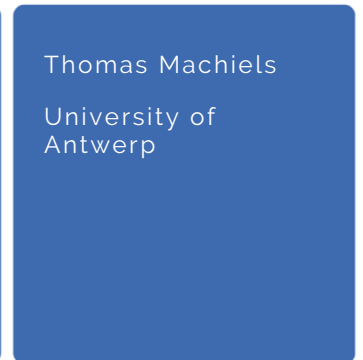
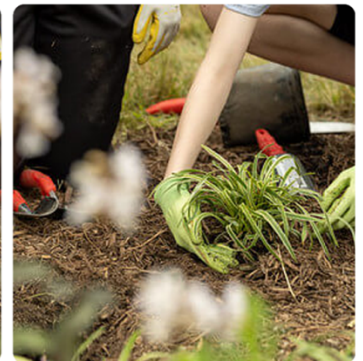


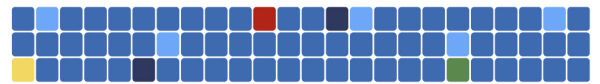
Clean Water Partnership

A community-based public-private partnership in Prince George's County (USA)

CLIMATEFIT International best practice factsheet

Case ID: 02





Summary

In 2014, Prince George's County faced the regulatory challenge of retrofitting uncontrolled impervious surfaces by 2025 to improve water quality and reduce polluted stormwater runoff into the county's rivers that flow into the Chesapeake Bay. The county partnered with the construction firm Corvias to initiate The Clean Water Partnership (CWP), a design-build-operate-maintain community-based public-private partnership (CBP3) with the aim of retrofitting 4,000 acres of impervious area through green infrastructure. The CWP is a novel model that integrates environmental, social, and economic impact performance targets, which were successfully achieved during the program. The model emphasizes a community-driven procurement process and includes a pay-for-performance element, with provisions for extending the private partner's contract upon achieving community impact performance targets alongside stormwater performance targets. Funding for the Clean Water Partnership comes from government agency grants and the county's Watershed Protection and Restoration Fund. The Fund is supplemented with bond proceeds from general obligation bonds and loans from the Stormwater State Revolving Fund. Incomes from the Clean Water Act Fee levied on private property owners are used to repay the bonds and loans.

This innovative approach allows for the accelerated implementation of green infrastructure projects at reduced costs while fostering local economic development through the engagement of the local workforce, and local, small, and minority businesses. This model highlights the effectiveness of shifting project delivery risks to a private partner, and of combining public and private resources for sustainable water management solutions. The CWP model may successfully be applied in other contexts under the conditions of early outreach and education about CBP3, and a long-term dedicated funding mechanism.

Keywords: community-based public-private partnership (CBP3), water quality, Clean Water Act Fee

Actor interviewed: Managing director at Corvias Solutions.

Cover photos: © Corvias Infrastructure Solutions (CIS)

Further reading: [Prince George's County's Approach to meeting regulatory stormwater management requirements](#)

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Best practice information card

Table 1. Clean Water Partnership. Information card

Location	Prince George's County, Maryland, USA
Population size	957,767 (2021)
Project area size	4,000 acres – 16.19 km ² spread across the county (retrofit impervious surfaces targeted)
Area type	Much of the county are urban and suburban communities with impervious areas (buildings, roads, pavements...)
Climate challenge	Climate changes lead to increased precipitation, leading to more stormwater runoff of untreated stormwater and consequently increased flooding and water pollution. More polluted water from streams and rivers flows, including those of Prince George's County, flow into the Chesapeake Bay due, the largest estuary in the USA that is ecologically and economically important.
Key Community System(s)	Water management, health and human well-being, local economic systems
Objectives	Reduce stormwater runoff and decrease water pollution in the county's three main rivers, while promoting social and economic development within the county's community
Climate challenge solution	Retrofitting 4,000 acres (total county target is 15,000) of untreated impervious areas with green infrastructure ¹ .
Key benefits	Improve water quality by removing pollutants. An accelerated implementation of green infrastructure stormwater improvement projects at reduced cost. Creation of green jobs by subcontracting county-based firms, with a focus on local, small, and minority businesses.
Implementation status	Since 2014 (implementation ongoing since 2015).
Investment volume (€)	\$272.7 million (last update: January 2024)
Key financing barriers	Lack of public funds because of the investment size and short timeframe to meet mandatory targets, despite the county having a steady source of funding through its Clean Water Act fee.
Financial model	CWP is a design-build-operate-maintain community-based public-private partnership (CBP3) with environmental, social, and economic impact performance metrics, a community driven procurement process, and a pay for performance element with the possibility to extend the private party's contract if initial targets are met. Funding for the CWP comes from government agencies grant proceeds, public activity bonds (purchase by private investors) issued by the county, and a Clean Water Act Fee.
Financial sources	Public: government agencies Private: asset owners/institutional investors, insurance companies (purchase bonds); property owners (households)
Financial instruments	Blended finance: Community-based public-private partnership (CB3) Debt: general obligation bond Fee/user charges: property-related fee (Clean Water Act Fee)

¹ Green infrastructure best management practices include bioretention gardens, bioswales, outfall protection, permeable pavement, pocket sand filters, pond retrofits, regenerative step pool storm conveyance, stream Restoration, submerged gravel wetlands, tree box filters tree planting, wet swales

Overview and timeline

The Chesapeake Bay is the largest estuary in the United States, located in the east within the states of Maryland, Virginia, Delaware, and the District of Columbia (Washington). It suffers from water pollution due to stormwater runoff of untreated and polluted water from the surrounding states, including Prince George's County, Maryland. **The combination of climate change and increased impervious areas leads to increased precipitation, resulting in more stormwater runoff of untreated stormwater and consequently increased flooding and water pollution.** Since the 1800s, development in Prince George's County has steadily increased due to its attractive location in proximity to Washington DC and Baltimore. For example, between 1985 and 2005, population growth spurred development that led to a 38% increase in impervious areas (buildings, pavements, roads), at the cost of decreasing open areas and forests. Consequently, less rainwater naturally infiltrates the surface, and more water runs off into the storm drains and the sewage system, carrying pollutants from surfaces on its way. From the sewage system, water further flows untreated into local streams that flow into the Chesapeake Bay estuary. Other consequences of increased stormwater runoff are the erosion of stream beds and embankments, potentially damaging waterways, and creating an inhospitable environment for cold water wildlife on extremely warm days when precipitation enters local streams at high temperatures. Flooding is mentioned as an increased risk of increased stormwater runoff, but the focus of this project is water pollution.



Figure 1. Map of Prince George's County, Maryland, located west of the Chesapeake Bay. © Frank Ramspott

Since 1972, The federal Clean Water Act (CWA) regulates pollutant discharges into the waters of the United States. As explained by Zailani et al. (2023, p.23), "Prince George's County is also subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) as mandated by the Clean Water Act (CWA, 1972) for operators of a Municipal Separate Storm Sewer System (MS4) that collects stormwater and discharges it directly into a waterway without treatment (Rieck et al, 2022). Since being issued its first permit in 1993, the county had been reissued the permit four times, with the requirements of the NPDES MS4 permit evolving every time, to accommodate changes in socio-economic and environmental demands".

In 2014, requirements of the Chesapeake Bay Total Maximum Daily Load (TMDL) imposed on surrounding states via the CWA enforced more stringent stormwater management criteria. The state of Maryland shifted these obligations towards the county level and assigned all counties, including Prince George's County, Chesapeake Bay TMDL reduction goals and the requirement to include solutions in a Watershed Implementation Plan (WIP). **Following these renewed criteria, Prince George's County faced the regulatory challenge of retrofitting approximately 15,000 acres of uncontrolled impervious surfaces by 2025 at an estimated cost of \$1.54 billion** (2024 US Dollars). 8,000 of the 15,000 acres must be retrofitted by 2017 to meet TMDL goals and to reduce runoff of untreated water into the county's three main rivers that flow into the Chesapeake Bay - the Anacostia, the Patuxent, and the Potomac.

The **key barrier** to meeting TMDL goals through the county's traditional Capital Improvement Programme is a lack of public funds because of the investment size and relatively short timeframe, despite the county having a steady source of funding through its CWA fee. This situation incentivised the county to come up with innovative business models to accelerate implementation, increase affordability, improve programme administration, better address long-term operation and maintenance requirements, and at the same time promote social and economic development.

In 2014-2015, Prince George's County entered a 30-year community-based public-private partnership (CBP3) with Corvias and the state of Maryland, called the Clean Water Partnership (CWP), to finance, design, build, operate, and maintain a large-scale urban stormwater green infrastructure retrofit programme. CWP is the first CBP3 to deliver green stormwater infrastructure assets in the United States. Corvias was selected as the private partner through a competitive bidding process. The CWP entails retrofitting 2,000 acres of untreated impervious surfaces during the first three years of the partnership (2015-2018) and maintaining the areas during the subsequent 27 years. The CWP uses a variety of green infrastructure types across the county, with the goal to treat 90 percent of runoff water among other pollution reduction targets.² During each year, the project goes through four phases:

1. Corvias makes an annual work plan that includes a list of projects, including a maximum cost estimate for each project.
2. When the annual plan is approved, Corvias, the general contractor, procures subcontractors to provide materials and construct budgeted projects. Every procurement must have a competitive bid process of a minimum of three competitors.
3. Corvias commences construction of county-approved projects from the annual plan.
4. A completion certifier inspects the projects and provides an "Impervious Area Credit Certificate" for the number of acres in the project that have been retrofitted.

The partnership was extended with an additional targeted 2,000 acres in 2018. This option was included in the initial agreement under the condition that Corvias would meet its initial goals and milestones during the first three years of retrofitting. A second extension followed in 2021. It is expected that the contract will be extended again in 2024. From the second extension onwards, the county asked for different project types in the agreement. The county was advancing with their stormwater compliance but still had problems with flooding. Therefore, the third phase that started in 2021 also included more water volume projects for flood protection. Because these generate volume capacity rather than stormwater acre credits, their outcomes are now not yet documented. This case focuses on details of the CBP3 approach and outcomes from the first (2015-2018), and to a lesser extent, the second phase (2018-2021).

Table 2. Clean Water Partnership. Timeline with key moments

Date	Key moment
2010	New requirements of the Chesapeake Bay Total Maximum Daily Load (TMDL) were imposed on surrounding states via the federal Clean Water Act.
2014	Mandatory stormwater management targets for Prince George's County to retrofit approximately 15,000 acres of uncontrolled impervious surfaces by 2025 at an estimated cost of \$1.54 billion (2024 US Dollar)
2014-2015	Initiation of the Clean Water Partnership, a 30-year (three years implementation, 27 years maintenance) community-based public-private partnership (CBP3) with Corvias and the state Maryland
2015-2018	First three construction seasons (2015-2016, 2016-2017, 2017-2018) to retrofit 2,000 untreated impervious acres with green infrastructure.
2018-2021	Extension of the partnership with an additional 2,000 acres.
2021-2024	Second extension of the contract.

² Green infrastructure types include bioretention gardens, bioswales, outfall protection, permeable pavement, pocket sand filters, pond retrofits, regenerative step pool storm conveyance, stream Restoration, submerged gravel wetlands, tree box filters tree planting, wet swales.

Governance and key stakeholders

Figure 2 shows the governance and organisational structure of the CWP. **The two main stakeholders are shown in blue on top of the figure, being the county authority (Prince George's County) and the private partner (Corvias).** Within the county, the partnership is spearheaded by the county's Department of the Environment (DOE), with help from the Department of Public Works and Transportation (DPW&T), and the Department of Permitting, Inspection and Enforcement (DPIE). Prince George's County is responsible for oversight and protection of the community's long-term interests in the assets, local targeted socio-economic performance, and compliance with federal and state water quality requirements for stormwater outlined in the county's Municipal Separate Storm Sewer Systems (MS4) Permit. The county must approve the annual plan prepared by Corvias, including decisions about project prioritisation, design standards, budgets and cash flows, partner performance and compensation, and socio-economic impact.

The responsibilities of Corvias are formalised in a Master Program Agreement (MPA) and a Master Maintenance Agreement (MMA), both developed by the county. The MPA includes all responsibilities for the implementation of green infrastructure for three years (2015-2018). The MMA includes all responsibilities for the maintenance of implemented green infrastructure for the next 30 years. The MPA has an initial term of 3 years with the goal to retrofit 2,000 acres. Corvias achieved the program performance milestones in 2018 (see more under 'business model'), which led to an additional 3 years and 2,000 acres for green infrastructure implementation. Fees for Corvias are determined through performance-based negotiations. The MPA and MMA offer a contractual framework through which **Corvias acts as program manager**. Corvias is charged with hiring and overseeing subcontractors throughout the design, construction, and operations and maintenance of individual green infrastructure stormwater improvement projects.

The partnership is a community-based public-private partnership that intends to achieve community benefits while at the same time implementing stormwater improvement projects. **Community partners** are involved in the design and implementation through various programmes:

- **The Alternative Compliance Program (ACP)** provides tax-exempt, faith-based or other non-profit organizations to qualify for a reduction of their Clean Water Act Fee by allowing small retrofit projects on their properties that reduce polluted stormwater runoff.
- **CWP Schools Program**, a pilot program designed to assist Prince George's County Public Schools with treating and managing stormwater runoff from impervious sites by utilizing green infrastructure measures.
- **Emerging Landscapers Program (ELP)** to expand the pool of qualified landscaping firms that can become subcontractors to Corvias for executing projects.
- **Mentor Protégé Program** is a supportive services program focused on developing the capacity of local, small and minority businesses in stormwater management and green infrastructure projects.³

Table 3. Clean Water Partnership. Key stakeholders and their responsibilities or roles

Stakeholder	Type	Role and responsibilities
Prince George's County	Public (region)	Oversight of the programme and protection of the community's long-term interests. Approval of the annual plan.
Corvias	Private (construction firm)	Program manager overseeing subcontractors throughout the design, construction, and operations and maintenance of individual green infrastructure stormwater improvement projects
Community partners	Private (various forms)	Multiple community partners can participate in various ways. For example: <ul style="list-style-type: none"> - Faith-based or other non-profit organizations can allow small retrofit projects on their properties. - Public schools can participate in the CWP School Program to green their impervious sites. - County-based firms, particularly small, minority, women, veteran, and disadvantaged businesses are targeted to execute projects.

³ The National Minority Supplier Development Council defines a minority business enterprise (MBE) as a for-profit business that is at least 51% owned, managed, and controlled by a member(s) of a qualified minority group. To be considered a member of a qualified minority group, a person must be a United States citizen who is Asian-Indian, Asian-Pacific, Black, Hispanic, or Native American. Ownership by qualified minority individuals means the business is at least 51% owned by such individuals or, in the case of a publicly owned business, at least 51% of the stock is owned by one or more such individuals." [URL](#).

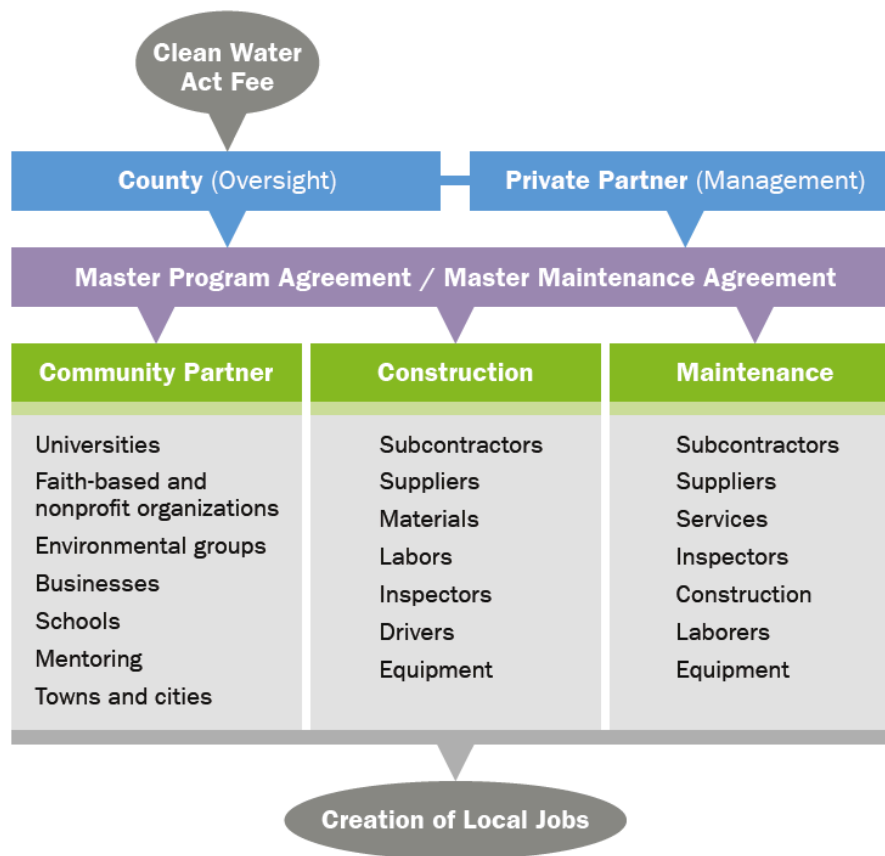


Figure 2. Organizational structure of the Clean Water Partnership⁴

Business model & financial model

Business model

The Clean Water Partnership is a **design-build-operate-maintain community-based public-private partnership (CBP3)**. As in a traditional PPP approach, the county outsources service provision, in this case, the implementation of stormwater management projects, to a private partner. Different from traditional PPP approaches, a community-based PPP approach also promotes social and economic development by having a community-driven procurement process, which enables an integrated project delivery, and ensures local workforce development and community engagement (Figure 2). As in traditional PPP approaches, the private partner receives a fee via a **pay-for-performance arrangement**. In this case, the county purchased 2,000 acres of retrofitted impervious area, which are paid for by the county when a project is finished and certified by a third-party certifier, generating one restoration credit for every certified acre. Each restoration credit is purchased at a set price determined in the contract. Different from a traditional PPP, pay-for-performance also includes the possibility of a contract extension of another three years (excluding 30 years of maintenance) if certain conditions are met. Payments are linked to meeting environmental outcomes, but eligibility for a contract extension depends on meeting both environmental and socioeconomic performance metrics:

- The CWP CBP3 approach includes **community impact performance metrics** next to stormwater performance metrics. The specific targets include training at least 2 county-based contractors in GSI development each year; 50% county-based local business participation in all projects; 40% engagement of county-based minority business enterprises (MBEs); 51% local workforce or man-hour engagement on construction projects.
- The most significant pay for performance element is engrained into Corvias' eligibility to **extend their contract for another three-year term to retrofit an additional 2,000 acres if Corvias achieves 75% of the performance metrics**. The importance of community impacts is reflected in the weight (in percentage) attached to each performance metric. Achieving all goals equates to achieving 100% of

⁴ Department of Environment (2016). *Prince George's County's Approach to meeting regulatory stormwater management requirements*. Prince George's County. <https://thecleanwaterpartnership.com/wp-content/uploads/2016/06/PGC-CBP3-Clean-Water-Partnership.pdf>

the performance targets. Traditional metrics like project efficiency (completion within budget and on time) and effectiveness (Impervious credits achieved consistent with annual plan) only account for 30% of the goals. Customer service accounts for 5%. The remaining 65% are community impact performance metrics or milestones like the once mentioned in the previous bullet point.

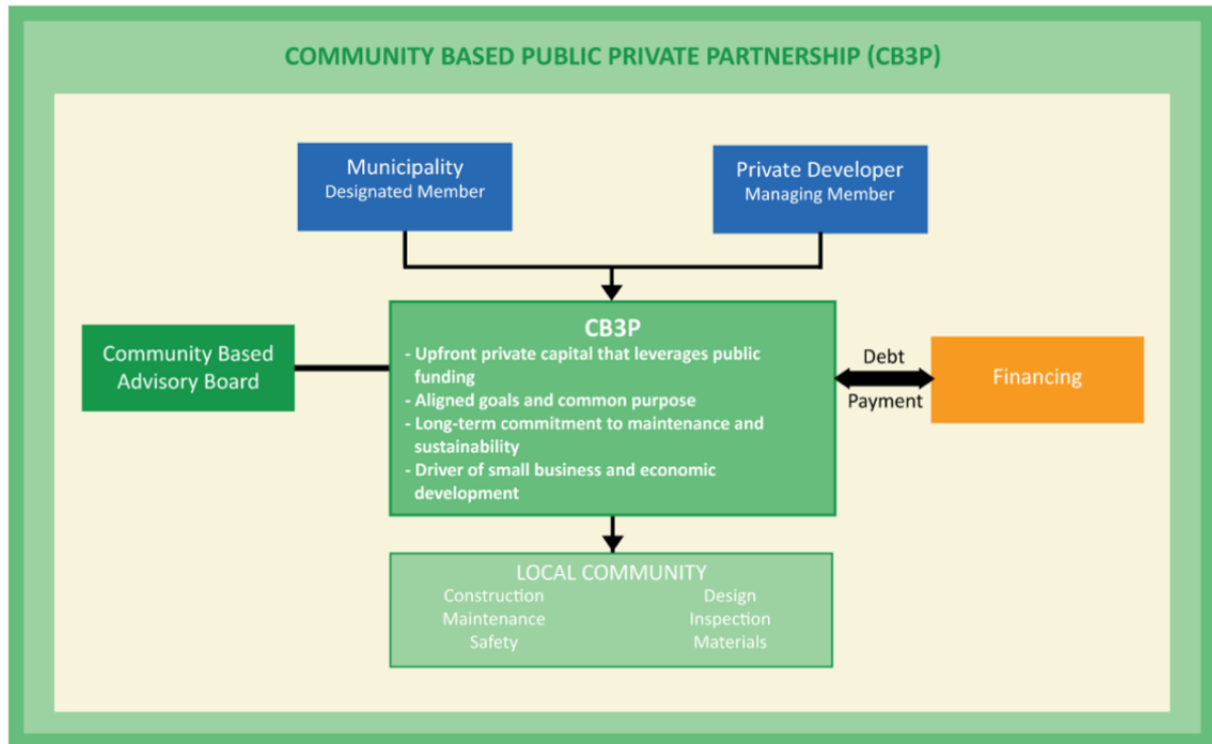


Figure 3. The general model of a community based public private partnership.⁵

CWP's approach to public-private partnerships proposes the following **values**, which in this case are **expected programme outcomes/impacts**:

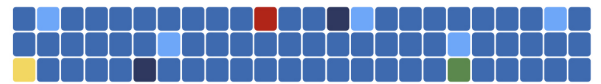
- An accelerated implementation of green infrastructure stormwater improvement projects.
- More affordable retrofits and cost savings on implementation and operation and maintenance costs because in the CWP approach, the pay for performance contracts at large scale drives down the costs of local governments overseeing stormwater contracts.
- Opportunity to use innovative green infrastructure technologies from private sector expertise.
- Remove pollutants and improve water quality.
- Slowing down water runoff benefits wildlife habitats.
- Creation of green jobs by subcontracting county-based firms, with a focus on local, Small, minority, women, veteran, and disadvantaged businesses.
- Educational opportunities by collaborating with public schools, local colleges and universities.

The **key beneficiaries** of these outcomes/impacts are:

- Prince George's County authorities. The county reaches reach environmental, social, and economic goals while reducing the administrative or procurement costs by creating efficiencies, better streamlining government processes, utilizing private sector expertise. Due to the county-wide scale of the program, Corvias can negotiate with contractors to lower the costs of materials and services.
- Local, small, and minority owned businesses, and county-based subcontractors because they are actively involved in the project by Corvias and/or can receive training.
- County residents benefit from reduced stormwater pollution while tax-dollar investments are minimized due to cost savings through the CBP3 approach.

As described by Alexandrovich (2017, p.22), "each annual plan includes total cost and maximum design cost estimates for each project, and the planned social and economic development actions and maximum costs for those programs. Before commencing construction, "each approved project must include a budget book,

⁵ United States Environmental Protection Agency. (2023). *Financing Green Infrastructure - Is a Community-Based Public-Private Partnerships (CBP3) Right for You?* United States Environmental Protection Agency. Last consulted on 8 March 2024. <https://www.epa.gov/G3/financing-green-infrastructure-community-based-public-private-partnerships-cbp3-right-you#:~:text=A%20CBP3%20is%20a%20partnership,provide%20flexibility>



which outlines the number of impervious area credits to be delivered, the number of best management practices, milestones and performance schedule, maximum project cost, and scheduled acceptance date" (Aleksandrovich, 2017, p.22). Cost estimations in the CWP are made for each individual project in the, after which the county decides on the final project prioritization and selection for each annual plan. This is based on the purchasing power of the government and available at that time, like for example the \$100 million that was allocated for the first three-year term and the first 2,000 acres. It is not clear how much is still needed to achieve the 15,000-acre goal by 2025. With standard Best Management Practices (BMP) designs being used at the county level, the material, design, construction, and maintenance costs are anticipated to go down over the contract period due to economy of scale.

The county invested \$100 million for retrofitting 2,000 acres during the first three-year term (2015-2018). As of **January 2024, the county has invested \$272.7 million in the programme**. We could not verify if this also includes operations and maintenance for the entire 30-year period, but we assume it does not because this is money already invested, not allocated. The programme includes the development of 30 to 60 projects annually. Projects typically have a cost of \$250,000 to \$1 million, with sometimes larger projects costing \$5 to \$10 million (e.g., a stream restoration or a wetland project).

Financial model

Corvias is responsible for implementing the stormwater management projects through subcontracting. **Corvias' revenues are based on a negotiated performance-based fee**. Most of the project costs are prefinanced by Corvias (private capital) and funded by the county through various sources (more details below, Figure 4). To receive payment, Corvias must meet all the performance goals set by the county in the Master Program Agreement and the Master Maintenance Agreement. Corvias can also receive an additional incentive fee when it meets incentive fee criteria. Payments made by the county to Corvias are separated into four categories:

- An advanced payment of \$1 million that is paid when the Master Program Agreement is completed. This reimburses the initial costs and advance a portion of Corvias's fee. \$500,000 of this payment is fully earned by Corvias and is non-refundable to the county, \$375,000 is treated as a credit to offset fees accrued by Corvias in the initial three-year term, and \$175,000 is fully earned by Corvias if it achieves the milestones required to expand into the renewal term.
- Design and Construction Payments: Design costs are paid at four milestones (30 percent, 60 percent, 90 percent and 100 percent). Construction milestones vary from project to project.
- Base Fee: Applied to all project, and social and economic program costs. In the initial term, the fee is 5 percent and in the extended term the fee is 4.25 percent.
- Incentive Fee: Paid based on achievement of five criteria – early completion, budgeted cost, and three socio-economic targets: local-based small business, target class, and county resident participation. The rates for the incentive fee match those of the base fee.

Figure 4 shows the financing and funding structure, including the **sources and instruments** that are used to finance and fund the CWP. The financing and funding of the CWP relies on public and private financing sources and **grant proceeds from different government agencies. Bond proceeds, loans from stormwater state revolving funds (SRF loans), and incomes from the Clean Water Act Fee flow into the Watershed Protection and Restoration Fund.**

- Bond proceeds from county public activity bonds and state revolving fund loans are used to fund the implementation of projects under the MPA. The bond are not issued as green bonds but are regular public activity bonds whereby proceeds are purchased by institutional investors like insurance companies.
- SRF loans are low interest loans that that the government makes available through the SRF programme to municipalities and coun ties.
- The bonds and the SRF loans are paid back with revenues generated through the Clean Water Act Fee that was established in response to Maryland's House Bill 1987, which legislates the state's counties to collect a fee from private property owners to mitigate stormwater runoff pollution from impervious areas. The Clean Water Act Fee applies to all private properties, with some exclusions. The Fee is charged on an annual basis and includes a \$20.58 administrative fee per tax account, and an Impervious Area Fee of \$20.90 per 2,465 square feet (229 square meter). A fee reduction of up to 100% can be received if property owners have on-site or off-site Best Management Practices (BMPs) that reduce the quantity or improve the quality of stormwater discharged from their property.

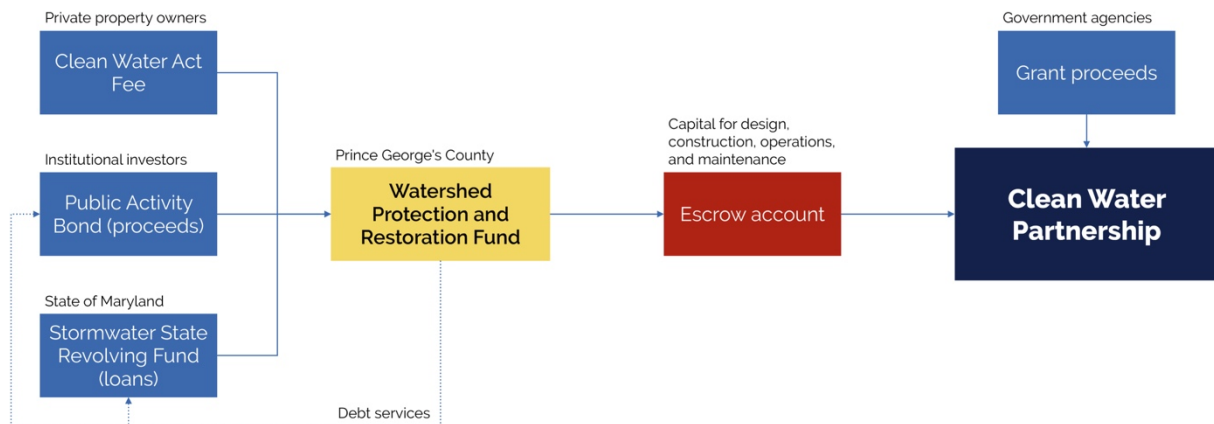


Figure 4. Clean Water Partnership financing and funding structure. Adapted from Aleksandrovich (2017) and updated with information from the interview (source: author).

The funds from the Watershed Protection and Restoration Fund that are needed to finance the CWP are put into an **escrow account**. As defined on Investopedia, “escrow is a legal concept describing a financial agreement whereby an asset or money is held by a third party on behalf of two other parties that are in the process of completing a transaction. Escrow accounts are managed by the escrow agent. The agent releases the assets or funds only upon the fulfilment of predetermined contractual obligations (or upon receiving appropriate instructions). Money, securities, funds, and other assets can all be held in escrow. Escrow is a financial process used when two parties take part in a transaction and there is uncertainty about the fulfilment of their obligations.” The escrow account drives down the interest rate and allows Corvias to get cheaper equity. The escrow account also allows payment to local subcontractors within 45 days instead of the usual 60-90 days. This is of great importance to facilitate the engagement of local, small, and minority businesses who cannot provide a competitive price and float their payroll and their expenses for more than 45 days. This helps the CWP to achieve the targets of local firm and minority firm involvement.

Enabling conditions

In the CBP3 model, **resources and transactional costs** are significantly reduced because the involvement of private partners and community-based expertise requires minimal effort from public staff. It streamlines the administrative process for the public partner compared to traditional procurement procedures by delegating design, build, operation, and maintenance responsibilities to Corvias. Since Corvias proposes projects in each annual plan, the County can focus its staff resources on project selection and prioritisation.

CBP3 is a relatively new PPP approach and required **county council legal approval** since this contracting method deviated from the county's traditional Capital Improvement Programme. An important condition is to determine if a government's legislative framework allows approaches like CBP3. Input from legal departments or an outside legal consultant may be required. In this case, legal approval was required but no legislation changes to adopt a CBP3 approach, since the Prince George's County's legal framework already allowed for public-private partnerships under the state of Maryland. The county's Department of Environment was allowed to transfer most of its responsibilities to a private entity. The county council only had to pass some local legislation to create a target class for county-based businesses, which was required to contract more work to local firms.

From the perspective of the public sector, the CWP has several **de-risking mechanisms** that shift project delivery risks from the county to the private partner. As with traditional PPP approaches, short- and long-term risks associated with construction and maintenance are transferred to the private partner. Furthermore, the pay-for-performance mechanism incentivises cost efficiency and innovation. Corvias only receives payments based on performance related to measurable environmental, social, and economic outcomes. Corvias only receives final payment for each project if the required Impervious Area Credit Certificate is submitted to the county. The pay-for-performance mechanism is an incentive for Corvias to meet performance targets and is a driver to deliver projects in a cost-efficient manner and innovate new methodologies for mitigating stormwater pollution. The county, on the other hand, knows that it invests in projects that are efficient and that perform as expected.

Outcomes

The project has proven successful in terms of **efficiency**, **effectiveness**, and broad **impacts** (social, economic). At the end of the first three-year term (2015-2018), the following **outcomes** were obtained:

- 94 retrofit projects were completed with a total of 2,129 certified acres (target: 2,000 acres).
- Ten businesses completed CWP mentor protégé training program (target: two/year).
- 87% of participating community partners came from county-based minority business enterprises (target: 40%)
- 82% county-based local business participation (target: 50%)
- 57% of person hours were performed by local workforce (target: 51%).

All environmental, social, and economic performance targets were met at the end of the first three-year term with a \$100 million budget, allowing for the contract to be extended by another three years. According to estimates in the 2018 annual report, the 2,000-acre retrofit was achieved "in half the time, for half the price, all while increasing our outreach to key community stakeholders and investing in Prince George's County's small minority and disadvantaged businesses." As of January 2024, 427 projects have been completed or are in progress, and 4,658 acres have been retrofitted and certified. The share of the local workforce further increased to 64% (December 2023).

Lessons learned

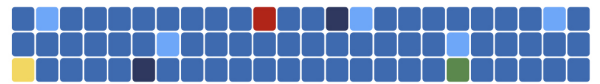
Successes and limitations

The **success** of the program is attributed to the CBP3 approach itself and performance targets set by the county. From the perspective of the county, private sector involvement, social value creation, long term sustainability, and site flexibility are key transitions from their prior stormwater management approach. According to the CWP website:

- Private Sector Involvement transfers municipal planning, design, and execution **risk** to greater private sector involvement, accountability, shared risk, and investment.
- **Social Value Creation** through transition from a purely technical scope bias to an equal bias for "local" small and disadvantaged business development and utilization.
- **Long Term Sustainability** through a transition from costly and slow government design and construction methods to more streamlined and sustainable commercial practices through integrated design, build, operation, and maintenance practices.
- **Site Flexibility** through a transition from rigid, inflexible, piecemealed contracting approaches to structuring aggregated procurement phases tailored to the needs of the municipality and the local subcontractor capacity and capabilities. The interviewee also stated that the **programme itself is very flexible and adaptive**, allowing changes to the scope of projects with every contract renewal. This allowed the county to ask for more water volume projects for flood protection, especially after the second renewal, during the third three-year phase. There is flexibility in the type of projects as long as they are related to water management, stormwater quality, or water volume.

The interviewee furthermore identified the combination of a **good partnership** and a **win-win-win situation** for all involved parties as key success factors. The government, private sector participants, and the community have maintained a good relationship since the start of the CWP. The good relationship is facilitated because the programme offers benefits to all groups of partners, especially the community. The community has adopted it and embraced it because they believe in its credibility thanks to transparency about the outcomes and the tracking of performance. The community also benefits economically and environmentally. The community sees it as their programme. They can see that local businesses are involved, and in that way, money remains within the local economy. This makes it easier for the government to justify the use of the Clean Water Act fees. Because of this, the programme has been renewed twice without any trouble since its inception.

We did not find information about **limitations** in this case. The interviewee was generally positive and did not point out significant limitations. General disadvantages of PPP approaches from a public actor's perspective include the potential for higher costs because private sector entities aim to generate profits and ensure a return on their investment; lack of public control and transparency if the private actor significantly influences project management, operations, and decision-making; and an unequal distribution of benefits if the private actor prioritises financial gains over public needs (rent-seeking activities). These potential disadvantages have successfully been avoided in this case because of the detailed characteristics of the CWP's CBP3 approach. Due to economies of scale and private sector expertise not available at the county, a PPP approach is more cost-efficient. There are clear performance targets that allow for transparency about outcomes and safeguarding the delivery of public benefits over financial gains.



Transferability conditions and potential

The CBP3 approach is a relatively new form of public-private partnership but is not context-bound and thus has the potential to be applied in other contexts as well, specifically in areas that are already experienced with public-private partnership. Corvias has replicated the CWP's CBP3 approach in other areas in the US, including Milwaukee, Seattle, and Chester (PA). Some **conditions** must be met before a CBP3 approach like the CWP can be successfully implemented:

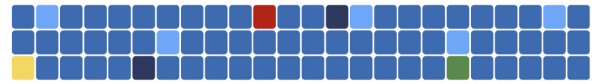
- Because CBP3 is an innovative P3 approach, especially for climate adaptation infrastructure, **early outreach and awareness activities** to local public decision makers, including legal and financing officers, is important.
- Related to the first point, it is important to **clearly outline the goals and objectives**, how they are supposed to be measured, and what the desired **governance structure** should look like. Knowing the preferred governance structure means understanding how the risks are shared between the public and private partners. If these are prepared well, the programme can be communicated clearly to the community, allowing them to understand what's in it for them and who bears the risks.
- CBP3's are generally long-term arrangements of multiple decades. **Repayment capacity** is therefore an important condition, possibly through a **dedicated funding mechanism**, in this case a specific fund that is supplemented with bond proceeds and user fees (Clean Water Act Fee). If debt instruments such as bonds are used, a steady and certain income source such as the Clean Water Act Fee can be important to attract lending institutions and investors as it gives them certainty about the public actor's repayment capacity.
- Less staff is required from the public authority if they can outsource activities to the private actor. However, there is still staff required that is preferably knowledgeable about PPP approaches for follow-up and collaboration with the private actor(s).
- Successful subcontracting requires highlighting opportunities for economic development, upskilling local businesses and workforce, and job development to incentivize local community organisations (e.g., faith-based organisations and public school) and businesses to invest or participate in green stormwater retrofit projects.

Related factsheets

- The CWP is an example of a climate-related program that creates socio-economic benefits aside from environmental benefits by actively involving entire local communities in the realisation of projects. Similar situations can be found in the factsheets of the Greater Cape Town Water Fund (ID 02), Project Finance for Permanence (ID 03), and the Seychelles debt-for-nature swaps (ID 15). What stands out in this case is that there are socio-economic performance targets included in the CBP3 contract that are equally important as economic performance target.
- The Zorrotzaurre redevelopment project in Bilbao (ID 19) is an example of a more traditional PPP approach to manage flood risks in a project to convert an industrial peninsula into a residential area, including 49% private contributions.

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