediation, maintained that the charge was a fee

Municipalities implement their charges with this ontological minefield in mind, carefully crafting ordinances and public communications to highlight the fact that stormwater fees are tied to services being performed by the city rather than to capital improvements.<sup>162</sup> They announce the new charge as an equitable alternate to taxation driven by regulatory need, focusing on its limited application to landowners as evidence that the charge is a fee, not a tax.<sup>163</sup> Moreover, many municipalities allow property owners to offset the charge by minimizing the stormwater running off their land through the use of green infrastructure such as rain gardens, and green roofs.<sup>164</sup>

With many townships and boroughs are incapable of raising stormwater fees, regional collaboration through water authorities became

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assessed against properties, including the respondent's, that used and benefited from the MS4. *Id.* at \*3–4; *see also* Emily Opilo, *Allentown Doubles Down in Airport Stormwater Dispute, Demands Interest Payment*, THE MORNING CALL (Sept. 28, 2018), <https://www.mcall.com/news/local/allentown/mc-nws-allentown-airport-lawsuit-counterclaim-20180928-story.html> [<https://perma.cc/5CSK-53GA>] (describing stormwater charge dispute as legal fight over whether charge is tax or fee).

162. *See* City of Allentown, *Frequently Asked Questions About Stormwater* 1 (2017), <https://www.allentownpa.gov/Portals/0/files/Water/FrequentlyAskedQuestions.pdf> [<https://perma.cc/5Z3U-S47K>] (explaining Allentown's stormwater fee). Allentown, Pennsylvania implemented a stormwater fee in 2017 to support the operation and maintenance of its MS4 on a level that complied with NPDES regulations. *See id.* The stormwater fee will fund MS4 operation and maintenance, infrastructure repair, and state- and federally-mandated water conservation activities. *See id.* Allentown bases its fee off the estimated impervious surface area on city properties, charging \$20 per 500 square feet of impervious area. *See id.* at 2. Imposing a fee schedule allows the city to charge property owners with similar, highly impervious surface areas a comparable amount at a higher rate than individuals with smaller footprints. *See id.*

163. *See Federal & State Mandates Increase*, LOWER PAXTON TOWNSHIP, <https://www.lowerpaxton-pa.gov/stormwater-fee-2019> [<https://perma.cc/KY2K-CG5L>] (last visited Nov. 27, 2019) (discussing how levied money will be a fee not a tax). Lower Paxton promotes its fee, which is run through the township's water authority, as more equitable than a tax. *See id.* Whereas tax-exempt entities owning impervious stretches of property could escape responsibility under a tax, fees ensure everyone buys into compliance measures. *See id.*; *see also* LEMOYNE BOROUGH, *REHABILITATING OUR WATERWAYS* 1 (2019), <https://www.lemoynepa.com/sites/lemoynepa/files/uploads/stormwater-tri-fold-02-07-2019-final.pdf> [permalink unavailable] (describing purpose and collection mechanism of stormwater "assessment"). Lemoyne Borough chose a fee assessment because relying on taxes would force the borough to decrease its general budget spending in other areas. *See id.* at 2.

164. *See* McKinstry, *supra* note 21, at 10,830 (discussing Philadelphia's plan to incentivize property owners to implement green infrastructure); Salzman, *supra* note 112, at 30–31 (noting Philadelphia gives green infrastructure offsets for stormwater fees); *see also* *Stormwater Credit Program*, CARLISLE BOROUGH, [https://www.carlislepa.org/residents/stormwater\\_management/stormwater\\_credit\\_program.php](https://www.carlislepa.org/residents/stormwater_management/stormwater_credit_program.php) [<https://perma.cc/BSJ5-G3FT>] (last visited Oct. 5, 2019) (offering fee credit program on newly implemented program). *But see, e.g., Will Credits Be Offered?*, LEMOYNE BOROUGH, <https://www.lemoynepa.com/stormwater/faq/will-credits-be-offered> [permalink unavailable] (last visited Oct. 5, 2019) (declining to offer credit program until the borough has enough money).

an increasingly popular choice to reduce costs.<sup>165</sup> But different local needs, management styles, and sewer systems threaten to make collaboration a waste of time and money.<sup>166</sup> Municipalities may be unable to provide resources equitably across jurisdictions either because they are too small to fix such large problems or simply because they lack communication.<sup>167</sup>

### B. *The Golden Goose: Regulating with a Smile in Farmland*

Meanwhile, the DEP's NPDES permitting program extends only to a small portion of CAFOs in a watershed with 33,000 farms.<sup>168</sup> Because most farms cannot be controlled by stormwater permitting, state agencies regulate in other ways.<sup>169</sup> Nutrient management programs tackle pollutants stemming from manure while other programs offer advice and grant money in exchange for voluntary improvements.<sup>170</sup>

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165. See Law, *supra* note 20, at 60 (noting cost-efficiency in partnerships).

166. See *id.* at 60–61 (describing inefficiencies in teamwork). Nevertheless, collaboration does make costs cheaper per person by virtue of economies of scale. See *id.*

167. See Salzman, *supra* note 112, at 5 (comparing reasons for inequitable distribution of ecosystem services).

168. See 25 PA. CODE § 92a.29 (setting limits to NPDES permitting); see also *Chesapeake Bay Strategy*, PA. DEP'T AGRIC., [https://www.agriculture.pa.gov/Plants\\_Land\\_Water/StateConservationCommission/Pages/Chesapeake-Bay.aspx](https://www.agriculture.pa.gov/Plants_Land_Water/StateConservationCommission/Pages/Chesapeake-Bay.aspx) [<https://perma.cc/WG8A-X5SV>] (last visited Nov. 25, 2019) (discussing Pennsylvania's important role in cleaning up the watershed).

169. See *Agriculture*, PA. DEP'T ENVTL. PROT., <https://www.dep.pa.gov/Business/Water/Pennsylvania%E2%80%99s%20Chesapeake%20Bay%20Program%20Office/agriculture/Pages/Agriculture.aspx> [<https://perma.cc/25YU-T32J>] (last visited Sept. 12, 2019) (highlighting agricultural efforts to reduce Bay pollution). Besides NPDES permitting, farmers implement BMPs in conjunction with state programs or on their own initiative. See *id.*

170. See PA. DEP'T OF ENVTL. PROT., STANDARD OPERATING PROCEDURE CHESAPEAKE BAY AGRICULTURAL INSPECTION PROGRAM 1 (2018), [http://files.dep.state.pa.us/Water/BPNPSM/AgriculturalOperations/AgriculturalCompliance/Final\\_SOP\\_Chesapeake\\_Bay\\_Agricultural\\_Inspection\\_Program.pdf](http://files.dep.state.pa.us/Water/BPNPSM/AgriculturalOperations/AgriculturalCompliance/Final_SOP_Chesapeake_Bay_Agricultural_Inspection_Program.pdf) [<https://perma.cc/MGL7-VMQA>] (explaining procedures used to inspect agricultural operations under Pennsylvania Clean Streams Law); see also PENN STATE EXTENSION, *Nutrient Management Legislation in Pennsylvania: A Summary of the 2006 Regulations* 1 (last visited Sept. 12, 2019), <https://extension.psu.edu/programs/nutrient-management/act-38-law-and-regulations/nutrient-management-legislation-in-pennsylvania-a-summary-of-the-2006-regulations> [<https://perma.cc/V6PA-EJX6>] (explaining Act 38 Nutrient Management Plan Act); see also Caitlin Finnerty, *Sustainable Farming in Lancaster County, Pa.*, CHESAPEAKE BAY PROGRAM (Aug. 1, 2012), [https://www.chesapeakebay.net/news/article/from\\_the\\_field\\_farming\\_for\\_the\\_future\\_in\\_lancaster\\_county\\_pa](https://www.chesapeakebay.net/news/article/from_the_field_farming_for_the_future_in_lancaster_county_pa) [<https://perma.cc/PVD5-ZB63>] (noting economic efficiency of sustainable farming practices). While CAFOs are regulated under Pennsylvania's Act 38, the approximately 95% of agricultural operations remaining in the state are under no obligation to comply. See PENN STATE EXTENSION, *supra*, at 2 (explaining voluntary implementation of nutrient management plans). Whether compliance is mandatory or voluntary, agricultural operations must work

Because the agricultural sector was a significant reason for Pennsylvania's ongoing noncompliance, DEP programs focused on creating incentives for farmers to participate in conservation efforts.<sup>171</sup> Although the Agricultural Inspection Program, which checks for compliance with sediment and manure management laws, covers all farms across Pennsylvania's section of the Chesapeake Bay watershed, it has not yet reached its proposed 10% annual rate of farm inspections.<sup>172</sup> Other programs have had varying degrees of effectiveness.<sup>173</sup>

Legislative action, though slow, more often supports farmers while restricting MS4s.<sup>174</sup> Pennsylvania Governor Tom Wolf signed the PA Farm Bill in 2019, which addresses the state's TMDL funding gap while protecting farmers from additional costs.<sup>175</sup> And after several years of legislative

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with a certified nutrient management specialist to develop a plan in the state-approved format. *See id.* at 2

171. *See* ENVTL. FIN. CTR., UNIV. OF MD., FINANCIAL INCENTIVES FOR WATER QUALITY PROTECTION AND RESTORATION ON AGRICULTURAL LANDS IN PENNSYLVANIA 8–18 (Sept. 2016), [https://www.chesapeakebay.net/channel\\_files/23872/financial\\_incentives\\_for\\_conservation\\_on\\_ag\\_land\\_9-28-16.pdf](https://www.chesapeakebay.net/channel_files/23872/financial_incentives_for_conservation_on_ag_land_9-28-16.pdf) [<https://perma.cc/782D-MVR5>] (discussing financial incentives for private agricultural operations).

172. *See* PA. DEP'T OF ENVTL. PROT., ANNUAL SUMMARY OF AGRICULTURAL INSPECTIONS JULY 1, 2016–JUNE 30, 2017 (2017), [http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/FINAL\\_CBAIP\\_Annual%20Summary\\_June.17.pdf](http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/FINAL_CBAIP_Annual%20Summary_June.17.pdf) [<https://perma.cc/ZWA8-8Q2W>] (summarizing implementation results of program). Nevertheless, over 10% of total acreage within the watershed was inspected. *See id.*

173. *See* WHAT IS REAP?, PA. DEP'T AGRIC., [https://www.agriculture.pa.gov/Plants\\_Land\\_Water/StateConservationCommission/REAP/Pages/default.aspx](https://www.agriculture.pa.gov/Plants_Land_Water/StateConservationCommission/REAP/Pages/default.aspx) [<https://perma.cc/27BA-DAE7>] (last visited Oct. 4, 2019) (summarizing Resource Enhancement and Protection Program eligibility requirements and BMPs covered); *see also* Russell Redding, *Conservation in Pennsylvania's Ag Industry: Leading by Example*, LANCASTERFARMING.COM (Sept. 6, 2019), [https://www.lancasterfarming.com/news/columnists/conservation-in-pennsylvania-s-ag-industry-leading-by-example/article\\_df47861e-755e-5b23-9cf7-37988498c3a8.html](https://www.lancasterfarming.com/news/columnists/conservation-in-pennsylvania-s-ag-industry-leading-by-example/article_df47861e-755e-5b23-9cf7-37988498c3a8.html) [<https://perma.cc/6NC8-YT5U>] (touting PA Farm Bill's "direct investments in conservation"); *Nutrient Management Program*, PA. DEP'T OF AGRIC., [https://www.agriculture.pa.gov/Plants\\_Land\\_Water/StateConservationCommission/NutrientManagement-Program/Pages/default.aspx](https://www.agriculture.pa.gov/Plants_Land_Water/StateConservationCommission/NutrientManagement-Program/Pages/default.aspx) [<https://perma.cc/8VT8-DLEN>] (last visited Oct. 4, 2019) (summarizing focus of PA Act 38 Nutrient Management Program). The Resource Enhancement and Protection (REAP) Program is proving a popular way for farmers to earn tax credits by installing BMPs. *See* Redding, *supra*.

174. *Compare* Senator Gene Yah, Memorandum to All Pennsylvania Senate Members (May 07, 2019), <https://www.legis.state.pa.us/cfdocs/Legis/CSM/showMemoPublic.cfm?chamber=S&SPick=20190&cosponId=29521> [<https://perma.cc/E8VA-SFCA>] (announcing intent to re-introduce legislation regulating urban fertilizer use), *with* 3 PA. CONS. STAT. §§ 3101–3110 (2019) (providing \$2.5 million in assistance to farmers developing BMPs). Similar urban fertilizer legislation, S.B. 792, passed in the Senate but died in the House during the 2017–2018 legislative term. *See* S.B. 792, 2017–2018 Gen. Assemb., Reg. Sess. (Pa. 2018) (as amended by Senate, March 19, 2018).

175. *See* PA Press Release, Pa. Governor's Office, *Governor Wolf Announces \$28 Million to Improve Local Water Quality* (Oct. 04, 2016), <https://www.governor.pa.gov/newsroom/governor-wolf-announces-a-new-statefederal-partnership-to-bring-28-million-to-help-farmers-in-bay-watershed-improve-local-water-quality> [<https://perma.cc/LRL5-6TA3>] (announcing grants, loans, and tax incentives to help farm-

standstill, Pennsylvania's General Assembly passed legislation establishing the Conservation Excellence Grant Program for farmers in the Bay watershed.<sup>176</sup>

C. *Phase III—The Final Say in Watershed Implementation Plans*

Pennsylvania's Phase III Draft WIP—a combined effort between the DEP, Department of Agriculture, and the Department of Conservation and Natural Resources—focused on local water quality improvements and was widely criticized by environmentalists and Chesapeake Bay partners.<sup>177</sup> Introducing the final leg of TMDL project, the Phase III WIP lays out the Commonwealth's final push toward environmental compliance.<sup>178</sup> Yet the difference between available funds and programming costs raised a red flag that the Commonwealth might not be able to live up to its promises.<sup>179</sup>

The draft plan showed the state operating at a \$256 million gap between money needed and funds available to drive TMDL reductions.<sup>180</sup> Further, the plan's verified BMPs were insufficient to even reach the TMDL goal.<sup>181</sup> The Commonwealth also relied on self-initiated plans by private parties that could not be verified under existing programs.<sup>182</sup>

Reviews were mixed.<sup>183</sup> Maryland stakeholders and the Chesapeake Bay Foundation took the alleged draft plan inadequacies as a sign Penn-

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ers implement BMPs); *see also* *PA Farm Bill*, PA. DEP'T AGRIC. <https://www.agriculture.pa.gov/Pages/PA-Farm-Bill.aspx> [<https://perma.cc/P44P-QWD4>] (last visited Nov. 26, 2019) (outlining six ways Pennsylvania Farm Bill helps farmers).

176. *See* 3 PA. CONS. STAT. §§ 3101–3110 (2019).

177. *See, e.g.*, Viviano, *supra* note 11 (criticizing Pennsylvania's Watershed Implementation Plan as inadequate); Finley, *supra* note 11 (expressing commentator's assertions that Pennsylvania must do more to reduce Bay pollution).

178. *See* FINAL PHASE III *supra* note 103, at 15–17 (defending Phase I and II efforts while setting steps to take through 2025).

179. *See id.* at 4 (discussing investment need to fill state funding gap); *see also* Viviano, *supra* note 11 (criticizing Pennsylvania's restoration efforts and funding gap); PA. DEP'T OF ENVTL. PROT., DRAFT PHASE 3 WATERSHED IMPLEMENTATION PLAN 4 (2019) [hereinafter DRAFT PHASE III], [http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/WIPIII/DraftPlan/PA\\_Phase\\_3\\_WIP\\_FinalDraft.pdf](http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/WIPIII/DraftPlan/PA_Phase_3_WIP_FinalDraft.pdf) [<https://perma.cc/P4GU-CY5Z>] (discussing investment need to fill state funding gap).

180. *See* DRAFT PHASE III, *supra* note 179, at 9 (discussing funding gap).

181. *See* *Pennsylvania's Watershed Implementation Plan*, CHESAPEAKE BAY FOUND., <https://www.cbf.org/how-we-save-the-bay/chesapeake-clean-water-blueprint/state-watershed-implementation-plans/pennsylvania/> [<https://perma.cc/E348-YBTH>] (last visited Oct. 5, 2019) (critiquing Draft Phase III WIP for not achieving nitrogen load reductions or necessary funding).

182. *See* DRAFT PHASE III, *supra* note 179, at 26 (describing engagement strategy). The DEP put emphasis on private initiatives to create awareness and promote action. *See id.* Other non-regulatory plans included ecosystem restoration projects and the improvement of soil health. *See id.*

183. *Compare* ENVTL. PROT. AGENCY, EVALUATION OF PENNSYLVANIA'S DRAFT PHASE III WATERSHED IMPLEMENTATION PLAN 1–2, 4 (2019) [hereinafter EPA, DRAFT EVALUATION] (highlighting strengths of Draft Phase III WIP), *with* Viviano,

sylvania was not serious about its commitment.<sup>184</sup> Fed up, the two groups published blistering op-eds that threatened legal action should Pennsylvania not present a stronger Phase III WIP.<sup>185</sup> Under the Trump Administration, the EPA took a more lenient approach, commending the Commonwealth for its past efforts and looking forward to its final word.<sup>186</sup>

#### IV. CARROTS & STICKS: A HARD LOOK AT PENNSYLVANIA'S FINAL PHASE III WIP

Pennsylvania's focus on meeting CWA water quality standards in its Final Phase III WIP by imposing stricter requirements on MS4s without overseeing agricultural programs does not provide "reasonable assurance" that the Commonwealth will meet its Chesapeake Bay TMDL.<sup>187</sup> With just six years to fulfill ambitious pollution goals, municipalities face pressure to make bad financial decisions to maintain their NPDES permits.<sup>188</sup> Yet, despite farms being the major source of pollution, the Commonwealth

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*supra* note 11 (noting negative reactions to Draft Phase III WIP). The EPA highlighted key strengths and enhancements that would "provide greater confidence to the CBP partnership and the public that Pennsylvania will have programs and practices in place by 2025 that will promote achievement of its Phase III WIP planning targets." EPA, DRAFT EVALUATION, *supra*, at 4.

184. See Blankenship, *supra* note 12 (discussing missing reassurances in Pennsylvania's draft WIP). The EPA criticized Pennsylvania's plan because of its failure to address how the state would pursue the missing \$256 million annual funding gap. See *id.*; see also Viviano, *supra* note 11 (reporting on Maryland Governor Larry Hogan's call for Pennsylvania to be held accountable). The draft Phase III WIP lacked a plan to reach the state's 2025 requirement, accounting for only two-thirds of the necessary nitrogen reduction. See Blankenship, *supra* note 12. The Chesapeake Bay Foundation called Pennsylvania the "weakest link" in the TMDL undertaking, noting that the state's projected results assumed private citizens would take unmonitored action. See Viviano, *supra* note 11.

185. See Baltimore Sun Editorial Board, *Let's Sue Pennsylvania*, THE BALT. SUN (July 15, 2019), <https://www.baltimoresun.com/opinion/editorial/bs-ed-pennsylvania-chesapeake-20190715-7asfosvmfnbsjokvtua65xiiq-story.html> [<https://perma.cc/E23J-RJFA>] (calling out Pennsylvania and EPA for underperforming); Press Release, *CBF Report: The State of the Blueprint*, CHESAPEAKE BAY FOUND. (May 28, 2019), <https://www.cbf.org/news-media/newsroom/2019/all/cbf-report-the-state-of-the-blueprint.html> [<https://perma.cc/K4K9-4S38>] (calling Pennsylvania's Draft Phase III WIP "woefully inadequate"). But see Letter from Larry Hogan, Maryland Governor, to Tom Wolf, Pennsylvania Governor (May 28, 2019) (offering to rally "financial and regulatory support").

186. See DRAFT EVALUATION, *supra* note 183, at 1–4 (highlighting strengths of Pennsylvania's draft plan and providing potential enhancements to plan); see also Whitney Pipkin, *Chesapeake Cleanup Leaders Meet Without Tackling PA's Funding Shortfall*, BAY J. (Sept. 10, 2019), [https://www.bayjournal.com/article/chesapeake\\_cleanup\\_leaders\\_meet\\_without\\_tackling\\_pas\\_funding\\_shortfall](https://www.bayjournal.com/article/chesapeake_cleanup_leaders_meet_without_tackling_pas_funding_shortfall) [<https://perma.cc/4TYF-2ZN7>] (holding off criticism until after full review).

187. See Blankenship, *supra* note 12 (noting Pennsylvania had six years to achieve roughly six times nitrogen reductions made in previous ten years). With approximately 34 million pounds of nitrogen left to eliminate by 2025, Pennsylvania's annual funding gap alarmed the EPA. See *id.*

188. For a further discussion of the financial strain municipalities face funding stormwater improvements, see *supra* notes 112–139 and accompanying text.

continues to encourage the voluntary compliance of agricultural operations by offering money through government programs that cannot manage the promised review, verification, or funding.<sup>189</sup>

A. *Oversight and Enforcement: A Last Resort*

The DEP's oversight of environmental programs is insufficient to drive Phase III pollution reduction goals.<sup>190</sup> It does not have a grasp on agricultural compliance with its environmental programs.<sup>191</sup> Without staying in touch with independent farming practices, the state cannot develop cost-effective incentive programs.<sup>192</sup>

Despite acknowledging "Pennsylvania must change its approach for the Chesapeake Bay," the DEP is still pursuing a carrot-before-the-stick approach to regulating non-point source polluters.<sup>193</sup> In 2016, when the DEP already knew agricultural runoff was a significant reason for the state's lagging conservation efforts, Pennsylvania allocated more money to the problem without ensuring its existing programs were being implemented effectively.<sup>194</sup> Of the 33,000 farms in the watershed, the state's Agriculture Inspection Program had only visited 2,080 farmsteads not already monitored by an NPDES permit.<sup>195</sup>

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189. For a further discussion on agricultural legislation, see *supra* notes 212–214 and accompanying text.

190. For further discussion on the financial strain on municipalities to fund improvements, see *supra* notes 112–139 and accompanying text; see also Eide, *Fiscal Distress*, *supra* note 110, at 3 (proposing state oversight would reduce fiscal distress and prevent municipal bankruptcy).

191. See ENVTL. FIN. CTR., *supra* note 9, at 7–8 (discussing monitoring of private agricultural operations); see also Finley, *supra* note 11 (accusing EPA of not monitoring Pennsylvania's state programs).

192. See ENVTL. FIN. CTR., *supra* note 9, at 7–8 (observing incentive programs without measurable compliance are ineffective). For many years the DEP focused on creating a "culture of compliance" among farmers who could not be regulated under the Clean Water Act, attempting to inspire change through public opinion rather than regulation. See *id.* But the DEP found it difficult to effectively track BMPs undertaken independently of state programs, undercutting its measure of effectiveness. See *id.*

193. See PA. DEP'T OF ENVTL. PROT., *supra* note 208; see also Houck, *supra* note 5, at 10,212 (discussing existing government approaches offering cash payouts).

194. See Pa. Governor's Office, *supra* note 175 (announcing new team-up to provide financing to watershed pollution reduction efforts). The \$12 million in state funding was part of a partnership with the EPA and the USDA. See *id.* The effort "aligns closely" with Pennsylvania's Chesapeake Bay Restoration Strategy, which was announced earlier in 2016. See *id.*

195. See PA. DEP'T OF ENVTL. PROT., DRAFT 2018 PENN. INTEGRATED WATER QUALITY MONITORING & ASSISTANCE REPORT (2018), [https://www.depgis.state.pa.us/2018\\_integrated\\_report/index.html](https://www.depgis.state.pa.us/2018_integrated_report/index.html) [<https://perma.cc/3QEA-NT22>] (describing Pennsylvania's evolving efforts to monitor farms). The state relies on remote sensing, surveys, and self-assessments to determine whether farmers are self-funding conservation practices without inspecting the property. See ENVTL. FIN. CTR., *supra* note 9, at 7 (critiquing Pennsylvania's monitoring program as ineffective).

While state law technically limits manure application to quantities plants need and can use, without oversight farmers are free to ignore this “agronomic rate” provision without recourse.<sup>196</sup> What amounts to an exemption of agricultural producers initially looks like a benefit to small and mid-sized farms.<sup>197</sup> But because of market concentration it means large-scale polluters suffer no penalty for wasteful, damaging practices while smaller farms still have difficulty budgeting for eco-friendly practices.<sup>198</sup>

Legislative efforts also fail to rein in pollution or support municipalities.<sup>199</sup> Legislation passed in 2019 promising money to farms making conservation efforts offered little comfort to Chesapeake Bay partners.<sup>200</sup> The statute’s text suggests that on-the-ground inspections will fall to county level conservation districts and cautions that grants will be available only if the Pennsylvania General Assembly makes funds available.<sup>201</sup>

Moreover, nine years after the EPA implemented the TMDL, state lawmakers are still apprehensive about the department’s strategy and how the mandate affects municipalities.<sup>202</sup> Thanks to years of neglect, state legislators are not alone.<sup>203</sup> One township official called the mandate’s

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196. See Office of Enforcement and Compliance Assurance, Land Application of Sewage Sludge: A Guide for Land Appliers on the Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge, 40 C.F.R. Part 503 1–3 (1994), <https://www.epa.gov/sites/production/files/2018-11/documents/land-application-sewage-sludge.pdf> [<https://perma.cc/ZA2Q-P7G5>] (explaining federal regulation of biosolids as applied to agricultural land). Biosolids cannot be applied to agricultural land in excess of rates necessary to promote plant growth or when application would put the agricultural operation above a cumulative load rating. See *id.* at 3, 14; see also Lehner, *supra* note 52, at 10,856 (highlighting lack of environmental accountability in farming).

197. See Lehner, *supra* note 52, at 10,862 (highlighting heightened state requirements disadvantaging small farms).

198. See *id.* at 10,867–68 (criticizing factory farms for taking advantage of loose regulations).

199. See H.B. 473–474, 2019 Gen. Assemb., Reg. Sess. (Pa. 2019) (referred to Local Government committee Feb. 11, 2019). The bills would allow a wider range of municipalities to directly implement fees. See *id.*

200. See 3 PA. CONS. STAT. §§ 3101–3110 (2019) (establishing Conservation Excellence Grant Program); Letter from Larry Hogan, Maryland Governor, to Tom Wolf, Pennsylvania Governor, and Andrew Wheeler, Administrator of Environmental Protection Agency (Aug. 29, 2019) (urging stakeholders not to waiver in protection of Chesapeake Bay).

201. See 3 PA. CONS. STAT. §§ 3107–3108 (2019) (promising money through tax credits, loans, and grants). The Soil and Conservation Excellence Grant Program allows the state to delegate responsibilities and duties to county conservation districts. See *id.* § 3108(d) (allowing delegation of inspection to agent).

202. See generally *Stormwater Hearing*, *supra* note 2 (discussing municipal approaches to stormwater).

203. See Chelsea Strub, ‘End the Rain Tax’ Group Fighting Stormwater Fee, WNEP (June 10, 2019), <https://wnep.com/2019/06/10/end-the-rain-tax-group-fighting-stormwater-fee/> [<https://perma.cc/62FQ-9EN8>] (reporting citizen outrage over new stormwater runoff fee); *An Unfunded Mandate Primer & MS-4 Storm-Water E.P.A. Nightmare Stormwater*, NORAIN.TAX.ORG (Apr. 26, 2019), <https://noraintax.org/u/f/an-unfunded-mandate-primer-ms-4-storm-water-epa-nightmare> [<https://perma.cc/Q7A8-YUVT>] (expressing outrage that water authorities cannot be audited).



permitting requirements an “expensive reduction that can be difficult to quantify and challenging to achieve.”<sup>204</sup>

B. *Inequity of High Speed, High Stakes MS4 Regulation*

Pennsylvania’s increasing point source regulations benefit resource-rich communities with stronger tax bases over smaller and low-income communities.<sup>205</sup> Without tax authority, municipalities rely on user fees to raise revenue.<sup>206</sup> Stormwater user fees are well-suited to support small, recurring costs such as garbage collection rather than capital improvement costs.<sup>207</sup> Municipalities renewing their permits after requirements became tougher have to raise larger, riskier fees to meet the high capital cost of infrastructure repair in a shorter window.<sup>208</sup> Due to the monstrous costs of infrastructure repair and development, municipalities may look beyond fees to larger initiatives such as municipal bonds.<sup>209</sup> But while bonds provide upfront capital, investors may require small, resource poor communities to pay higher interest rates to make up for the fact they are less likely to make the payments.<sup>210</sup> Ultimately, utilizing bonds means poorer communities will pay more in the end for the same improvements as better situated ones, incurring more financial risk just to meet the same requirements.<sup>211</sup> Struggling municipalities are not equipped to adapt to stormwater regulations by issuing bonds and will fare poorly if forced to borrow funds.<sup>212</sup>

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204. *Stormwater Hearings*, *supra* note 2, at 82 (testimony of Andrew Boni, Perry Township Supervisor and Second Vice President of Pennsylvania State Association of Township Supervisors).

205. *Cf.* Scharff, *Powerful Cities*, *supra* note 113, at 342 (discussing inequitable distribution of tax power).

206. *See id.* at 302–03 (explaining shift to reliance on user fees).

207. *See* Rosenbloom, *Funding Adaptation*, *supra* note 113, at 671–72 (noting municipalities may need largescale capital before fees raise revenue).

208. *See* Sarah Gisriel, *Lower Paxton Proposes \$128 Stormwater Fee for Residents*, ABC 27 NEWS (Oct. 31, 2018), <https://www.abc27.com/news/local/harrisburg/lower-paxton-proposes-128-stormwater-fee-for-residents/> [https://perma.cc/85U8-569Z] (explaining township’s proposed fee offers no exceptions). For more discussion on the difference between taxes and fees, see Section III.A.1 *supra*.

209. *See supra* note 30 and accompanying text (highlighting large costs incurred by smaller municipalities); *see also* PENNFUTURE, *FUNDING STORMWATER MANAGEMENT IN PENNSYLVANIA MUNICIPALITIES 7* (2017) (critiquing municipal bonds and loan programs as unstable).

210. *See* Rosenbloom, *Funding Adaptation*, *supra* note 113, at 681 (“Economically distressed cities may also pay a higher cost for borrowing because their bonds may carry higher risk, and thus a higher interest rate.”).

211. *See id.* at 659–60 (discussing difficulties of funding stormwater infrastructure repairs).

212. *See id.* at 681 (discussing ways municipal bonding is incompatible with goals adaptation). Municipal bonding is most effective when funding economic development capable of generating a positive return on investment. *Id.* at 680.

## V. LOOKING FORWARD TO 2025

The fates of the Chesapeake Bay and Pennsylvania municipalities are in the hands of national and state politics.<sup>213</sup> Under the current presidential administration, the EPA is focused on de-regulation.<sup>214</sup> Nevertheless, the EPA has the power to implement stronger regulatory actions on measurable discharges from point source outflows.<sup>215</sup> Moreover, it already threatened to cover more municipalities under NPDES permits and has set even higher standards on existing permittees following Pennsylvania's failure to meet the 2017 milestone.<sup>216</sup>

Pennsylvania's Democratic Governor promises environmental progress but is hampered by the economic realities of the farming industry,

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213. See Juliet Eilperin & Brady Dennis, *Administration Finalizes Repeal of 2015 Water Rule Trump Called 'Destructive and Horrible'*, WASHINGTON POST (Sept. 11, 2019), [https://www.washingtonpost.com/climate-environment/administration-finalizes-repeal-of-2015-water-rule-trump-called-destructive-and-horrible/2019/09/11/fddfa49a-d4aa-11e9-9343-40db57cf6abd\\_story.html](https://www.washingtonpost.com/climate-environment/administration-finalizes-repeal-of-2015-water-rule-trump-called-destructive-and-horrible/2019/09/11/fddfa49a-d4aa-11e9-9343-40db57cf6abd_story.html) [<https://perma.cc/U5AL-YABD>] (noting politically charged nature of federal environmental regulations). The meaning of "waters" under the CWA is a hot topic in environmental law subject to much debate and litigation. See *id.* The Trump Administration is rolling back Clean Water Act regulations by contracting the definition of "waters of the U.S." See *id.* Previously, the Obama Administration had expanded the definition of "waters" to include wetlands, various ditches, and stormwater controls. See *id.* Five of six states in the Bay watershed operate under the Obama-era standard, but even so, "tens of thousands of acres that connect underground or through ditches to nearby waterways will lose protection" with the repeal, potentially affecting the Bay's restoration. See *id.*; see also Press Release, *What They Are Saying About EPA's New Methane Proposal*, ENVTL. PROT. AGENCY (Aug. 29, 2019), <https://www.epa.gov/newsreleases/what-they-are-saying-about-epas-new-methane-proposal> [<https://perma.cc/2NNK-M9YN>] (quoting political support for relaxing methane limits).

214. See Eilperin & Dennis, *supra* note 213 (explaining Trump Administration's aggressive efforts to decrease federal environmental oversight). Within months of entering office, President Trump directed the EPA to review the 2015 rule with an eye toward repealing it. See *id.* The Trump Administration also relaxed numerous environmental protections on oil, gas, and emissions. See *id.*; ENVTL. PROT. AGENCY, FY 2020 EPA BUDGET IN BRIEF 59 (2019), <https://www.epa.gov/sites/production/files/2019-03/documents/fy-2020-epa-bib.pdf> [<https://perma.cc/GFT3-BWQK>] (proposing 90% decrease in federal funding of Chesapeake Bay restoration).

215. See ENVTL. PROT. AGENCY, CHESAPEAKE BAY TMDL 7-1 to -4 (2010) [hereinafter EPA, TMDL Section 7], [https://www.epa.gov/sites/production/files/2014-12/documents/cbay\\_final\\_tmdl\\_section\\_7\\_final\\_0.pdf](https://www.epa.gov/sites/production/files/2014-12/documents/cbay_final_tmdl_section_7_final_0.pdf) [<https://perma.cc/DA7U-BUPQ>] (discussing WIP structure and federal action to ensure compliance); see also PA. DEP'T OF ENVTL. PROT., A DEP STRATEGY TO ENHANCE PENNSYLVANIA'S CHESAPEAKE BAY RESTORATION EFFORT 5-7 (2016), <http://files.dep.state.pa.us/Water/ChesapeakeBayOffice/DEP%20Chesapeake%20Bay%20Restoration%20Strategy%20012116.pdf> [<https://perma.cc/QY5S-KDPW>] (reacting to EPA backstop measures); see also ENVTL. FIN. CTR., *supra* note 9, at 6 (discussing EPA's previous backstop measures following Pennsylvania's non-compliance).

216. See EPA TMDL Section 7, *supra* note 215, at 7-12 (listing potential actions available to ensure states develop and implement adequate WIPs); EPA EVALUATION, *supra* note 89, at 4 (encouraging the use of permits). First on the EPA's list of potential actions is broader and stricter oversight of NPDES permittees. See EPA TMDL, Section 7, *supra* note 215.

which has suffered in recent years, and politics.<sup>217</sup> Additionally, the General Assembly is becoming more polarized and passing less legislation overall.<sup>218</sup> Moreover, instead of pressuring large pollution producers, state agencies continue to rely on voluntary measures and the low-hanging fruit of point source pollution control to lower Pennsylvania's pollution levels.<sup>219</sup> Because of the state's failure to change gears despite years of high-level planning, both small municipalities and their residents are asking, "What should we do?"<sup>220</sup>

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217. See 2014 AGREEMENT, *supra* note 79, at 1 (committing Pennsylvania to improving Bay water quality). The 2014 Chesapeake Bay Partnership Agreement committed the cost-effective results to Bay pollution. 2014 AGREEMENT, *supra* note 79. With farms hit hard in recent years by crop failure, low pricing, and tariffs, the going has not been easy. See Blankenship, *supra* note 12 (discussing roadblocks to Pennsylvania's water quality goals). York County announced in 2019 that the 2025 goal "would not be met." See *id.* Pennsylvania defended its efforts after releasing the Draft Phase III WIP, blaming the federal government and non-profits for not contributing to state efforts. See Finley, *supra* note 11; Justine McDaniel, *Here's What Pennsylvania Is Doing to Address Climate Change—and Why Politics Is Making it Difficult*, PHILA. INQUIRER (Sept. 18, 2019), <https://www.inquirer.com/news/pennsylvania-climate-change-governor-wolf-carbon-state-action-20190918.html> [<https://perma.cc/PVD2-6EPU>] (discussing gap between policy creation and implementation).

218. See Chris Brennan, *Pa. House and Senate Remain in Republican Control Despite Democratic Gains*, PHILA. INQUIRER (Nov. 7, 2018), <https://www.inquirer.com/philly/news/politics/elections/elections-2018-pennsylvania-legislature-results-house-senate-20181106.html> [<https://perma.cc/FS4B-92AF>] (noting Republican control of General Assembly since 2010); see also Jonathan Lai & Liz Navratil, *Pa. State Lawmakers Among the Highest Paid in U.S., But They're Doing Less and Less Actual Lawmaking*, PHILA. INQUIRER (Sept. 13, 2019), <https://www.inquirer.com/news/pennsylvania/spl/pa-legislature-highest-paid-largest-bills-legislation-partisanship-20190913.html> [<https://perma.cc/4PHR-676M>] (identifying 20% decrease in bills introduced since 1990s).

219. See 2014 AGREEMENT, *supra* note 79, at 2 (committing to "acknowledge, support, and embrace local governments"). Despite Pennsylvania's pledge, concern about the "rain tax" is spreading through central Pennsylvania. See *Stormwater Hearing*, *supra* note 2, at 5–6 (noting growing concern over regulations by small-town residents). Lebanon Mayor Sherry Capello observed that the TMDL's emphasis on adaptive management translated to small municipalities at the end of the line being asked to pay to hit moving targets. See *id.* at 59–71 (testimony of Sherry Capello, City of Lebanon Mayor). A township supervisor further testified to the inefficiencies: MS4s in the Chesapeake Bay watershed spend \$74 million annually for current requirements but account for less than 1% of nitrogen and 2% of phosphorous reductions. See *id.* at 82 (testimony of Andrew Boni, Perry Township Supervisor and Second Vice President of Pennsylvania State Association of Township Supervisors).

220. *Stormwater Hearing*, *supra* note 2, at 82 (testimony of Andrew Boni, Perry Township Supervisor and Second Vice President of Pennsylvania State Association of Township Supervisors) (asking "what should we do?"); see PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP SUPERVISORS, PSATS' 2019 LEGISLATIVE PRIORITIES 3 (2019), [http://psats.org.s97340.gridserver.com/ckfinder/userfiles/files/2019%20Legislative%20Priorities\\_LowRes.pdf](http://psats.org.s97340.gridserver.com/ckfinder/userfiles/files/2019%20Legislative%20Priorities_LowRes.pdf) [<https://perma.cc/9Y24-2W3M>] (asking General Assembly for flexibility and a two-year moratorium on passing new MS4 regulations). The Pennsylvania State Association of Township Supervisors continues to lobby for legislative relief from EPA and DEP regulations, requesting "equitable and proportional allocation of the responsibility" between point source

The question is one few communities in the Bay watershed are in a position to answer satisfactorily for their constituents.<sup>221</sup> Most counties face the triple threat of falling population numbers, an aging populace, and a higher-than-average poverty rate.<sup>222</sup> Resources are slim, and decreasing even as expectations rise.<sup>223</sup>

Municipalities answered the question by spreading the cost among residents.<sup>224</sup> In Lemoyne Borough, the minimum residential payment is \$7.70 per month, or \$92 annually.<sup>225</sup> Carlisle Borough imposed a tiered fee system to fund stormwater improvements that costs single family residences up to \$126 annually and potentially much more to businesses.<sup>226</sup> Lower Paxton Township, arriving late in the game, imposed its \$128 fee without offering credit for on-site improvements.<sup>227</sup> The longer municipalities wait, the faster they will need to raise money and the harder it will

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and non-point source pollution. See PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP SUPERVISORS, *supra* at 3; see also Pipkin, *supra* note 186 (expressing uncertainty toward Pennsylvania's commitment to Bay restoration). While the EPA reserved criticism for after its plan review, Maryland governor Larry Hogan told Pennsylvania to step it up and urged the EPA to make sure the state complied. See Pipkin, *supra* note 186. The Chesapeake Bay Foundation called the situation "a 600-pound gorilla in the room that was ignored." *Id.*

221. See, e.g., Jennifer Learn-Andes, *More Outrage over Stormwater Fee as WWSA Continues to Make Changes*, TIMES LEADER (Jan. 31, 2019), <https://www.timesleader.com/news/732117/more-outrage-over-stormwater-fee-as-wwsa-continues-to-make-changes> [<https://perma.cc/8MWE-4FDU>] (noting residents are expressing concern to local, state, and federal officials); Sean Sauro, *The Cost of Rain: More Towns Ask Property Owners to Pay for Stormwater Plans*, PENNLIVE (Feb. 27, 2019), <https://www.pennlive.com/news/2019/02/the-cost-of-rain-more-townships-boroughs-asking-property-owners-to-pay-for-stormwater-plans.html> [<https://perma.cc/J3K6-WFWJ>] (discussing difficulties the unfunded mandate creates for municipalities and citizens).

222. See *Statistics for Pennsylvania Counties and Municipalities*, U.S. CENSUS BUREAU, <https://www.census.gov/en.html> [<https://perma.cc/5XD4-XAMX>] (follow "Data" hyperlink; then click "Data Tools & Apps;" click "QuickFacts" and search by state, county, or municipality) (comparing poverty, age, and population to Commonwealth average).

223. See *id.* (showing majority of watershed counties with higher than average percentage of persons in poverty and decreasing populations compared to Commonwealth); see also Laura McCrystal, *Pennsylvania's Population Is Aging. Who Is Going to Pay for It?*, PHILIA. INQUIRER (Jan. 15, 2018), <https://www.inquirer.com/philly/news/pennsylvania/pennsylvanias-population-is-aging-who-is-going-to-pay-for-it-20180115.html> [<https://perma.cc/J988-MJLP>] (discussing how an aging populace erodes the tax base and strains local government services).

224. For a further discussion of stormwater fees implemented by municipalities across the Commonwealth, see *supra* notes 162–164 and accompanying text.

225. See LEMOYNE BOROUGH, *supra* note 163 (setting maximum annual increased cost for residential property owners at \$554.40).

226. See CARLISLE BOROUGH, *supra* note 164 (setting business fee structure based on impervious area).

227. See Gisriel, *supra* note 208 (proposing a fee to fund annual improvements of \$3.8 million).

become to raise a stormwater fee that does not look like a tax.<sup>228</sup> With uncertainty in the air, one thing is for sure: in the Chesapeake Bay, there is still much work to do.<sup>229</sup>

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228. For a further discussion on the comparison between tax and fee features, see *supra* notes 140–161 and accompanying text.

229. See William Baker, *Time's Running Out to Meet Bay Cleanup Goals, Especially in PA*, BAY J. (Aug. 14, 2019), [https://www.bayjournal.com/article/times\\_running\\_out\\_to\\_meet\\_bay\\_cleanup\\_goals\\_especially\\_in\\_pa](https://www.bayjournal.com/article/times_running_out_to_meet_bay_cleanup_goals_especially_in_pa) [<https://perma.cc/38A5-2PYV>] (warning road to completing conservation efforts has substantial challenges); cf. OLIVER, *supra* note 1, at 1 (discussing environment in form of poetry). “Pennsylvania has the opportunity to be the Bay’s hero.” Baker, *supra*.