



ENVIRONMENTAL POLICY
INNOVATION
CENTER

Stormwater Innovation

A tale of two counties, one city, and how to implement effective approaches to reverse the harm from polluted runoff

Authors: Timothy Male, PhD; Thomas Caggiano



Low-impact stormwater treatment structures in a Montgomery County neighborhood.

*Photo credit: Dan Reed
www.justupthepike.com*

About the Environmental Policy Innovation Center

The mission of the **Environmental Policy Innovation Center** is to build policies that deliver spectacular improvement in the speed and scale of conservation.

We focus on a narrow set of strategies:

- Improving policies that allow private sector funding or stewardship to expand or supplant public or charitable conservation work.
- Transforming government policies to focus on what matters – outcomes.
- Eliminating the organizational barriers that prevent public agencies from adapting to 21st century solutions.

We believe that innovation and speed are central to broadening efforts to conserve wildlife, restore special natural places, and to deliver people and nature with the clean water they need to thrive. To achieve those goals, conservation programs must evolve to accommodate our modern understanding of human behavior and incentives, and the challenges posed by humanity's expanding footprint. We embrace experimentation with novel ideas in conservation policy, to learn quickly from mistakes and iteratively design effective approaches to be even more successful.

For more information email tmale@policyinnovation.org, or call (240) 274-0341.

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Caitlin Wall

Maryland/DC Policy Director,
POTOMAC CONSERVANCY

Eliza Cava

Director of Conservation,
AUDUBON NATURALIST SOCIETY

Greg Cannito

Partnership Innovator,
CORVIAS, INC.

Adam Ortiz

Director, Department of the Environment,
PRINCE GEORGE'S COUNTY GOVERNMENT

Patty Bubar

Deputy Director,
MONTGOMERY COUNTY DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Prince George's County, Maryland was one of the birthplaces of stormwater management and green infrastructure. Yet, despite being a pioneer, in 2013 the county was far behind its goals to treat or manage stormwater under a state permit tied to the Federal Clean Water Act. Between 2004-2012, county officials had completed less than 1% of required stormwater treatment under the permit. By 2014, the county agreed to a new permit and began a transformation of its approach to stormwater, with plans to invest \$1.1 billion over a decade in projects that would create 5,000 local and regional jobs, revitalize neighborhoods, and deliver on its clean water commitments. In 2018, the county is on track to do so.¹

In the early 2000s, Washington, DC was in the water spotlight in the worst possible way – the city's water utility had hidden data that showed residents were exposed to dangerous levels of lead in drinking water for years.^{2,3} In stark contrast, today the rebranded utility, DCWater, has addressed the problem and put an advanced monitoring system in place to address lead—the monitoring system shows that the city has met lead safety standards since 2010. DCWater is now recognized for being one of the best-run water utilities in the nation and launched the first environmental impact bond in the country. That bond allowed private investors to fund new green infrastructure that treats the city's polluted stormwater runoff, to be paid back by the utility based on the successful functioning of the projects. And, the District's government has launched first-in-nation initiatives to stimulate the rapid development of private stormwater credits, the first price floor on privately-delivered stormwater credits, and new stringent requirements for stormwater treatment on hundreds of new developments happening across the city.

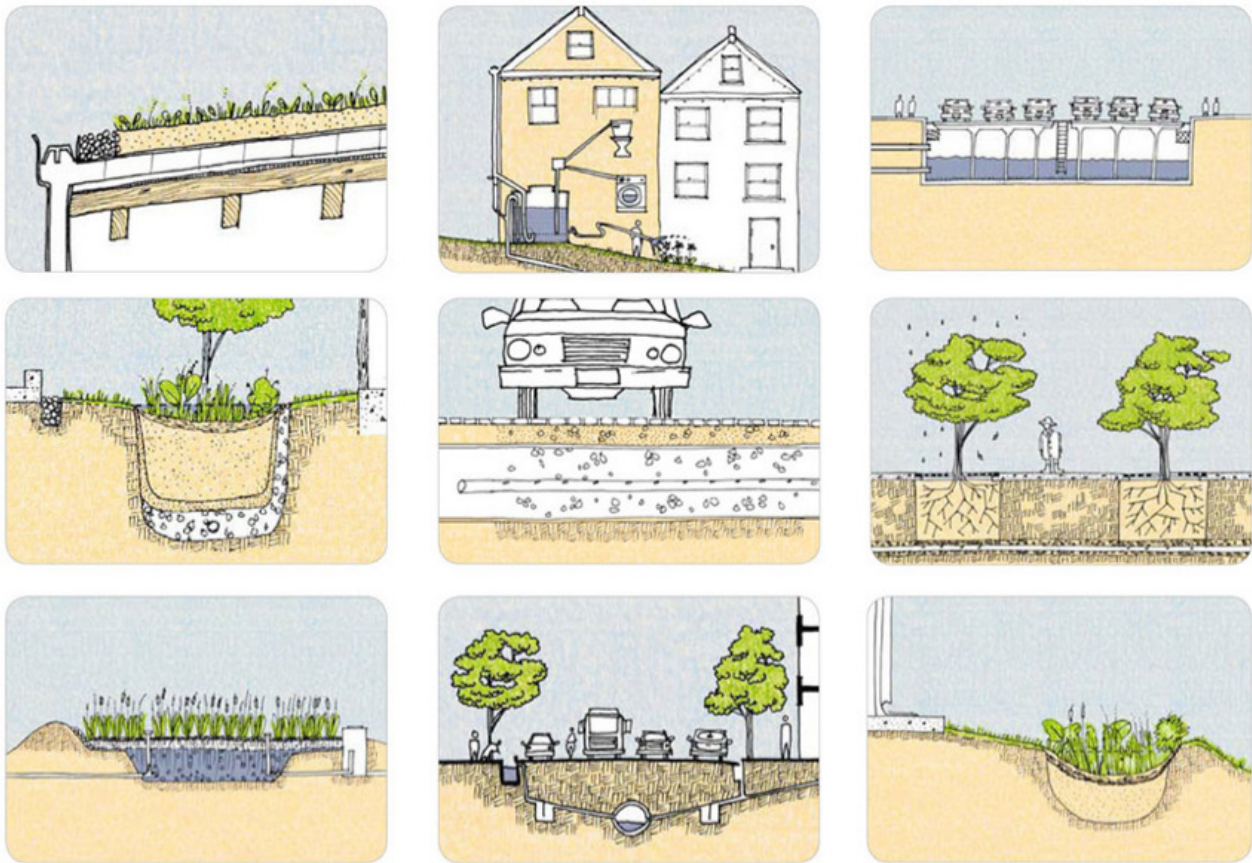
Montgomery County has lost its leadership role in stormwater work.

Although Montgomery County was one of the nation's first to adopt a stormwater fee in 2002⁴, and to adopt a 20% impervious surface treatment goal, it has also recently become the first county in Maryland to face a court-directed consent decree for failing to meet its obligations to clean up stormwater entering the Chesapeake Bay. The County's residents have seen stormwater fee rates rise by more than 1100% over 15 years, some of the highest stormwater project costs in the state, and administrative and reporting errors that left everyone thinking the county was even further behind on stormwater goals. In early 2018, Montgomery County cancelled dozens of expensive already-designed stormwater projects and suspended more than 40 additional designs. County Executive Ike Leggett used a line-item veto on the stormwater budget – the county's first in 25 years – and started a struggle to transform how the program works that will continue into the term of County Executive-elect, Marc Elrich, and a new County Council.

Montgomery County's request for proposals will not lead to a contract that is set up to produce the goals of cost-effective stormwater restoration work or faster project delivery. In addition, the county has missed opportunities to deliver secondary benefits and stormwater construction jobs for the county's diverse residents. We make recommendations that new County Executive Marc Elrich and the County Council should adopt to strengthen their program going forward. We suggest ways to lower costs, speed up delivery of clean water restoration services, and improve the environmental and social outcomes of its stormwater program.

While Montgomery County is no longer a national leader in innovative and effective stormwater treatment, it could be again, and officials there could build broad public support for sustained investments that would improve the local economy, environmental conditions and the health of Chesapeake Bay.

This paper reviews innovations and lessons learned in stormwater programs in Prince George's County and the District of Columbia and goes in depth to look at Montgomery County's current approach. We provide a detailed analysis of Montgomery County's 2018 proposal for new contracts with private restoration businesses.



*Simplified examples of green stormwater infrastructure projects, and innovative stormwater storage, being installed across the country.
© San Francisco Public Utilities Commission*

Introduction

Each time it rains in the Washington, D.C. area, stormwater flows across the surfaces of rooftops, parking lots, and roads, picking up pollution as it makes its way to the Chesapeake Bay. Those, and other impervious surfaces currently cover 39%, 11%, and 10% percent of DC, Montgomery County and Prince George’s County, respectively.⁵ Decades of this stormwater runoff and other pollution have negatively impacted the Bay, prompting responses from local, state, and national governments.

The Washington region is a hotspot for innovation in policy and initiatives designed to manage and reduce impacts on the Chesapeake Bay from this polluted stormwater runoff:

- Virginia has created market-based stormwater nutrient credit “banks” in every county in the state – the only state in the nation to do so.
- DC’s water utility, DCWater, established the country’s first “environmental impact bond” under which the private sector is helping to finance innovative stormwater work and gets an incentive if the work achieves more environmental gains than predicted.
- Maryland’s Department of the Environment established the first state water quality “Pay for Success” program where the government purchases environmental credits tied to measures of improved water quality.
- Prince George’s (PG) County, Maryland, has financed the nation’s largest environmental Public Private Partnership (P3), putting over \$100 million into a collaboration that is ahead of schedule to achieve stormwater treatment goals, while generating a high number of jobs for minority- or woman-owned local companies, and bringing religious institutions, shopping centers, and schools into the work of helping the Chesapeake Bay.

While there are a diversity of drivers behind water quality improvement activity in these jurisdictions, this report focuses on Municipal Separate Storm Sewer Systems (MS4) permits under the Clean Water Act. Montgomery and Prince George’s Counties operate under 5-year Phase I MS4 permits issued by the Maryland Department of Environment in 2010 and 2014, respectively. DC operated under an MS4 permit from 2004-2009 and a new permit covers the period from 2011-2016.⁶

These jurisdictions are using green infrastructure projects to achieve major components of their MS4 permit goals. Stream restoration, bioswales, low impact designs, and hundreds of other best management practices are all options that have a water quality benefit, and often many secondary benefits like recreational, property, or aesthetic. For example, Montgomery County has committed to use green infrastructure projects to achieve 60% of its MS4 permit requirements. Neither the location of those projects, nor exactly how they will be built, needs to be specified in advance—Maryland’s courts have confirmed this flexible approach.

These investments are of national significance. Through green infrastructure and related programs, Maryland’s counties will have spent more than \$1.3 billion in locally-generated funds to improve stormwater runoff and the health of the Bay over their current and just completed permit terms.⁷ For comparison, this spending in Maryland is greater than the combined Federal spending for all Bay-related conservation activities in the entire six-state Chesapeake Bay region from 2014-2016.⁸

Why is the Chesapeake Bay region different?

The innovation and successful environmental outcomes being delivered in the National Capital region are facilitated by many things, but two policy differences particularly set the area apart:



QUANTIFIED GOALS

In 2010, Maryland, DC, other Chesapeake Bay states and the EPA set clear, quantitative performance goals and deadlines. Those goals—called a “pollution diet”—involve reducing inputs of nitrogen into the bay by 25 percent, phosphorous by 24 percent and sediment by 20 percent by 2025. Even before the pollution diet was established, the region had been striving for quantified reductions in point- and non-point source water pollution for longer than almost anywhere else in the country through state or county policies, or driven by the Clean Water Act and Federal initiatives.



METRICS & TRANSLATION

Chesapeake Bay jurisdictions used the best available science and modelling to negotiate a ‘Rosetta Stone’ that translated a long list of water quality improvement activities to a singular unit: water quality improvement credits. Having a broad set of activities that are convertible into water quality goals gives state and local governments a great deal of flexibility in how the goals are achieved. Because any activity can be described in a single currency, it is possible to look for more efficient ways to meet stormwater goals or achieve them side by side with other public objectives, like job creation or farmland protection. There is still much more work to do to develop and unify different modelling approaches, but the Chesapeake Bay region is further along than other parts of the U.S.

Funding Stormwater-related Restoration Programs

Various stormwater fees are used to create the revenue needed to fund projects that improve water quality in Montgomery and Prince George's Counties and Washington, D.C. Similar fee systems are in use in dozens of places throughout the Chesapeake Bay region.¹⁰ In all jurisdictions, bond funding (i.e. debt) is also being used to finance more work today which will be paid back with stormwater revenue in the future.



Montgomery County

The Water Quality Protection Charge (WQPC) is an annual fee charged by the county to all properties – residential, non-profit, and business. The fee is approximately \$104/year for a single-family home and is set based on area of impervious surface and the type of property. The fees charged through this program have risen from \$3 million in 2004 to \$37 million in 2018, or more than 1100%. Most of the funding is not used for stormwater project construction, but for staffing, transfer to the general fund and the county's operating budget. In Fiscal Year 2018 (FY18), less than 15% of the fee went directly to stormwater projects.¹¹ Montgomery County's most recent 5-year budget for capital improvements for stormwater provided approximately \$247 million in funding. The county allows property owners to participate in the WQPC credit program¹² and receive a reduction of up to 60% of the fee if they complete onsite treatment of stormwater. In 2011, the county began using the fees to support bonds and is now planning to use them to support borrowing backed by EPA's State Revolving Fund.



Prince George's County

The Clean Water Act Fee includes an administrative fee to cover the staffing costs for the program and a scaled fee based on area of impervious surfaces. Total fees are much lower than in Montgomery County, ranging from \$33-\$62 per single family residential property, depending on its size.¹³ PG's Stormwater Management District Fund is also used to fund major reconstruction and flood control projects. The county collects about \$14.5 million in revenue from this clean water program. In its 2019 budget, the county dedicated \$44 million to watershed protection and restoration, a jump of 200% from the previous year. The county's 5-year capital budget for stormwater and related programs was \$247 million in FY19.¹⁴ The county has used the fees as the revenue to back significant borrowing from EPA's State Revolving Fund allowing more work to be funded quickly.

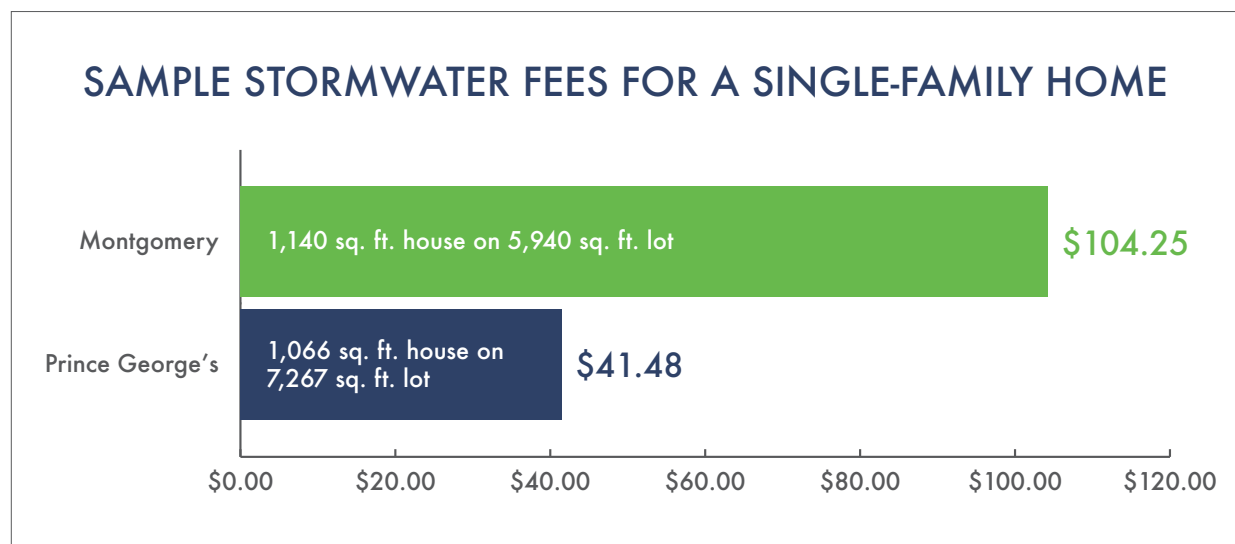


Figure 1. Montgomery County's Water Quality Protection Charge is significantly higher than Prince George's County's Clean Water Fee. These two properties show representative examples for two similarly sized single-family homes.

Washington, D.C.

The innovative and extensive stormwater-related work of Washington's [Department of Energy and Environment](#) and its water utility, DCWater, has received extensive national coverage. Washington charges a Stormwater Fee of approximately \$32/year for the average single-family homeowner, and higher amounts for commercial buildings and apartments based on impervious surface on the property. This generates approximately \$13 million in revenue to fund stormwater-related projects.

In 2016, DCWater partnered with Goldman Sachs Urban Investment Group and the Calvert Foundation to establish a \$25 million environmental impact bond to speed up the installation of green infrastructure. The partnership includes outcome payments such that if stormwater runoff is reduced by more than 41%, the investors get paid back an extra \$3.3 million and if reductions are less than 18%, investors have to pay an extra \$3.3 million.

A few highlights from the City include:

- A new Stormwater Retention Credit (SRC) program will stimulate rapid growth in the supply of water quality improvement credits by giving private investors in those credits greater certainty that their investments will have buyers. DC's "Price Lock" program provides \$11.5 million in city financing to purchase credits at fixed prices. The prices are expected to be below what real estate developers will pay, but high enough to create a price floor to incentivize more participants to build and register water quality improvement credits. Credit prices are set at \$1.95/year/credit in the upper DC watershed, with lower rates downstream, and at lower rates after 7 years.
- The city provides Aggregator Startup Grants of up to \$75,000 to help developers of water quality improvement credits finance project development costs associated with green infrastructure projects.
- DC's [RiverSmart Program](#) helps nonprofits, churches, schools and single-family homeowners to identify green infrastructure projects they could build on-site and provides a discount on annual stormwater fees once they are installed.

Innovative, creative approaches to deliver stormwater projects in the Washington Region

With hundreds of millions of dollars of taxpayer money going to stormwater programs each year, and ever-increasing amounts of development, common sense and fiscal responsibility should lead jurisdictions like those in the National Capital Region to find the most efficient ways to deliver water quality outcomes. Stormwater projects can be complex and long-term, exposing counties to risk and cost overruns. There are two innovative approaches that have been used in the National Capital Region and could be useful to Montgomery County. Pay for Success is a contracting approach that changes what the contractor is paid for in ways that reduce public risk and increase incentives for high and fast performance from contractors. A Public Private Partnership (P3) is a project delivery method that changes how a whole program is run in ways that offers flexibility, speed, and cost-savings to mitigate risk for local government and taxpayers.

Pay for Success contracting

Pay for Success is a new approach to contracting that was a [priority of the Obama Administration](#). In Pay for Success, all the risk is transferred to the contractor. In the Pay for Success contracting process (Figure 2), a government agency decides on the environmental or social goals it wants to achieve, and ways to measure the goals under a contract. The bidding process, contracts, and payments are then based on delivery of those outcomes. This approach is in contrast to traditional government contracting, which is based on paying for the construction activity (i.e. hours worked) as opposed to the desired outcomes themselves. Pay for Success approaches are already fostering an influx of private investment into public outcomes across the country, delivering a variety of environmental and

social outcomes at great speeds and at lower costs.¹⁵ They work best when local government is able to “let go” of controlling exactly how projects are carried out and where they are carried out, so that the contractors they hire have flexibility to find efficient opportunities for work that have a high chance of success. These approaches should be popular with the public because if outcomes are not achieved, taxpayers are not on the hook to pay for failed projects. Montgomery County’s 2017 experiment with a Pay for Success contract is described below. The county’s 5-year capital budget for stormwater and related programs was \$247 million in FY19.



Figure 2. Pay for success contracts require non-government funding to initiate and deliver pre-determined environmental or social outcomes, paid back by government when the outcomes are achieved.

Public Private Partnerships – P3

A Public Private Partnership (P3) is a long-term contract between a private party and a government to provide a public asset or service in which the private party bears significant risk and management responsibility, and payments are linked to performance.¹⁶ Compared to traditional contracts, the private partner has much stronger reasons to invest in and help achieve programmatic goals that are aligned with public agency goals. Also, the private partner has strengths that allow it to achieve goals that are more difficult for a public agency. For example, private partners may be better at securing innovative financing that allows more projects to be started quickly and they may be better at delivering projects faster. P3 partners share significantly more risk for programs than under traditional contracts, but less risk than in a Pay for Success program, especially around project social or environmental outcomes.

In the context of stormwater, P3 has been characterized as potential “privatization” if it were adopted in Montgomery County, but that claim is factually untrue. Delivery of Montgomery County stormwater projects is already done by the private sector. Private companies complete the designs for projects. Private companies compete for and carry out the construction activities. Private companies carry out maintenance activities.

Benefits of Pay for Success and P3s

Flexibility

The kinds of risks and options inherent in stormwater project portfolios are different than many other tasks county agencies complete, and lend themselves to the kind of flexibility that a Pay for Success or P3 approach can provide. Local projects frequently face crippling roadblocks like neighborhood opposition. For example, currently, it’s difficult – and expensive – to switch to a new site when a public agency is running project delivery and selection. The county might have to go through a new design contract. At the very least, staff time and costs have been sunk into community meetings. If the project falls through, taxpayers are on the hook to pay for the costs of switching to another project. In contrast, under these innovative contracts, the contractor is responsible for finding projects and moving them into construction. It’s the contractor – not the taxpayer – who pays for projects that do not move forward. And since delays are costly to these contractors, past experience shows they find new paths forward more quickly and nimbly than public agencies.

Speed

For public agencies, borrowing money through bonds comes with low interest payments. But, borrowing costs are often paid from the General Fund instead of directly from an agency’s budget. In contrast, private companies in these innovative contracts have to use private capital to get projects going and achieve success metrics before public agencies start paying them back. They either borrow capital from banks or receive direct private investment. In either case, they have a very strong incentive to complete their work efficiently so they can earn revenue and repay the bank or investor. When there is a need for speed – as in the case of Montgomery County, which is behind on achieving its permit goals – the county can turn these private sector incentives to the advantage of the taxpayer and the Chesapeake Bay.



Cost-effectiveness

A [2011 study](#) in Maryland found that stormwater project costs ranged from \$15,000 to \$220,000/acre to complete. Some Montgomery County stormwater projects have cost taxpayers between \$250,000-\$400,000 per acre to complete and the current list of suspended projects includes ones that cost more than \$700,000 per acre to construct. In contrast, Prince George's County's P3 is delivering its work at an average of less than \$50,000 per acre to complete. Pay for Success and P3 contracts establish fixed compensation for delivery of project outcomes, giving contractors a strong incentive to do cost-effective work and achieve lower costs over time. Montgomery County has as record of achieving the opposite – higher costs over time. Some advocates are concerned that this leads contractors to pick the cheapest projects to fund, such as those that do not have a lot of secondary benefits. However, there is little evidence that has happened in Prince George's County or other P3 and Pay for Success programs around the country. In addition, the county has shown how you can add additional goals – like local, minority jobs – to performance contracts and get contractors to optimize all sets of outcomes.

Prince George's and Montgomery Counties' Programs

Prince George's County Stormwater Public Private Partnership

Prince George's County began work under MS4 permits in 1993 and renewed its permit in 1999, 2004 and 2014.¹⁷ In 2014, Prince George's County began a dramatic effort to improve its programs to clean up its freshwater through better stormwater management and treatment. [Their new plan](#) proposed 15,000 acres of stormwater-related restoration projects to offset or treat the impacts from runoff by 2025, at an estimated cost of \$1.2 billion. And, the County committed to retrofit 20% of its impervious surfaces (6,105 acres) by 2019.

Recognizing the challenges of delivering this volume of stormwater projects so quickly, the County began looking at a Public Private Partnership (P3) through a Request for Qualifications in June 2013, and [signed a contract with Corvias](#) in November 2015.¹⁸ Corvias would manage a program and subcontractors to rapidly deliver 2,000 acres of completed stormwater projects in 3 years and expand that work to cover another 2,000 acres of projects, if it met success benchmarks for the first 2,000 acres. The initial contract cost the County \$100 million, or an estimated \$50,000/acre of stormwater credit.

Corvias has now completed construction on those 2,000 acres within the 3-year deadline, below the \$100 million budget, and is working with the county to complete a contract amendment for the next 2,000 acres. Some projects were completed for as little as \$26,000/acre and the program overall has achieved average costs of less than \$47,000/acre.

[The partnership](#) is not only revolutionary for the speed at which it is delivering completed projects, but also for the [social goals](#) built into the partnership. For example, Corvias is required to use small, minority- and woman-owned businesses for 30-40 percent of the project. In fact, the project has achieved more than double that goal, in part by [helping recruit and train](#) small minority-owned businesses who are new to this kind of restoration work. By 2018, more than 90% of the P3 contract was spent on local Prince George's County and nearby contractors and more than 87% of work went to minority- and woman-owned firms.

The P3 also requires Corvias to focus on restoration projects in lower-income neighborhoods, partner with churches and 501(c)(3) nonprofits, and deliver low-impact development (LID) projects. Corvias runs the program for a pre-negotiated fee (5%) that is a percent of the annual project budget, but another 5% of its revenue is tied to restoration project, hiring goals, deadlines and other social goals of the partnership.

While the P3 does not cover all of the 6,105 acres required under the permit, the partnership is meeting or exceeding the goals established for it. In late 2018, Prince George's County worked with the Maryland Department of Environment to amend its permit, allowing nutrient trading as a new tool to help the county catch up on remaining requirements to treat the equivalent of 20% of its impervious surfaces that were not part of the P3 approach.

Under the P3, the county and its partner can focus on projects that have the best mix of values, and also identify and sketch out designs for hundreds of future projects. The projects that the partnership selects and builds are those that get the best value in water quality credits, but also educational value, social and economic value, community appeal and cost effectiveness.

If the second round of the P3 is successful, the county will likely have delivered a larger quantity of impervious treatment projects more quickly than any jurisdiction in the state or country, and done so by simultaneously achieving social and economic goals that win the program important public support.

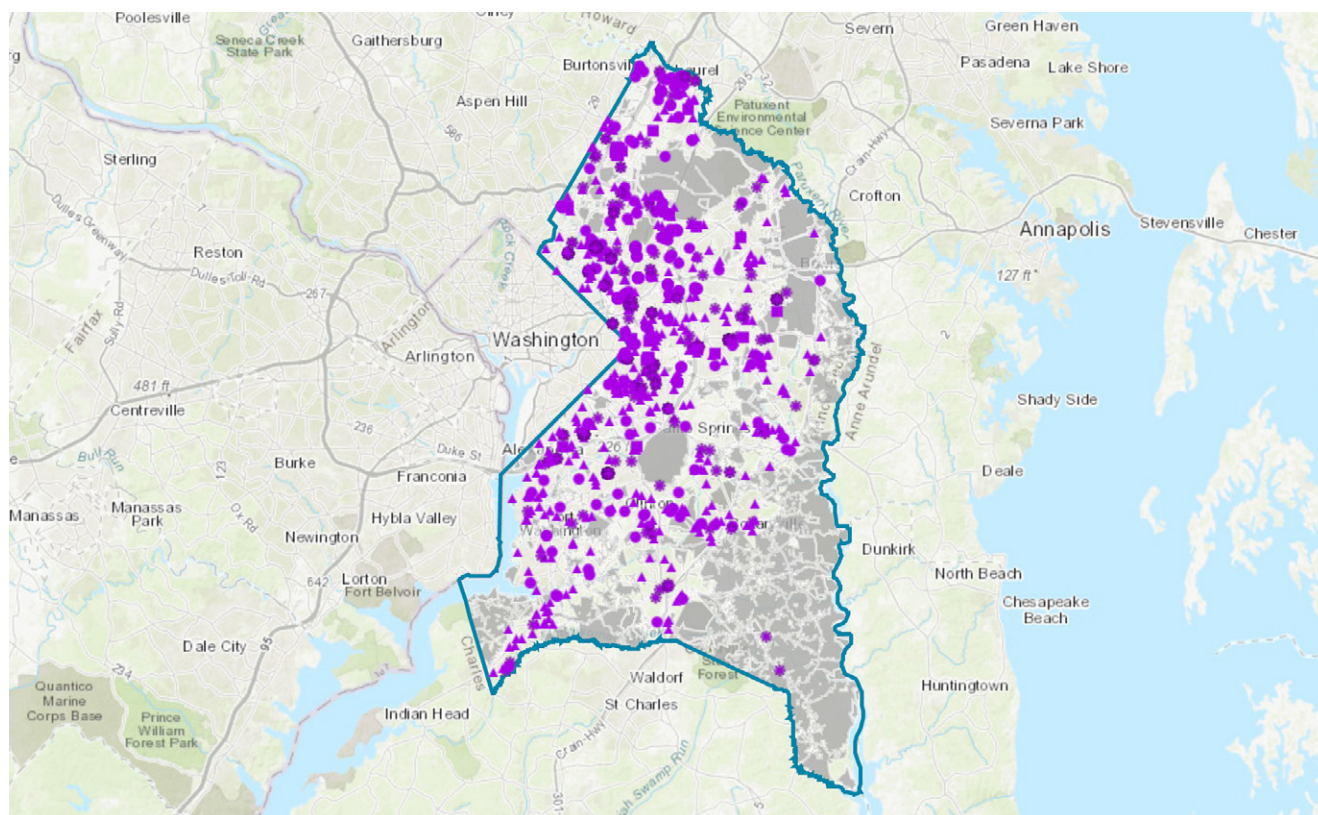


Figure 3. Corvias and Prince George's County have produced an interactive map showing the locations of 93 completed stormwater projects, and more than 100 additional projects in design or that could be initiated in the future.

Montgomery County's evolving program

Before 2017, Montgomery County used a traditional approach to contracting for its stormwater programs. This involved a heavy focus on projects on county-owned land. County planners and designers played a controlling role in identifying and selecting project sites. And the county used separate contracts for the design, construction and maintenance of each project (Figure 4). Going through these multiple rounds of contracts could add months or years to project timelines, which could result in costly disconnects between different stages of a project. A designer might plan a project in ways that were difficult, expensive or impossible for a restoration firm to build. A restoration firm might build something that would be costly to maintain. Since these were separate contracts, there was less incentive and ability for firms under contract for one stage to make their work product easy for the next contractor to work with.

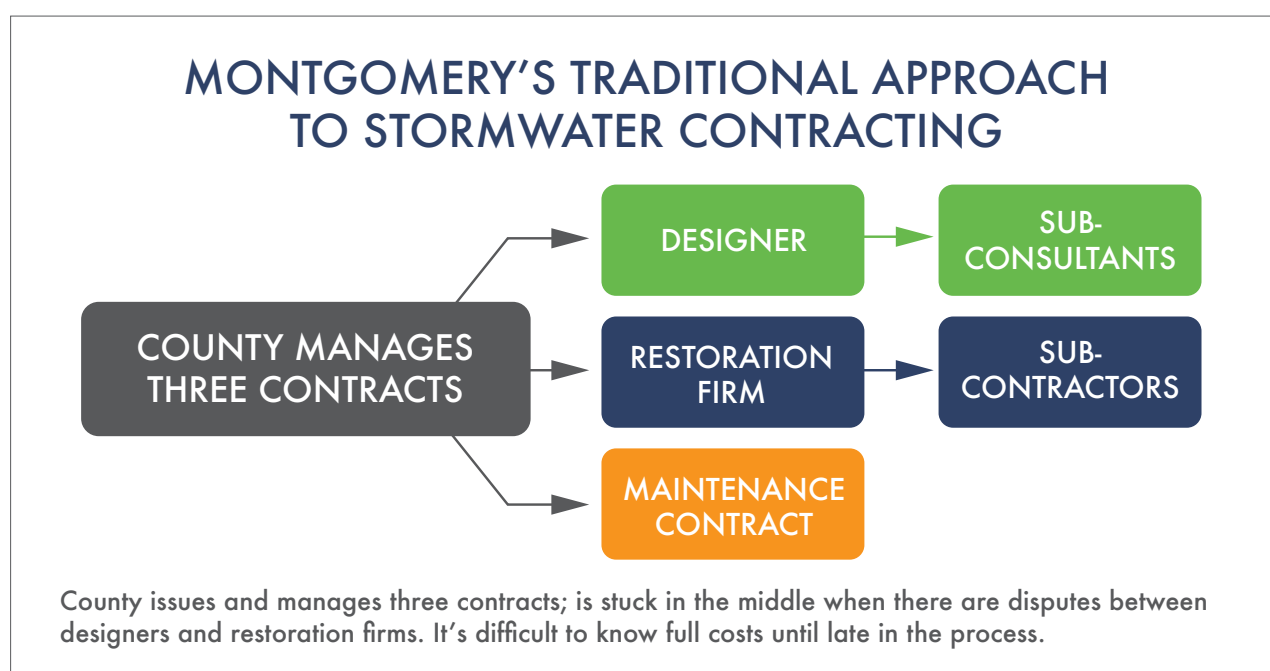


Figure 4. Previously, Montgomery County used separate contracts and requests for proposals to cover stormwater project design, construction and maintenance.

By 2014-2015, it was clear that the county was behind on its goals and its permit was under litigation. By 2017, the county was past the term of its permit (2010-2015) and moving to reach a consent decree with the Maryland Department of Environment for violating its permit requirements.¹⁹ Projects were going past deadlines and budgets, and the county staff had made math errors that resulted in a significant undercounting of its progress.

2016 Montgomery County Experiment with Pay for Success

This situation shook the faith of some in the executive branch of county government, including the County Executive. In 2016, the executive team started work on a new approach to contracting that structured the payments as Pay for Success, focused around delivery of water quality improvement credits. Under its [Request for Proposals](#), Montgomery County selected two contractors to deliver completed stormwater projects. Whereas many Pay for Success contracts tie only 40-60% of payments to successful outcomes, Montgomery County made 100% of payments linked to success. Contractors would be paid upon successful State of Maryland documentation or certification of water quality improvement credits and meeting the terms of all permits. One contract was won by a national leader that specializes in wetland and stream restoration – [RES, Inc.](#) Through its subsidiary, [Angler Environmental](#), RES proposed to deliver 120 acres of credits for \$4.49 million (\$37,444/acre). [Soltesz, LLC](#), a successful DC-region engineering firm, won the second contract for \$2.3 million in restoration of 65 acres of credits (\$35,380/acre). While Soltesz, Inc. made a [mistake that resulted](#) in a small number of

common fish and turtles being killed, it's worth noting that **no public funding** has yet been paid under the contracts as of publication of this report. Public funds won't be expended until faults are fixed, permit conditions are met, and the state and county certify the water quality improvement credits. The contracts did not include any extended maintenance on the projects.

Given the county's existing progress in completing partial planning and design on more than 40 stormwater projects, it is unclear why the county didn't repeat this contracting process for more of those projects, instead of using the Design-Build-Maintain contract (described below). A Pay for Success contract is a targeted solution when the project locations and designs are already known and an agency is just looking for benefits in lower cost of delivery, faster project completion and structures that lower risks to ratepayers from project failure. Assuming these two projects are successful, they will have delivered water quality improvement credits at a lower cost than many or most of Prince George's and Montgomery County's other projects.

2018 Montgomery County's New Project Delivery Method

For the 2018 budget, with the county now on track to complete all its requirements under the 2010 permit, County Executive Leggett [proposed to eliminate \\$240 million](#) from the stormwater capital budget, terminated dozens of projects and suspended many others ([see map](#)). They proposed using a new approach to project delivery to carry out the stormwater management expected to be needed under a new permit (see below). The County Council pushed back and a [compromise was reached](#) that resulted in approval of \$43 million in stormwater work over the next 6 years and included some of the suspended projects on the list of potential projects that might get built, thus creating a path forward for the county.

On October 4th 2018, Montgomery County published a [Request for Proposals](#) seeking 530 acres of water quality improvement credits which will help the County achieve the 5% of additional impervious surface treatment it may need under a new 5-year permit with the state. The contract provides a price of between \$35-\$40 million (i.e. a cap of up to \$75,000/credit) to be delivered over 5 years (Figure 5).²⁰ Those costs were based on an analysis referenced in the amended RFP that found costs of \$61,000-152,000/acre, depending on the category of project. It includes 10 years of maintenance responsibilities, with maintenance costs capped at 1-5% of project costs.

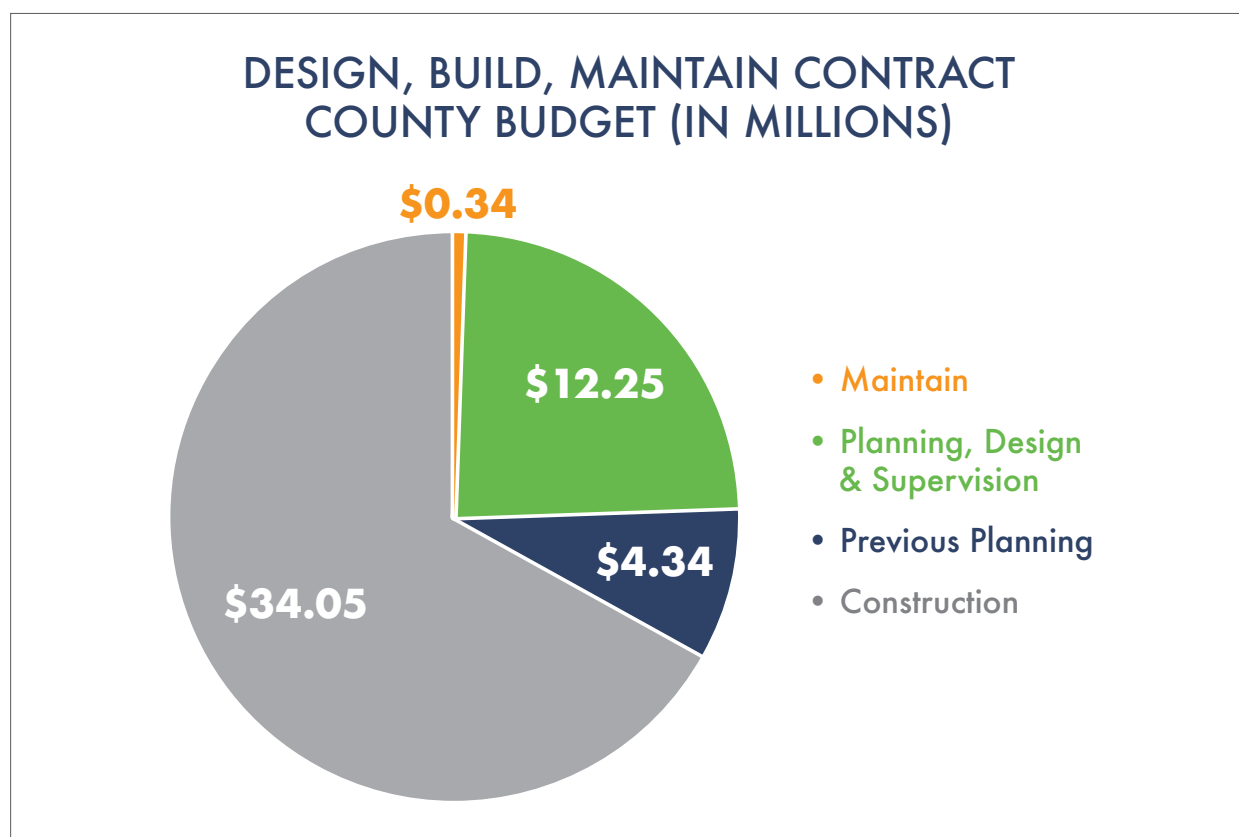


Figure 5. The estimated budget for Montgomery County's Design Build Maintain contract includes \$34 million for construction, and \$12.25 million in planning, design and supervision costs by the County. \$4.34 million has already been spent on design for 40 projects.

The contract is an improvement from pre-2017 contracts because it bundles design, planning, permitting, construction and maintenance activities into a single contract. Doing so should improve the likelihood that designs can be built and stormwater facilities can be maintained. By bundling these services together, the county is somewhat more likely to get effective projects that can be completed within its budget.²¹

However, despite the debate about the direction of the program triggered by County Executive Leggett's veto, the new round of contracting will operate a lot like earlier rounds. The county missed many opportunities to deliver a stronger stormwater management program, including lessons it could have taken from Prince George's County or Washington. In particular, we conclude that there is little about the proposed contract structure that makes the program likely to operate as a Public Private Partnership (P3) or with the incentives of a Pay for Success contract. Each of those terms have been used to describe Montgomery County's interest or future direction in the past, but are not reflected in the proposal request.

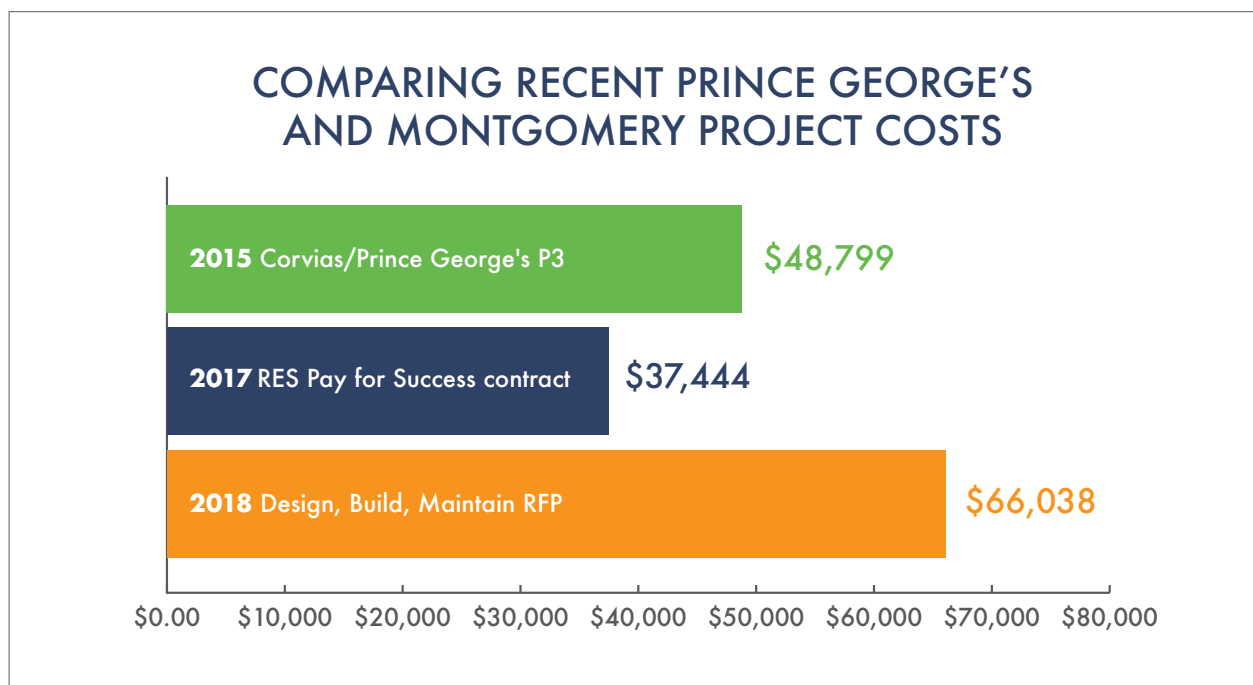



Figure 6. Per acre of water quality improvement credit, Montgomery County's 2018 request for proposals suggests it will have much higher costs than other innovative contracting models. (If the contract goes to a bidder closer to \$40 million, the average per acre costs would exceed \$75,000/acre). Average project costs under the P3 are likely significantly lower than \$48,799 because Corvias handles administrative and communications work that the County does not have to carry out and because costs include early planning costs on approximately 100 future projects whose acres are not included in this calculation.

Some of the differences between P3/Pay for Success and the 2018 Request for Proposals (RFP) are a result of direction imposed on the contract by the County Council during deliberations over the budget amendment that funded it and that took place between May to July, 2018. For example, the County Council added the requirement that at least ten of 40 already-designed projects listed in Appendix A projects be selected.²² The Council also required that the county retain its authority to impose change orders on projects that would alter or expand their budgets. One of the greatest potential efficiencies that comes from having a project partnership is that private companies can discover significant cost and design efficiencies by picking project locations. The RFP prevents them from doing so.

Table 1 highlights some of the major differences between Prince George’s P3, Montgomery’s Pay for Success contract and its current approach to the Design Build Maintain contract, and some of those issues are also discussed in more detail below.

	PUBLIC PRIVATE PARTNERSHIP	PAY FOR SUCCESS CONTRACT	DESIGN-BUILD-MAINTAIN
	PRINCE GEORGES’ P3	2017 PFS CONTRACT IN MONTGOMERY COUNTY	2018 MONTGOMERY COUNTY CONTRACT
Water quality improvement credits (Acres)	2,000 (+2,000)	185	530 (+1,000)
Anticipated cost per acre	Middle. \$48,798	Lowest. \$37,444	Highest. \$66,037
Is remuneration linked to performance?	Yes. Through annual planning, budget books, performance deadlines and measurement of socioeconomic goals there are strong connections to performance.	Yes. 100% paid on certification of credits by the State of Maryland	No. Traditional construction payments through monthly invoicing although smaller design cost payments are based on progress
Stakeholder communication responsibilities	Yes. Strong contractual obligations to establish and maintain neighborhood relationships and accessible public reporting	No accessible public reporting, unclear communications responsibilities	Less clear. Few clear requirements for accessible public reporting. Appears that county retains lead role in public outreach and contractor is supposed to support them
Is there risk transfer from taxpayers to private sector?	Significant. Traditional contract insurance and payments are strongly and clearly tied to deadlines, project goals and measurable socioeconomic goals (e.g. jobs, trainings, etc.). Performance bond is 100% of contract costs.	Significant. Traditional contract insurance and no payments until projects certified by state.	Little. Traditional contract insurance. There is a \$10 million performance bond, but its not clearly linked to project performance.
Long-term contract?	Yes. 30 years	No.	No. 10 years
Hiring minority- and woman-owned firms?	A minimum requirement of 35%, but achieved more than 80%. Local spending exceeded 90%.	Must meet goals of 22% or more. No local hiring/spending requirement.	Must meet goals of 22% or more. No local hiring/spending requirement.
Project locations	Public or private land	Public land	Primarily public but private allowed
Opportunity to adjust project selection to optimize outcomes, respond to stakeholder feedback	Yes, Corvias manages a long list of ‘in design’ and ‘in planning’ projects, allowing it and the County to focus on projects that will have high success rates and secondary benefits.	No. Project locations prescribed through the contract.	Less. A minimum of 10 projects, planned in advance by the County, are required. Remaining project locations and budgets would be prescribed in the contract.
Reliable public cost	Yes. Fixed project book budgets and County and partner can’t change costs except for Force Majeure events like natural disasters.	Yes. Project costs are fixed up front, without provisions for changes in the contract (except Force Majeure events like natural disasters).	No. Like traditional contracts, the County can use ‘change orders’ to redefine the scope and components of individual projects and increase budgets, without constraint.
Incentives to meet deadlines	Yes. The contract was set up to incentivize Corvias to exceed goals by Year 2, which triggered their eligibility for a second round of work under the contract (now being negotiated). And includes pre-determined damage payments to the County if individual projects do not meet deadlines.	Yes	Partial. There is no specific incentive for meeting deadlines. A second phase of work is discussed but there are no incentives proposed in Phase 1 to incent progress. Includes disincentives, like PG County, of pre-determined daily damage payments for delays.

Under the Request for Proposals – and compared to P3 program delivery or performance contracts like Pay for Success – there is little risk sharing, management responsibilities are limited because the county has already selected many of the project locations and paid for the designs, and payments are not linked to performance. These contrast with the County’s 2017 pilot contracts for 185 acres of projects and with Prince George’s County’s P3 program. We see the following deficits in the County’s proposed Design-Build-Maintain approach:

 **No incentive for stronger environmental performance**

Montgomery County’s stormwater contract could be operated in two ways to deliver more benefits. First, during the process of selecting a contractor, the RFP could have used points assigned through the ranking to reward companies who describe secondary environmental benefits that would come from the projects– for example, more wildlife habitat, public recreation benefits, or improvements in tree canopy. Alternately, the RFP could give stronger scores to proposals that have cost control structures that allow money saved during construction to stay with the County for implementing future stormwater improvement projects. The RFP does neither.

 **Missed opportunity on local and minority jobs**

Prince George’s County built exceptional goals associated with the percent of contract work completed by local companies or minority or women-led firms. In fact, Corvias and Prince George’s achieved local hiring and spending that was twice as high as their goal (Figure 7). For example, 56% of the work hours under the projects were carried out by Prince George’s County residents. In contrast, Montgomery County’s program is designed to achieve only the county-required minimum for minority and women-owned businesses although very small increases in proposed work by minority- and woman-owned businesses provides significant bonus points for applications.

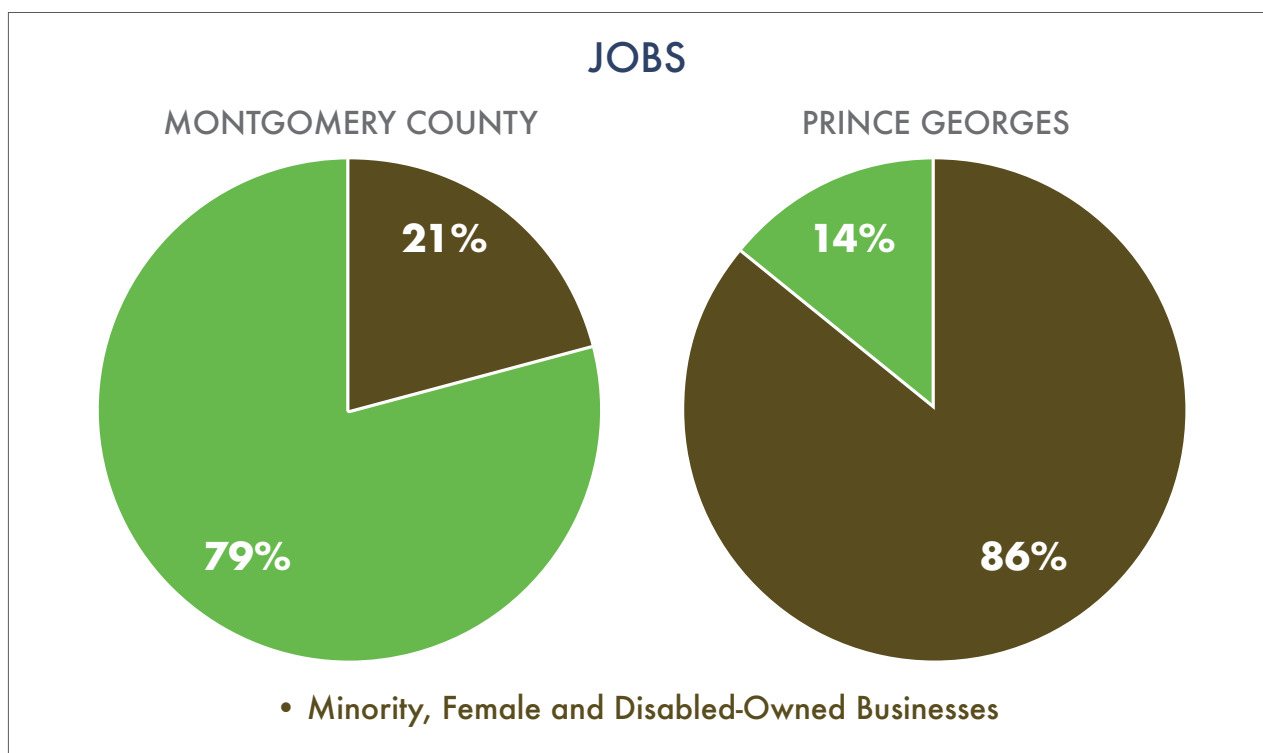


Figure 7. Prince George’s County has achieved a contracting goal of sending more than 86% of its work under the Public Private Partnership to firms owned by minorities, women and people with disabilities.



Missed opportunities to incentivize speed

Montgomery County is the only jurisdiction in the state operating under a consent decree – a legal settlement between the state and county. It's therefore unusual that the RFP didn't include criteria that would speed up delivery of stormwater projects to ensure they would not get behind under a new permit. Prince George's County built a disincentive for delays into their contract – Corvias must pay predetermined "damage" payments to the county for each day that individual projects are behind schedule.

The proposed contract provides 5 years for delivery of projects that are already years behind schedule, many of which already have completed designs. In theory, it should be possible to complete these projects in much less time than 5 years. The county's slow approach to securing this 530 acres of water quality improvement credit is also likely to affect environmental progress in the county and state because moving faster would prove that they and other counties could do more. Prince George's County completed approximately 2,000 acres of projects – from scratch—in 3 years and used the incentive that completing those projects on schedule would unlock a second round of work, without a new round of bidding. Montgomery County's contract talks about a second round, but not with enough specificity or commitment to incentivize the fast, successful delivery of the first round of projects.

There are also two more options that Montgomery County could have used to incentivize more rapid progress on improving water quality. First, the county could have included the option for a small payment bonus on the contract for meeting certain deadlines. DCWater used a provision like this in its Pay for Success program for green stormwater installations financed by its [environmental impact bond](#). Second, the County could have included criterial scoring that would have given more points to applicants who proposed faster approaches to complete projects. Instead, the county contract will simply pay monthly invoicing for work performed on individual projects, up to the cost cap on those projects.



Weak application rankings system

Montgomery County's RFP proposes one round of proposal scoring based on the text of the proposals and a second round with interviews. However, the RFP includes few criteria that will create much transparency into how the County decides among proposals. Financial strength of applicants is only given 30 points of 500 (6%) and the largest category of points (120 or 24%) is assigned to a nebulous group including almost every aspect of the proposal. There are no points assigned to cost-effectiveness or cost-savings features of proposals, exceptional environmental performance, or narrative that explains the risk-sharing and risk management components of the proposals.



Lost chance for cost savings

In 2017, Montgomery County experimented with innovative Pay for Success contracts for two stormwater projects, which were delivered for less than \$40,000/acre of impervious surface credit. Prince George's program has achieved an average credit delivery of less than \$50,000/acre for more than 90 projects. Montgomery's new RFP starts with a high bid incentive by putting the request for proposals out at an estimated \$65,000-\$75,000 credit cost. There are a number of structures the county could have used to encourage cost savings to be returned to it or put into more complex and valuable projects. For example, provisions that would allow the successful bidder to retain a small percent of cost savings from less expensive construction.

 **Limited opportunity to improve public communications**

The stormwater fees paid by Montgomery County residents have already increased by more than 1000% over 15 years and there is local opposition to some of the projects that have been built or proposed. Some political candidates even jokingly described projects as “pits of death.” One of the opportunities a new contract allows is to create a new strategy around communications with residents and ratepayers. In the Montgomery County proposal request, applicants will be scored on their outreach and communications plans, but elsewhere it requires the county rather than contractor to develop communications plans. And there are no requirements for written communications with the public that would be easy for the county’s diverse residents to understand. In contrast, Prince George’s County and its partner, Corvias, provide a dedicated website, a dashboard with data on project progress, an interactive map of all planned, designed and potential future projects, and progress reports geared toward the public. In general, private partners in P3s have strong incentives to demonstrate and report on the effectiveness of their partnership. As a result, P3s provide extremely strong reporting and monitoring data that is geared toward multiple audiences. Local agencies get the technical information they need to oversee and coordinate their program. Ratepayers and political leaders get easy to understand reports, websites and benchmarking that can identify and help the partnership correct program weaknesses. All of that plays an important role in building long-term public support for the program.

A large, stylized leaf graphic in shades of blue and green, positioned on the right side of the page. The leaf is oriented vertically, with its base at the top and its tip pointing downwards. The background is a solid dark blue color.

RECOMMENDATIONS FOR
**MOVING
FORWARD IN
MONTGOMERY
COUNTY**

Montgomery County has lost its leadership on stormwater management and innovative approaches to green infrastructure. However, it can regain its reputation as a leader in this work.

Montgomery County was the first jurisdiction in the state to commit to treat 20% of its impervious surfaces and should remain a progressive county in negotiating higher targets with the Maryland Department of Environment and Governor Hogan's administration. It can only do that if the county becomes more successful at rapidly meeting existing permit requirements, continuously innovating in how efficiently it delivers projects, and more effectively documents progress for the public in ways that are easy for all residents to understand and trust.

New County Executive Marc Elrich has spoken about the need to look for the biggest sources of stormwater pollution to try to focus future stormwater investments where it matters. Executive Elrich will have the chance for his administration to lead development of new watershed planning and negotiation of a new permit in 2019.

Recommendations to new County Executive Marc Elrich:



Use the Request for Proposals to negotiate a stronger risk-sharing partnership with the successful bidder.

While the RFP doesn't include many of the effective attributes of other program delivery methods and contracts, it also doesn't preclude two willing partners from building some of those elements into the contract. For example, Montgomery County could make a clearer commitment to contract with the winning bidder on the second, hypothetical round of projects, if the bidder meets certain performance criteria.

The proposal scoring system leaves enormous discretion to the county in selecting a winning bidder. The county's Department of Environmental Protection might be able to secure stronger project outcomes, commitments to outreach or additional social benefits through commitments the bidders make themselves in proposals. As long as a final contract includes those commitments, the county could strengthen this initiative.



Get involved in the contract award process

Bidders on the contract not only have to choose ten projects from the county's list of more than 40 suspended projects, but they have to explain why they aren't choosing some or all of the remaining 30 projects. The unwritten impression this language gives is that the county will prefer bids from companies that only or mostly choose the county-designed projects. This would be a mistake because some appear unnecessarily expensive and because many are uncreative stormwater pond projects with few secondary benefits. County Executive Elrich's DEP director or senior staff should get involved to make sure bidders who identify competitive low impact development and stream restoration projects are given fair consideration.



Invest in a project partner and in DEP staff or consultants who focus on improving the public communications around the successes of the stormwater program.

Better stories about completed projects are critical to the public's understanding of what they get for the fees they pay. And information about local jobs and ones focused on woman-owned and minority-owned firms are just as important as the clean water benefits.



Create real risk transfer: Give the winning bidder room to design and implement new projects that are not on the Montgomery County's list of suspended projects.

The best opportunities for creativity, innovation and cost-effectiveness may come from the new projects that bidders propose. However, if county planners are given too much discretion to prescribe details or micromanage project design, the county is unlikely to find better outcomes or costs from these new projects. Trust that the experts hired by the county know what they are doing, and put more of the risk on them through the triggers for payments. County Executive Elrich's senior cabinet staff likely need to work directly with the winning bidder to make sure that staff are giving them the room they need to innovate.



Consider a Public Private Partnership for a new round of projects or maintaining the old ones.

Considering the incoming administration's goals, it's hard to see why the Executive and Council wouldn't want to consider the P3 model that Prince George's County is using, for its future work. Doing so could allow the Executive to set ambitious local hiring goals, stronger recreational or educational benefits of stormwater projects or ecological benefits to important stream "greenways" in the county.



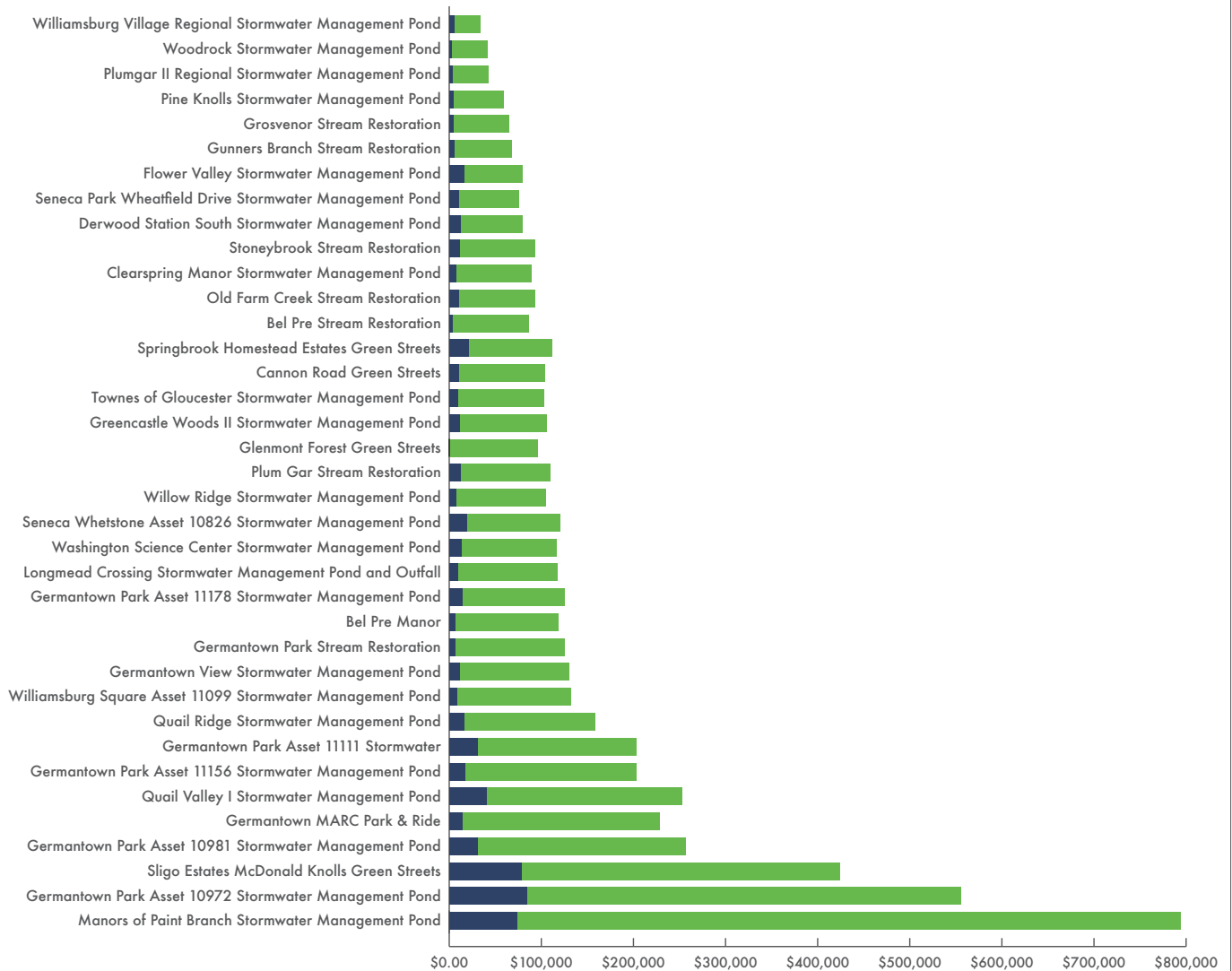
Lower resident's stormwater fees, or justify them.

The county put the 10-year cost of maintaining the 530 acres under the 2018 contract at 1% of project costs. And with a budget of up to \$40 million, that is \$40,000/year. Assuming similar construction and maintenance costs for the ~4,000 acres of water quality improvement credits already built suggests the county needs less than \$2 million/year to maintain these credits. We believe the new administration should negotiate higher targets for treating impervious surfaces in a new permit, but if that is not a priority, and the county thinks its work on impervious surfaces is done, it should consider lowering the fees.

Appendix A

This chart shows the reported costs for design (blue) of the approximately 40 suspended stormwater projects that Montgomery County has not built, but are included as potential projects in the 2018 Design Build Maintain request for proposals. The estimated construction cost (green) and Water Quality Improvement Credit acres is included in the proposal request materials from estimates made by the designers. This chart shows the average per acre cost, which for most projects greatly exceeds the average cost of Prince George’s County projects and of Montgomery County’s 2016 projects.

AVERAGE PER ACRE COSTS OF POTENTIAL MONTGOMERY COUNTY PROJECTS



Sources

- ¹ www.cbf.org/document.../county-stormwater.../Prince-George-s-County-Packet1f49.pdf
- ² <https://nextcity.org/features/view/the-poisoned-city-flints-water-and-the-american-urban-tragedy>
- ³ <https://wtop.com/dc/2016/04/flint-d-c-s-drinking-water-crisis-even-worse/>
- ⁴ [First proposed by County Executive \(then a Councilmember\) in 2000; now one of 65 such stormwater utilities across the Chesapeake Bay states.](#)
- ⁵ Each jurisdiction also has policies and programs in place to deal with new construction. For example, whereas DC allows real estate developers to use purchased stormwater credits from other locations in the District, Montgomery County focuses on on-site treatment much like the Army Corps did for wetlands in the 1970s, developed through a “Stormwater Management Concept” and Environmentally Sensitive Design Credits. In some cases, Montgomery County also lets developers pay into the county’s stormwater fund through an in lieu fee.
- ⁶ Both DC and Montgomery County’s permits are beyond their term, but this is relatively routine in stormwater permitting and the goals and requirements of the expired permit remain in effect while new ones are negotiated.
- ⁷ <https://conduitstreet.mdcountries.org/2018/06/01/maco-submits-comments-on-phase-i-ms4-permits/>
- ⁸ <http://www.cbf.org/about-cbf/locations/washington-dc/issues/federal-funding-for-the-chesapeake-bay-program.html>
- ⁹ However, Maryland, unlike Virginia, complicates the translation of stormwater treatment goals and permit requirements by having water shed implementation plans and impervious treatment goals that are not as well calibrated.
- ¹⁰ [Choose Clean Water Coalition – Paying for Stormwater Management in Chesapeake Bay Communities: Policy Recommendations](#). 2017.
- ¹¹ Seventh State <http://www.theseventhstate.com/?p=9926>
- ¹² [Follow this link](#) to show how a property could get a credit.
- ¹³ <https://www.princegeorgescountymd.gov/276/Fee-Structure>
- ¹⁴ <https://www.princegeorgescountymd.gov/2417/2019-Budget-in-Brief-PDF>
- ¹⁵ Environmental Policy Innovation Center. 2016. [Nature, Paid on Delivery](#)
- ¹⁶ World Bank. [Public Private Partnership Legal Resource Center](#)
- ¹⁷ <https://www.princegeorgescountymd.gov/293/NPDES-MS4-Permit>
- ¹⁸ Corvias Solutions is a subsidiary of [Corvias Group](#), which was founded in 1998 to focus on improving military housing but has since expanded to work with higher education, local government, and environmental restoration work.
- ¹⁹ In 2015, with litigation ongoing, the county has delivered only 1,918 stormwater credits, about half the permit requirement, and by 2018 when the consent decree was signed, the County had caught up to 2,927 impervious acres restored, with approximately 850 remaining. You can find the [consent decree here](#) and a [2018 update from the county here](#).
- ²⁰ Additional contract-related files can be found at <https://www.montgomerycountymd.gov/DEP/Procurement/1088211-DBMforMS4Credit.html>
- ²¹ Maryland is one of only 29 states that allows Design-Build contracting at all, or for the process to be widely used by local jurisdictions <https://dbia.org/advocacy/state/>
- ²² The existing data suggests that bidders will be better off selecting the ten projects with the lowest estimated per acre construction costs (Appendix A), which would cost \$13 million to construct and provide 265 acres of impervious surface treatment and then propose an other 265 acres of new projects which they believe can be designed, permitted and built within the funding available under the contract. Those projects include three stream restorations and seven stormwater management pond retrofits.

