WASHINGTON STATE

Stormwater Community Based Public-Private Partnership Feasibility Assessment

Executive Summary

The Community Based Public-Private Partnership (CBP3) Assessment seeks to determine the feasibility of leveraging CBP3s to achieve stormwater and community goals in Washington State. The assessment is the first step in development of a CBP3 pilot program for the state. The assessment identifies the types of permittees that are most likely to implement and benefit from implementing a CBP3, and provides recommendations to improve enabling conditions and facilitate CBP3 projects. In addition, the assessment illustrates specific contracting arrangements, performance-based payment strategies, and alternative compliance and financing mechanisms that can accelerate achievement of state and local agency stormwater and community goals.

Potential Benefits of CBP3s for agencies in Washington State

- Expedite project delivery
- Invest in under-served communities
- Increase scale of implementation
- Share risk and align incentives
- Expand expertise and innovation
- Increase implementation opportunities
- Cost savings
- Access private financing

What are Community Based Public-Private Partnerships?

A CBP3 is a form of alternative delivery in which a government agency and private entity partner to improve water quality and quality of life for a community.[1] The public partner funds the project and the private partner delivers the project, with some portion of the project delivery risk transferred to the private partner. A CBP3 can vary significantly by scope, size, and contractual arrangement based on project complexity, community goals, private-sector interests, cost advantage, and risk tolerance. Further, a CBP3 can be financed using a range, and likely a combination, of different public and private funding sources from municipal bonds and loans to grants and private equity.

A key aspect of a CBP3 is that multiple project phases, which traditionally are contracted separately with unique contract terms, are bundled into a single contract and create the opportunity to improve project outcomes. Two types of CBP3s are expected to be the most feasible and beneficial for state and local agencies in Washington: Design-Build-Operate & Maintain (DBOM), and Design-Build-Own-Operate & Maintain (DBOOM). DBOM engages a private partner using a pre-selected site to generate stormwater and community benefits. The private partner is responsible for designing a project that they can construct and maintain over time. The public partner is responsible for selecting the site and, if not already on public land, purchasing or gaining rights to the site. The second type, DBOOM, is similar to the first except the private partner is responsible for purchasing the site. This is illustrated below in comparison to conventional procurement.

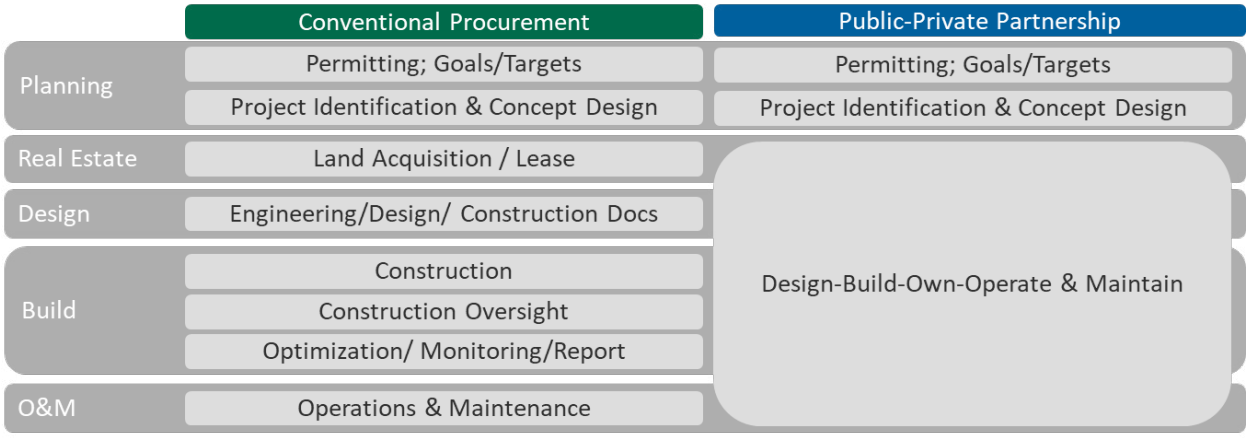


Figure 1. Comparison of the Design-Build-Own-Operate & Maintain CBP3 contract arrangement to the conventional public project procurement approach.

This assessment focuses on partnerships in which the public partner funds millions of dollars' worth of stormwater improvements, and the private partner delivers at least one significant project or many projects. Further, this assessment focuses on implementation of green infrastructure, which for the purposes of this assessment is defined as infrastructure that uses natural processes to reduce stormwater discharges and to help restore natural hydrology and/or water quality.[2]

Benefits of Performance-Based Contracts

Performance-based contracts[3] are a critical component of CBP3s, whereby payment to the private partner is based on defined performance metrics that reflect the quality of the project delivered. Paying for verified outcomes creates financial incentives for the private partner to determine the most cost-effective ways to achieve and maintain project benefits while also reducing the risk of taxpayer dollars funding projects that do not produce desired results. While a CBP3 suits a subset of permittees and scenarios, most Washington permittees can use performance-based contracts on their own to increase the effectiveness of project delivery for projects of any meaningful size.

CASE STUDY

The Clean Water Partnership[4, 5], the first formally referenced CBP3, uses a private party to design, build, operate and maintain 2,000 acres of green infrastructure in Prince George County, MD for 30 years. The goal is to improve stormwater infrastructure and the local economy through targeted disadvantaged subcontractor development and use.

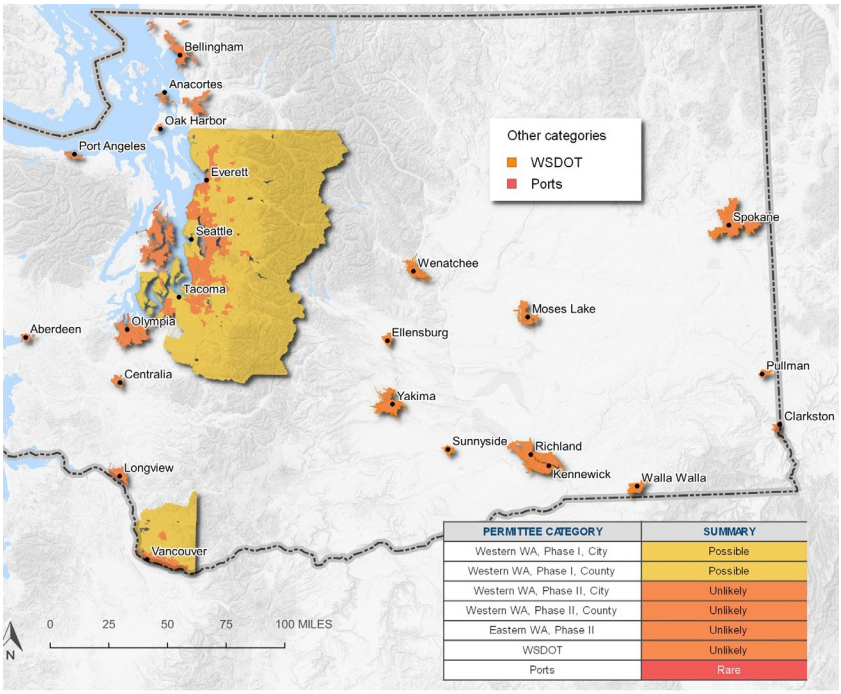
The Design-Build-Operate-Maintain CBP3 contract structure increases project delivery and efficiency, and bases payment on performance metrics. Community benefits include using certified small, minority and women-owned businesses; community outreach, including educating students on sustainable stormwater management; and assisting tax-exempt, faith-based or other nonprofit organizations with stormwater compliance.

Phase 1 resulted in 2,000 acres of retrofit credits through installation of 266 BMPs at 94 project sites. All performance targets were exceeded, including project implementation timeline.

Stormwater run-off demonstration at Calverton Elementary

Key Findings: Enabling Conditions to Leverage CBP3s

The assessment considered different categories of National Pollutant Discharge Elimination System (NPDES) permittees in Washington with common characteristics (e.g., Western Washington Phase I County, Eastern Washington Phase II, Washington Department of Transportation, etc.) to determine the likelihood that a permittee category has the conditions to leverage a large-scale CBP3 (consisting of a very large green infrastructure project or many smaller projects) to meet their green infrastructure goals. The assessment found that specific categories of NPDES permittees are better suited to leverage a CBP3, illustrated spatially in the map below.



PERMITTEE CATEGORY	SUMMARY
Western WA, Phase I, City	Possible
Western WA, Phase I, County	Possible
Western WA, Phase II, City	Unlikely
Western WA, Phase II, County	Unlikely
Eastern WA, Phase II	Unlikely
WSDOT	Unlikely
Ports	Rare

The assessment was conducted through research and structured interviews of at least one permittee associated with each permittee category to determine the suitability of each permittee category to assist in developing a targeted pilot program; however, it is critical to understand that each permittee has its own unique characteristics, and there will be exceptions to this generalized assessment.

The findings below are a subset of the findings in the final report and aim to help the state reduce barriers and develop a targeted CBP3 program. The findings are grouped by the five criteria used to conduct the assessment, which play a critical role in enabling CBP3s.

Figure 2. Each polygon on the map represents a permittee included in the permittee categories assessed. Each permittee category is color-coded according to the aggregate results of several assessment criteria.

Meaningful Implementation Scale

A CBP3 as defined for this assessment must have meaningful scale for the delivery partner to take on project delivery risk and have the flexibility to create innovative solutions to maximize environmental and community benefits.

Several permittees are expected to implement significant green infrastructure in the next five years. This is the case primarily for Phase I permittees. The scale of implementation will vary significantly depending on the value that agency leadership and stakeholders put on the multiple benefits of green infrastructure.

The availability of land to build green infrastructure is a constraint shared by many interviewees. Opportunities to leverage land owned by other entities, such as private landowners and school districts, may provide economic and community benefits by increasing the opportunity set.

Legal Authority & Risk Appetite

A CBP3 as defined for this assessment requires flexible procurement and contracting terms, as well as a willingness by the permittee to implement non-traditional contractual arrangements.

Specific legal barriers for state and local agencies to implement a CBP3 were not identified.
Additionally, there are statutes in place that are intended to facilitate alternative contracting arrangements for designing, constructing and maintaining pollution control facilities.

Competitive bidding, lowest bid, prevailing wages, and union agreements are perceived barriers.
Most permittees interviewed believe specific legislation or state policy enabling CBP3s would likely be beneficial.

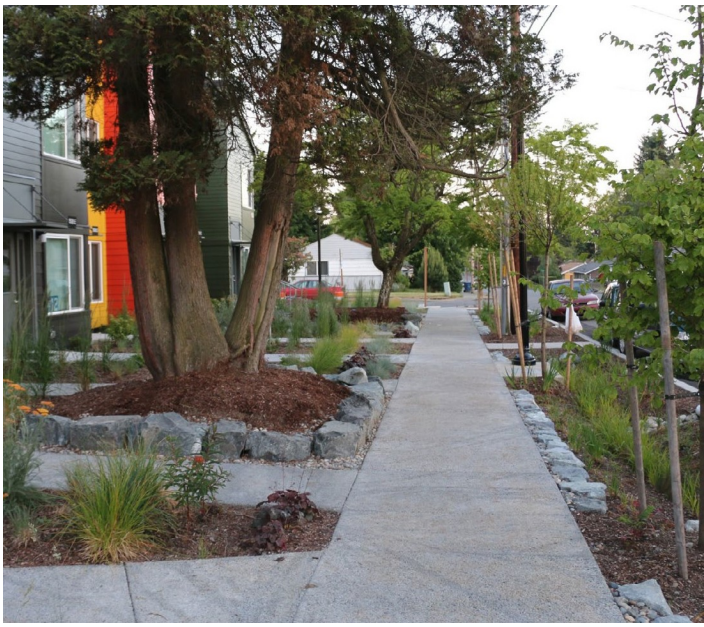
No permittees were aware of contracts tying payment to stormwater outcomes.
However, all interviewees asked believe it is possible. Phase I permittees, and a few Phase II permittees, have experience with and have the risk tolerance to implement nontraditional contracting arrangements.

Sustainable and Predictable Revenue

A CBP3 as defined for this assessment must have predictable and meaningful revenue source(s) to address annual budget constraints and commit to long-term funding.

Phase I & many Phase II permittees are likely to have dedicated revenue sources adequate for a large-scale CBP3
Asignificant portion of the permittees in Washington have a surface water/stormwater utility rate relative to other states.

CBP3s can create significant cost savings
Permittees could get more done with their existing revenue sources, decrease the amount of additional revenue needed, and increase the term of maintenance or increase the community benefits generated.



KEY DIFFERENTIATORS OF PERFORMANCE-BASED CONTRACT TERMS

- **Performance Metrics** that define a consistent and repeatable method to measure the quantity and quality of performance.
- **Verification Processes** that define who, how, and when performance is assessed.
- **Performance-Based Payment Terms** that define the portion of payment linked to verification of environmental outcomes using the performance metric.

Section 2 of the report describes several payment terms that differ based on the relative risk borne by the public partner versus the private partner.

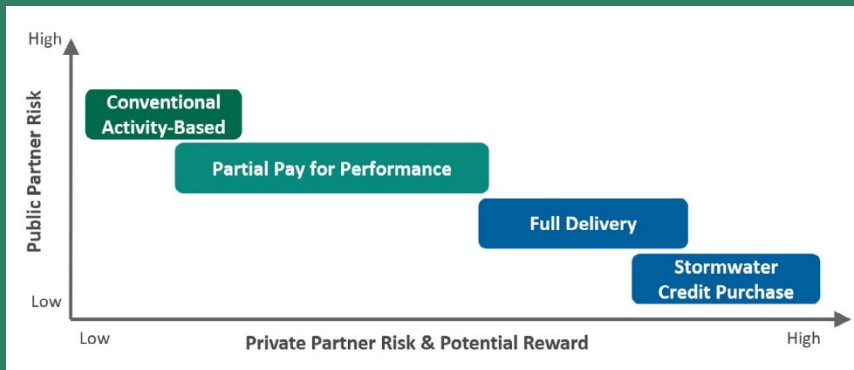


Figure 3. Different contract payment terms on a spectrum based on varying degrees of potential public party risk and private partner risk and reward.

Measurement and Verification

A CBP3 as defined for this assessment requires performance measures and verification protocols that ensure the desired outcomes of the project are met and are suitable to all participants involved.

Existing water quality and flow metrics that can be used by a CBP3 vary across the state

Permittees in western Washington are likely to have, or be able to easily adapt, existing metrics to ensure effective siting and design of projects implemented by a CBP3. No established metrics are identified for eastern Washington by this assessment.

Need for verification protocols

Phase I permittees have monitoring and inspection protocols; however, effective and cost-effective verification protocols to ensure green infrastructure is designed and maintained to maximize stormwater benefits likely need to be developed.

Community Benefits

Community benefits are a critical component of CBP3s; they enable stormwater projects to generate additional value from limited land resources and permittee budgets.

CBP3s can create multiple community benefits

CBP3s can contribute to a wide range of other environmental and community (or social equity/environmental justice) goals from both the project delivery and the green infrastructure itself.

Maximize contribution to community goals from green infrastructure

CBP3s create a transparent mechanism and effective incentives, which helps permittees incorporate community benefits into green infrastructure projects.

Recommendations for Developing CBP3 Pilot Projects

The recommendations in the figure below are based on this assessment, as well as experience designing and implementing CBP3s and other alternative project delivery mechanisms in a wide range of contexts. The recommendations are intended to help the Department of Commerce and other state agencies design and implement a CBP3 pilot program.

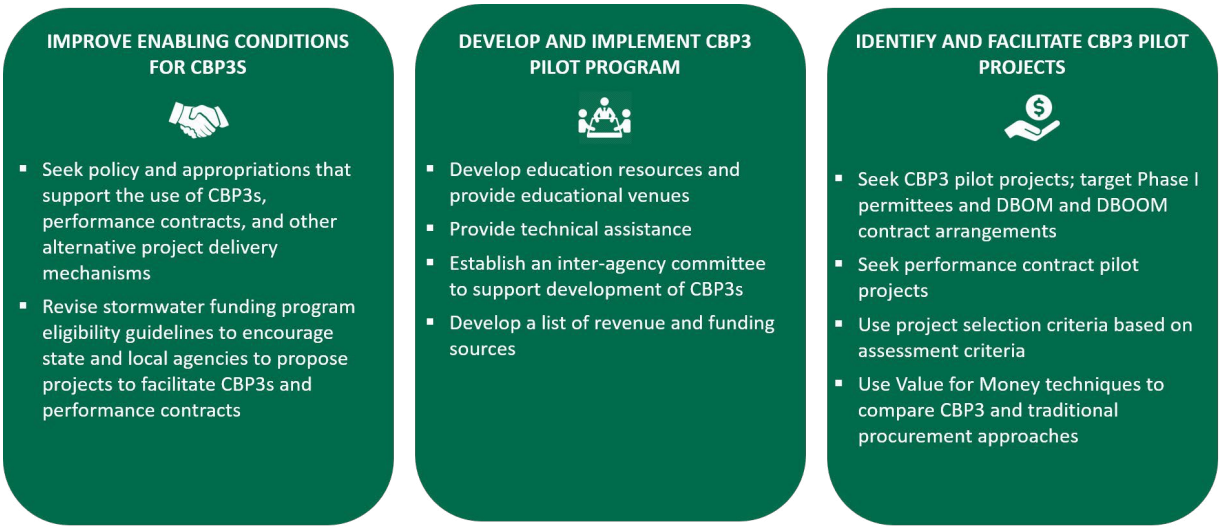


Figure 4. Recommendations to the Department of Commerce to design and implement a CBP3 pilot program grouped by objective.

This assessment was commissioned by the Department of Commerce and funded by the Washington State legislature through the 2018 capital budget (Engrossed Substitute Senate Bill 6095). The assessment was led by Environmental Incentives with support from Geosyntec, Corvias and FutureWise, and guided by a steering committee with the following members: Bruce Lund, Buck Lucas, Tom Gilmore (Dept. of Commerce); Jana Ratcliff (Dept. of Transportation); and Jessica Schwing (Dept. of Ecology).

Prepared By:

Environmental Incentives

Geosyntec consultants

Corvias

future wise

References

1 "Financing Green Infrastructure - Is a Community-Based Public-Private Partnerships (CBP3) Right for You?" EPA, Environmental Protection Agency, 30 July 2018, www.epa.gov/G3/financing-green-infrastructure-community-based-public-private-partnerships-cbp3-right-you.

2 Green Infrastructure Statement of Intent, www.epa.gov/sites/production/files/2015-10/documents/gi_intentstatement.pdf.

3 Pay for Performance Toolkit, https://www.enviroaccounting.com/payforperformance/Program/Home

4 Clean Water Partnership. Prince George's County Maryland, https://www.princegeorgescountymd.gov/2865/Clean-Water-Partnership.

5 Corvias Prince George's County Stormwater Partners, LLC. "A Different Approach to Stormwater Management." Clean Water Partnership. 1st Quarter 2018 Program Update, Mar. 2018. PowerPoint Presentation.

This assessment was commissioned by the Department of Commerce and funded by the Washington State legislature through the 2018 capital budget (Engrossed Substitute Senate Bill 6095). The assessment was led by Environmental Incentives with support from Geosyntec, Corvias, and FutureWise, and guided by a steering committee with the following members: Bruce Lund, Buck Lucas, Tom Gilmore (Dept. of Commerce); Jana Ratcliff (Dept. of Transportation); and Jessica Schwing (Dept. of Ecology). In addition, the project team acknowledge the Municipal Research and Services Center (MRSC) for their informative and easy to use online resources, and their staff Judy Isaac and Linda Gallagher for promptly responding to questions related to the Revised Code of Washington (RCW).

I. Introduction

Increasingly, state and local agencies across the United States are using Community-Based Public-Private Partnerships (CBP3s) to overcome the challenges of implementing, financing, and maintaining green infrastructure to achieve water quality goals. CBP3s hold the potential to capitalize on the strengths of public and private-sector participants to overcome budget limitations, reduce the taxpayer risks of project failure, and provide cost savings. Further, CBP3s can address environmental justice concerns and efficiently provide a range of co-benefits from job creation and environmental educational opportunities to recreation opportunities.

However, CBP3s may not be appropriate in all contexts. The potential for CBP3s to help state and local agencies depends on state and local procurement laws, as well as the state or local agency's specific context, goals, and objectives. To realize the benefits of CBP3s, public and private-sector participants must consider several factors to determine if a CBP3 is likely to produce improved outcomes.

This assessment explores specific CBP3 contracting arrangements and other alternative delivery mechanisms that can be useful to state and local agencies, and identifies the state and local agencies that have the fewest existing barriers to successful CBP3 implementation. Based on direction from the project Steering Committee, the assessment is limited to green infrastructure, although the concepts are transferrable to any stormwater project. For purpose of this assessment, "green infrastructure" is broadly defined as new or the retrofit of existing infrastructure that generates both environmental and community benefits; environmental benefits are specifically achieved using natural processes that reduce stormwater discharges and help restore natural hydrology and/or water quality.[1]

PURPOSE AND AUDIENCE

This assessment explores the potential for CBP3s to more effectively address stormwater management challenges in Washington. The assessment has two primary purposes:

1) Help the Department of Commerce and other agencies that will be involved in the implementation of the pilot program develop a **targeted approach to designing and implementing a CBP3 pilot program** by identifying the types of state and local agencies that are most likely to implement and benefit from implementing a CBP3, and providing recommendations to improve enabling conditions and facilitate CBP3 projects.
2) Help state and local agencies identify potential **CBP3 projects, and associated financing and contracting structures to achieve their unique stormwater and community goals**.

CONTENTS

This report contains the following sections.

SECTION	PURPOSE AND INTENDED USE
II. Overview of Community Based Public-Private Partnerships	Describe CBP3 contracting arrangements and other alternative project delivery approaches relevant to stormwater permittees in Washington.
III. Feasibility Assessment of Community Based Public-Private Partnerships for Washington	Determine which stormwater permittee categories have the fewest barriers to successful CBP3 implementation.
IV. Recommendations for Designing and Implementing a Pilot Community Based Public-Private Partnership Program	Provide specific action items to expedite design and implementation of a successful CBP3 pilot program.

[1] Green Infrastructure Statement of Intent, www.epa.gov/sites/production/files/2015-10/documents/gi_intentstatement.pdf.

II. Overview of Community-Based Public-Private Partnerships

This section provides an overview of CBP3s and explores the types of contractual arrangements and other alternative project delivery approaches that National Pollutant Discharge Elimination System (NPDES) permittees may be able to leverage to achieve their regulatory requirements and community goals. In particular, this chapter:

- Describes stormwater public private partnerships (P3s) in the context of state and local agencies in Washington.
- Describes the important attributes of what makes a CBP3 community based.
- Defines the roles of the public and private parties in different CBP3 contract arrangements.
- Defines different contractual arrangements used in P3s to share risk between public and private partners.

WHAT IS A PUBLIC-PRIVATE PARTNERSHIP FOR STORMWATER IN WASHINGTON?

This assessment focuses on P3 arrangements that may be implemented by a permittee to construct green stormwater projects. The types of projects assessed include:

- Regional stormwater treatment projects that collect and treat stormwater from an urban drainage area.
- Public and private property building and landscape low-impact development (LID) retrofit programs that result in improvements to existing developments that capture and treat stormwater on-site.
- Off-channel wetland creation or enhancement projects that reduce pollutants and flows before they reach a receiving water.

One of the benefits of P3s is that private partners identify innovative project types and opportunities. The above list of project types is not intended to be exhaustive or limiting, but to provide context for the types of projects that generate stormwater benefits as a primary purpose.

A CBP3, which is a type of P3 that generates water quality and community benefits, may be created to deliver a single project, several projects, or an entire stormwater program. This assessment evaluates partnerships that could potentially implement millions of dollars' worth of stormwater improvements through delivery of at least one significant project or multiple projects. The two CBP3s formally recognized by the Environmental Protection Agency, each of which deliver multiple projects, are summarized in case studies on the next page.

What Is Not Included in This Assessment?

Reducing pollutants and peak runoff from urbanized areas is a monumental task that requires communities to use a portfolio of strategies to achieve water quality goals and permit compliance. Stormwater improvements can be integrated into the design of public facilities, road improvements, and parks. Local permitting can incorporate post-construction development requirements to minimize or completely offset the impacts from new development and encourage re-development projects to reduce the impacts from existing development. This assessment does not address projects that are the responsibility of a private developer in accordance with local development codes and regulations. Nor does it address projects in which a public entity simply uses private parties as contractors to implement a single project phase. Industrial stormwater permittees are also excluded from this assessment.

In certain instances, private parties may design, build, own, operate, and maintain a regional stormwater facility as a means to treat stormwater from a housing, commercial, or industrial development. These facilities may be regulated by the local agency, but do not include an active role for the public partner. This assessment does not address projects that private entities fully implement.

Case Study: Prince George's County Clean Water Partnership[2][3]

Purpose: The Clean Water Partnership (CWP) is a 30-year partnership between Price George's County Md. and a private party (Corvias) to meet state and federal water quality requirements by improving stormwater infrastructure and the local economy through "local" targeted disadvantaged subcontractor development and utilization.

Structure: The CWP increases project delivery efficiency through a Design-Build-Operate-Maintain CBP3 contract arrangement with performance-based payment terms.

In addition, the CWP provides community benefits by:

- using certified small, minority and women-owned businesses for a minimum of 30–40 percent of the total project scope
- managing a schools programs designed specifically for the Prince Georges County Public Schools District to educate students about the importance of sustainable stormwater management and environmental stewardship
- mentoring and developing private companies for delivering green infrastructure projects and
- managing an alternative compliance program to enable tax-exempt, faith-based or other nonprofit organizations to qualify for a reduction of their Clean Water Act Fee by completing small retrofit projects on their properties.

Results: Phase 1 project results include 2,000 acres of retrofit credits at $50,000/acre, 266 best management practices (BMP)s installed at 94 project sites, 87percent target class utilization, 40 percent resident work hours, and a public-private property mix of 97 percent to 3 percent. Overall implementation time of projects was shortened due to innovations in project selection, permit approval reform, and extensive community/stakeholder outreach.

Case Study: Chester Stormwater Authority[4]

Purpose: The Stormwater Authority of the City of Chester, Pa. (CSWA) developed a CBP3 with a private party (Corvias) to build and maintain up to $50 million in green stormwater infrastructure over the next 20- 30 years on approximately 350 acres. The program seeks to address significant pollution and flooding issues, improve neighborhood quality of life, assist small, minority-owned businesses, and drive economic growth, including significant job creation and cost savings to capital improvement efforts in the region.

Structure: The CBP3 developed by CSWA uses the Design-Build-Finance-Operate & Maintain (DBFOM) approach to achieve triple bottom line benefits through a 30-year contract. U.S. EPA (Region 3 and Headquarters) is providing more than $150,000 in technical and planning assistance, and the Chester Water Authority (CWA) matched the EPA technical and planning assistance funds with a $50,000 grant. PENNVEST, Pennsylvania's infrastructure investment authority, has announced a $1 million planning/pre-construction grant to support the initial $11 million-$15 million of green street projects in Chester.

[2] Clean Water Partnership. Prince George's County Maryland, https://www.princegeorgescountymd.gov/2865/Clean-Water-Partnership.

[3] Corvias Prince George's County Stormwater Partners, LLC. "A Different Approach to Stormwater Management." Clean Water Partnership. 1st Quarter 2018 Program Update, Mar. 2018. PowerPoint Presentation.

[4] Lueckenhoff, Dominique. *A New Model for Urban Renewal: Stormwater Authority of Chester's Community-Based Public-Private Partnership*. USEPA, www.chestercity.com/wp-content/uploads/2017/05/Chester_CCBP3_Announce_FactSheet_v5.pdf.

Results: The newly formed CSWA has 1) successfully established a stormwater utility fee based on impervious coverage by parcel, 2) established a comprehensive inlet cleaning and repair program of over 1,500 inlets across the city, and 3) closed on $11 million of state revolving fund loans for the initial green infrastructure projects scheduled to break ground in early spring.

While stormwater improvements are required to be part of developing a new hospital or sports arena that may use a P3 structure, P3s that deliver projects where stormwater is incidental to the primary purpose of the project are also not considered. Lastly, financial assistance or incentive programs that encourage private property owners to manage runoff from their parcel, such as the RainWise program in Seattle described in the case study below, can produce significant stormwater benefits as a program overall. However, these programs are not considered in this assessment because the benefit generated from each site is relatively minimal, and thus the payment structure and enforcement is appropriately straightforward.

Case Study: RainWise (Seattle, Wash.)[5]

Purpose: During big storms, the sheer volume of stormwater from roofs, driveways and other hard surfaces can cause sewer overflows and erode hillsides and stream banks. In 2013, the city council and mayor set a goal for the City of Seattle to manage 700 million gallons of stormwater annually by 2025 using green infrastructure through agency capital projects, stormwater code related-projects, private innovation, voluntary installations, public-private partnerships, and more.

Structure: RainWise is a rebate program that helps eligible property owners manage stormwater by covering most or all of the cost of installing cisterns and rain gardens on the property. This prevents flooding, adds attractive landscaping, and can provide water for summer irrigation. To receive a rebate, the applicant must live in an eligible combined sewer overflow (CSO) basin.

Results: By the start of 2016, Seattle Public Utilities and King County Water Treatment District almost doubled the number of gallons of stormwater being managed, going from 100 million gallons to 192 million gallons. The average RainWise rebate provided was around $4,400. Managing (reducing or slowing) 700 million gallons of stormwater with GSI annually means 1,125 acres of impervious surface will function more like a native forest.

WHAT MAKES A P3 COMMUNITY BASED?

A CBP3 is not a specific contractual arrangement; rather it is an industry name for an alternative delivery concept whereby there is a partnership between a government agency and a private entity to improve water quality and a community's quality of life.[6] The private entity always delivers the projects, and some portion of the project delivery risk is transferred to the private party; however a CBP3 can vary significantly by scope, size and contractual arrangement based on project complexity, community goals, private-sector interests, cost advantage, and risk tolerance.

A CBP3 is intended to achieve community benefits beyond stormwater improvements and permit compliance. The community benefit portion of the CBP3 comes from the green infrastructure itself, such as recreation opportunities, as well as through the approach to project or program implementation. For example, a CBP3 can include requirements – and potentially financial incentives – associated with:

[5] RainWise website, http://www.700milliongallons.org/rainwise/.

[6] "Financing Green Infrastructure - Is a Community-Based Public-Private Partnerships (CBP3) Right for You?" EPA, Environmental Protection Agency, 30 July 2018, www.epa.gov/G3/financing-green-infrastructure-community-based-public-private-partnerships-cbp3-right-you.

- Local job creation
- Training
- Site selection and project design targeted to improve disadvantaged communities
- Community engagement and education

WHAT ARE THE PUBLIC AND PRIVATE ROLES IN A CBP3?

The roles and responsibilities of the public and private parties primarily are defined by the project phases contracted to the private party. The roles for the private and the public partner described below reference a common set of project phases (Figure 1) that are typical of stormwater projects.[7][8] This description is not exhaustive. Many combinations exist beyond those detailed in this report.

Design-Bid-Build: Conventional Procurement

The Design-Bid-Build structure is typical of conventional procurement approaches. It is used as a reference point to show the contrast with the CBP3 contract arrangements described below. The Design-Bid-Build title emphasizes the competitive procurement step that follows project design to select a contractor to cost-effectively construct the project. However, each project phase could require a unique procurement step to select an appropriate contractor to perform the work for each project phase. Procurement steps can be as streamlined as developing a task order under an on-call contract or a fully competitive bidding process.

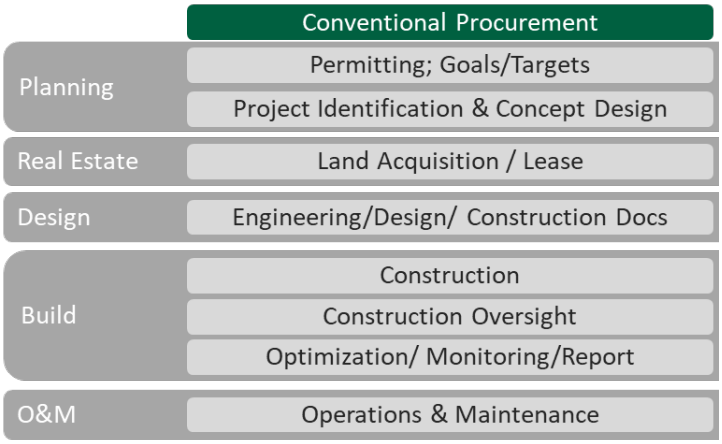


Figure 1: Design-Bid-Build is representative of conventional procurement and used as a reference point to differentiate the CBP3 contract arrangements

Public Party Responsibilities: Overall project delivery is the responsibility of the public party, including cost, schedule and performance. Public staff may deliver certain project phases, but most phases are supported by private contractors. Typically, the public party must develop a unique contract mechanism to gain private contractor support for each project phase, and a public staff person provides contract management. In addition, it is common for different departments within the public entity to manage planning, design and construction, and operations and maintenance phases. This can cause project delays and can result in disconnects that cause projects to under-perform their original purpose.

Private Contractors: The private contractor delivers the services contracted for any one project phase. Because the private party is responsible for only one step of the project, they hold minimal risk. Different contractors may be selected to support each project phase, and the design contractor may be excluded from bidding on the construction phases. Because the public party defines project assumptions and the services for each contract, private contractors are allowed to submit change orders when unforeseen factors arise that require services beyond the original

[7] "Community Based Public-Private Partnerships (CBP3s) and Alternative Market-Based Tools for Integrated Green Stormwater Infrastructure" EPA, April 2015, https://www.epa.gov/sites/production/files/2015-12/documents/gi_cb_p3_guide_epa_r3_final_042115_508.pdf

[8] "Evaluation of Public Private Partnerships" Washington State Joint Transportation Committee, AECOM, 19 January 2012, http://leg.wa.gov/JTC/Documents/Studies/P3/P3FinalReport_Jan2012Web.pdf

scope of any one contract. Change orders can cause delays while negotiating and approving contract amendments and increase project costs.

Because this contract arrangement represents conventional procurement with limited responsibility held by the private contractor, the terms public party and private contractors are used to describe responsibilities. The terms public partner and private partner are used below to emphasize the increased responsibilities of the private partner.

Design-Build

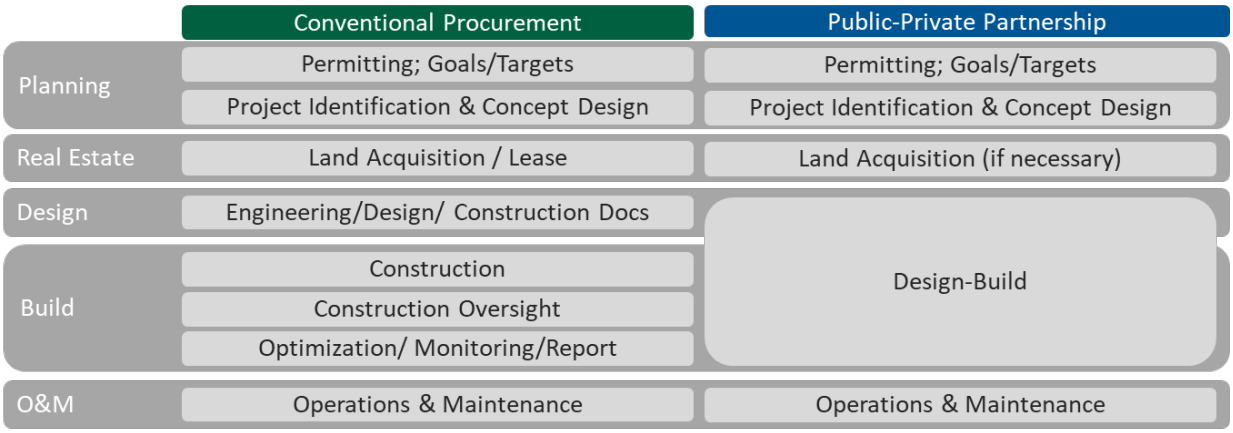


Figure 2: Comparing the Design-Build CBP3 contract arrangement to conventional procurement. This structure engages a private partner to design and build a project at a pre-defined location. The public partner is responsible for selecting the site and, if not already on public land, purchasing or gaining rights to the site. The public partner is also responsible for operating and maintaining the project.

The Design-Build structure is particularly viable when publicly owned land is identified as an effective site to implement a stormwater project through a regional planning effort. Frequently state and local agencies conduct multi-benefit planning efforts to identify how existing public lands can contribute to overall sustainability goals including stormwater improvements. The public partner contracts with a private partner to develop a project design and construct the project. The stormwater infrastructure may be able to be efficiently maintained by state and local agency staff on these multi-benefit projects, especially if the project is located in a park or right-of-way with non-stormwater facilities that are routinely maintained by state and local agency staff.

Public Partner Responsibilities: Upfront site selection and ongoing operations and maintenance are the responsibility of the public partner. The public party transfers the design and construction risk to the private partner who is responsible for building the project to meet project goals. Because the public partner selects the site and typically provides a site description as part of a request for proposals, the public partner is responsible for fully characterizing the site, including constraints that may affect the design or ability to construct the project. The private partner may have justification for seeking a contract modification if undisclosed factors significantly change project construction. Instead of relying exclusively on the lowest bid, design-build selection is usually based on the "best value" bid using preliminary design documents. While the contracting effort and oversight required by the public party is reduced compared to conventional procurement, the public partner should provide significant design review and construction oversight to ensure that the project is sufficiently practical to operate and maintain.

Private Partner Responsibilities: The private partner brings both engineering and construction expertise to fulfill the responsibilities of designing a project that is buildable, given known site constraints. The final project approval typically involves meeting rigorous construction inspections and may require the private partner to demonstrate the project is functioning to specifications. This may include maintaining the site for one to three years, conducting initial monitoring, reporting initial results, and using this initial performance feedback to optimize the project to meet performance specifications.

Design-Build-Operate & Maintain

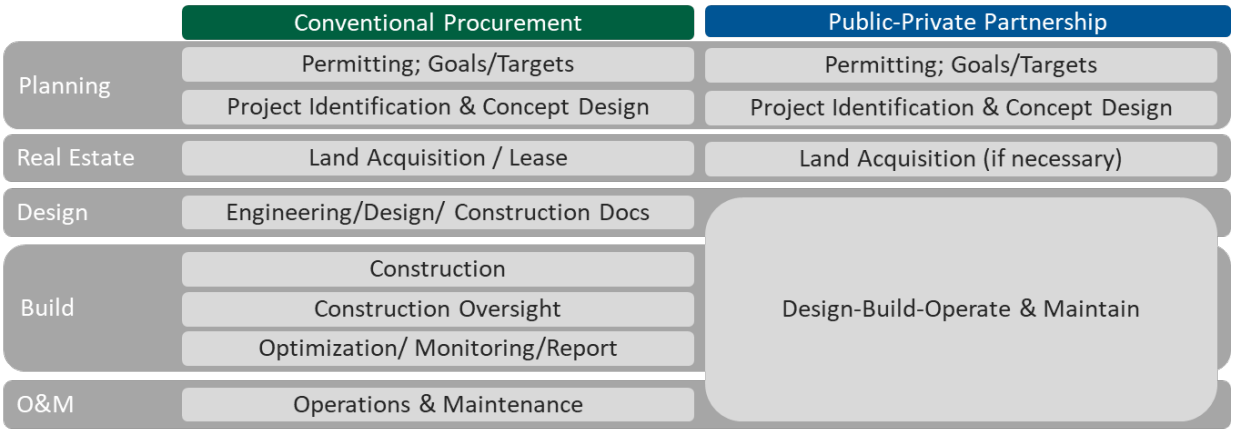


Figure 3: Comparing the Design-Build-Operate and Maintain CBP3 contract arrangement to conventional procurement. This structure engages a private partner to be completely responsible for using a pre-selected site to generate stormwater and community benefits. The private partner is responsible for designing a project that they can construct and maintain over time. The public partner is responsible for selecting the site and, if not already on public land, purchasing or gaining rights to the site.

The Design-Build-Operate and Maintain structure is viable when publicly owned land is identified as an effective site to implement a stormwater project and the public entity cannot efficiently maintain the site, or the public entity desires to transfer the risk of maintaining the project to the private partner. Transferring the ongoing maintenance risk to the private partners may be particularly important if the project design includes innovative technologies that may result in unforeseen complications or may require special skills to maintain.

Public Partner Responsibilities: The public partner completes upfront site selection and site characterization. The public party provides oversight of the design, construction and maintenance of the project to ensure the private partner is delivering the desired outcomes. However, the level of public partner engagement can be less than in other structures, because the private partner is responsible for ensuring the project is practical to maintain and delivers ongoing performance. Instead of relying exclusively on the lowest bid, private partner selection usually is based on the "best value" bid using preliminary design documents.

Private Partner Responsibilities: The private partner brings engineering and construction expertise and maintains the necessary local presence to maintain the project over time. The private partner monitors and reports project performance, optimizes the project to ensure the project is delivering intended outcomes, and maintains the project to ensure ongoing performance.

A hybrid approach to Design-Build-Operate and Maintain involves the private partner holding the responsibility for maintaining the site for a decade or more and then the public partner assuming long-term maintenance. This structure includes the incentive for the private partner to design and construct the project for practical maintenance, while enabling the public partner future flexibility to determine the most cost-effective strategy to maintain the project, which is typically on public land, in the long-term.

Design-Build-Own-Operate & Maintain

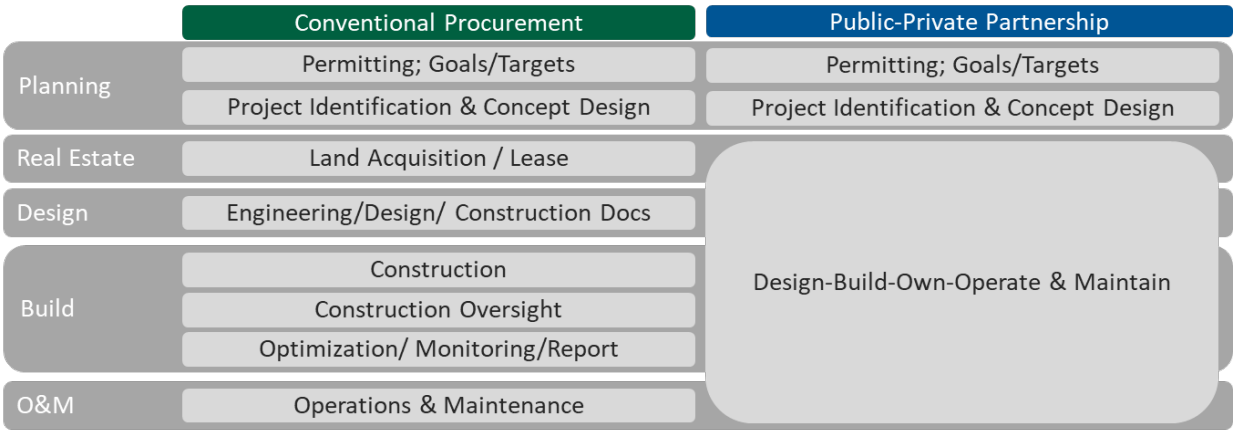


Figure 4: Comparing the Design-Build-Own-Operate and Maintain CBP3 contract arrangement to conventional procurement. This structure comprehensively engages a private partner to identify a project site and deliver the stormwater and community benefits over time. The public partner may be responsible for identifying the project site or the general location of a project within a watershed, but is not responsible for gaining rights to the site.

The CBP3 contract arrangements described above involve the land and stormwater asset being owned by the public partner. For example, projects located in the right-of-way often remain under public ownership. The Design-Build-Own-Operate and Maintain structure involves the private partner owning the land and the stormwater infrastructure on the land. Ownership in this context can be broadly defined as including arrangements when the private partner directly owns the land or the private partner secures rights to land owned by another private party, who for our purposes, becomes part of the private partnership. This structure enables the private partner to negotiate with existing private landowners to either purchase land or gain rights to construct stormwater infrastructure on land with other purposes. Examples of private partner land ownership includes: a private partner purchasing riparian farm land to perform stream restoration; and negotiating a lease or private easement with the owner of a shopping area to use parking areas to install bioswales or underground cisterns to capture, hold, and time the release of stormwater from surrounding properties, potentially including runoff from the public right-of-way.

The public partner should be granted access to the property to perform inspections, as needed. However, it may cause liability issues for the public partner to actively maintain the stormwater infrastructure on private land. Thus, ongoing maintenance is the responsibility of the private partner in this structure.

> **Public Partner Responsibilities:** The public partner leads the regional planning that includes identifying general areas within watersheds where projects are likely to be effective. Beyond general planning, however, the primary responsibility of the public partner is to ensure that the private partner delivers the stormwater and other community benefits.
>
> **Private Partner Responsibilities:** The private partner defines and delivers all aspects of the project from siting to design, construction and ongoing maintenance. The private partner monitors and reports project performance, optimizes the project to ensure the project is delivering intended outcomes, and maintains the project to ensure ongoing performance.

The city of Spokane's Olmstead Brother project provides an example of Design-Build-Own-Operate and Maintain as highlighted in the following case study.

Case Study: Olmstead Brothers Project[9,10,11]

Purpose: The Olmstead Brother Green Park on Summit and Nettleton treats then infiltrates stormwater to reduce untreated stormwater discharges to the Spokane River.

Structure: The city of Spokane partnered with a private developer to develop a project that treats runoff from the private development and city streets using a Low Impact Development infiltration facility. The private developer constructed the pipe connecting to the treatment facility and will maintain the treatment facility, which is in a park that is part of a private development and owned by the private partner. The city funded a portion of the cost of the project.

Results: This project sets a local precedent for sharing of costs and maintenance between the public and private parties. Infiltration is assessed annually to determine effectiveness.

What are Potential Alternative CBP3s?

CBP3s enable flexibility and innovation. Thus, any combination of CBP3 contract arrangements and roles can be crafted to optimize risk sharing and efficiencies between public and private partners. The following is a brief description of alternative CBP3 contract arrangements that modify the arrangements above.

Include Land Acquisition and Transfer with Design-Build

The California Department of Water Resources request for proposals for Delta Smelt Habitat requires the private partner to acquire land, design, and build a project. After meeting performance criteria, the land is transferred to the state of California, making the real estate acquisition part of the private partner responsibilities, but the ultimate land ownership with the public partner[12,13]. This is also a common transaction model that environmental nonprofit organizations use to purchase land for conservation and transfer ownership to a government agency.

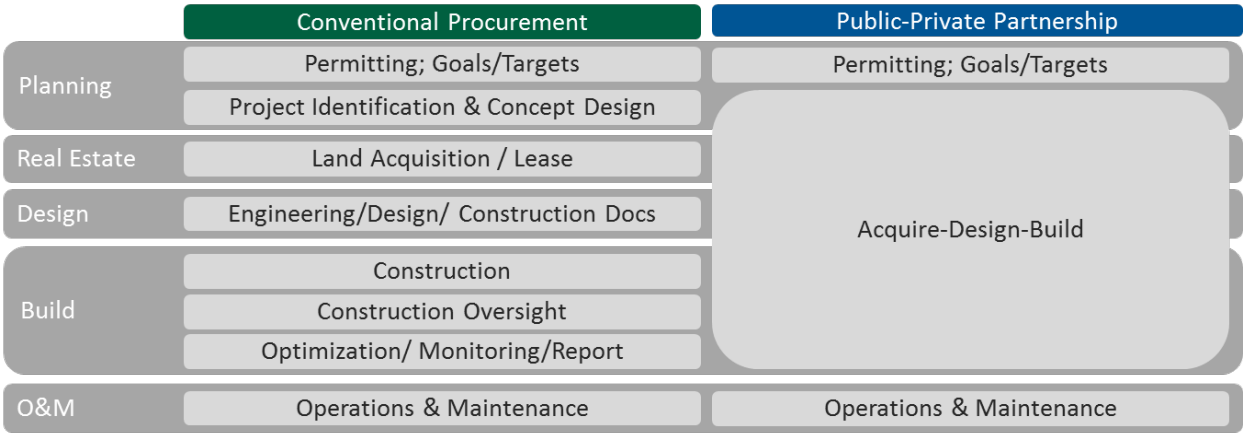


Figure 5: Comparing a version of the Design-Build CBP3 contract arrangement that includes real estate acquisition to conventional procurement. This structure comprehensively engages a private partner to identify a project site and deliver the stormwater and community benefits over time. After meeting construction performance milestones, the land and infrastructure ownership are transferred to the public partner, which maintains the project over time.

[9] "Olmstead Brothers Green – Managing Stormwater & Reducing Pollution" Department of Ecology State of Washington. In Print.
[10] "Summit Nettleton Infiltration Facility Project" City of Spokane. In Print.
[11] Phone calls and emails with Marcia Davis, City of Spokane.
[12] California Department of Water Resources. Request for Proposal Secondary, RFP II #10127576. December 20, 2016.
[13] Smith, Tim. Contracting for Habitat Restoration Request for Proposals – Paying for Success. Presentation given September 19, 2017 at Conservation in the West - Pay for Performance Workshop. Reno, NV.

Programmatic Design-Build-Operate and Maintain

Notable examples of programmatic CBP3 exist where the private partner holds the responsibility to deliver any number of projects necessary to meet an overall level of stormwater improvement. This involves the private partner identifying project locations, negotiating with private landowners, designing and building projects, and maintaining projects for at least some duration. The Prince George's County CBP3 summarized in the case study above is the most well-sited of these CBP3 contract arrangements.

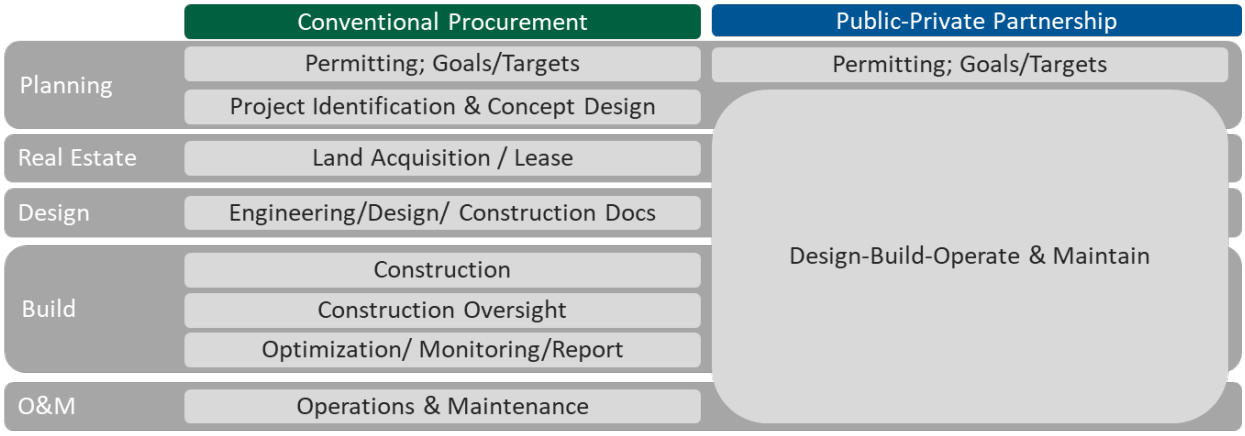


Figure 6: Comparing a version of the Design-Build-Operate and Maintain CBP3 contract arrangement that includes programmatic selection and delivery of projects to conventional procurement. This structure comprehensively engages a private partner to identify a portfolio of project sites and deliver the stormwater and community benefits over time.

Private Stormwater Credit Markets

Private stormwater credit markets create the potential for private parties to generate credits that can be sold through a competitive market. Typically, the buyer is intended to be another private party needing credits to offset post-construction development requirements that they do not meet on-site. While these private parties are generating stormwater benefits that serve a public good, the public sector plays a regulatory role and is not an active partner. Thus, these transactions are not considered P3s.

Typically, a permittee, such as a city or county, establishes stormwater credit markets, and private developers use them to offset post-construction development requirements and generate credits to sell. While the city or county establishes the market, the state permitting agencies must approve the use of the market to fulfill permittee's NPDES permit requirements. In Washington, such credits would generally need to remain tied to projects within the same local watershed.

WHAT ARE THE PAYMENT TERMS USED IN CBP3 CONTRACTUAL ARRANGEMENTS?

Unlike a toll road or sports arena, no one pays to use a stormwater capture or treatment project at the moment it is being used to treat their runoff. Thus, stormwater projects cannot benefit from point-of-use user fees. As a result, this assessment does not consider "concessions" and "lease-like arrangements" that may be found in transportation or water supply P3 analyses.

Contractual arrangements define the payment terms for which the public partner pays the private partner.[14] Payment terms can range from payments for completion of project activities, which is typical of conventional procurement approaches, to holding all payments until after a project is fully delivered and verified to be producing water quality benefits at the level specified in the contract.

[14] "Pay for Performance Contract Mechanisms for Stormwater Management" Environmental Incentives Technical Brief. https://enviroincentives.com/wp-content/uploads/2017/05/Pay-for-Performance-Contract-Mechanisms-for-Stormwater.pdf

Figure 7 shows the relative risk borne by the public partner versus the private partner, for the payment terms described in this assessment. Overall, the more payments are linked to verified project outcomes the greater the risk borne by the private partner and less risk assumed by the public partner. In general, as the private partner takes on more risk, the private partner expects a greater potential financial reward. This does not necessarily mean that overall costs increase. The potential for greater implementation efficiency is important for the contractual arrangement to be economically viable for both the public and private partner.

Figure 7: Places different contract payment terms on a spectrum from payments linked primarily to completing project activities to payments entirely linked to verified performance outcomes. Geen box indicates conventional activity-based payment terms, blue boxes indicate performance contracts or payments that are not possible without verified performance, and teal is a combination of activity-based and performance-based contracting. The term Stormwater Credit Market is used instead of Entrepreneurial Banking for clarity, but the terms are interchangeable.

The following subsections describe conventional activity-based payment terms followed by two types of performance contracting payment terms. Full delivery contracts are described, which pay the private partner after the project is complete and functioning; and partial pay for performance, which blends terms from activity-based and pay for performance approaches. Then, the potential to use stormwater credit markets to purchase stormwater credits directly is explored. Finally, the potential role of green bonds and environmental impact bonds is put in context of CBP3s.

Conventional Activity-Based Payments

Conventional procurement contracts typically define payment terms linked to completion of scoped tasks or construction milestones. Design contracts frequently use time and materials payment terms, which define payment by the time spent working on the project, independent of the project outcomes. Construction contracts may link payments to meeting pre-defined construction milestones that also may be linked to inspections. Up to 10 percent of a construction contract may be held until all deliverables are complete and deemed acceptable; however, acceptability is not typically directly linked to the measured performance of the project relative to quantified water quality or community benefits.

Activity-based payments typically are priced by estimating costs to complete the defined activities and marked up to cover the overhead costs and potentially a margin for profit for the private partner. It is possible for the private partner to lose money if expenses are greater than originally included in the price. However, because payment is tightly linked to expenses, it is frequently possible to justify the increased expenses and gain a change order that covers the increased costs and increases the total profit from the project.

As a result of payments not being linked to final project performance and the potential for cost over-runs to be passed on to the public partner, the public partner holds relatively more risks with activity-based payments when compared to performance-based payments.

Performance-Based Payments

Pay for performance contracts (performance contracts) base payment on a defined performance metric that reflects the quality of project delivered. Performance contracts are critical component of CBP3s. Paying for verified performance creates financial incentives for project implementers to determine the most cost-effective ways to achieve and maintain project benefits, while reducing the risk of taxpayer dollars funding projects that do not produce desired results. Furthermore, by focusing on verified outcomes, performance contracts create opportunities for private partners to profit if project benefits are cost-effectively achieved. Three key components differentiate performance contract terms from activity-based payment terms:

Performance Metrics that define a consistent and repeatable method to measure the quantity and quality of performance (e.g., volume retention, load reduction, directly connected impervious acres treated).
Verification Processes that define who, how, and when performance is assessed.
Performance-Based Payment Terms that define the portion of payment linked to verification of environmental outcomes using the performance metric.

Project delivery contracts can include financial penalties for not meeting a defined delivery schedule or inspection requirements. Contracts with financial penalties linked to a project delivery schedule can be considered performance-based; however, performance contracts for the purpose of this assessment link payment to a metric that reflects the quality of project delivered.

Full Delivery

Full delivery contracts tie payments to verified performance. The contract defines an agreed-upon price per unit of performance delivered by constructed projects, using a defined performance metric. The private partner must finance project implementation. If the project fails to perform, the public partner does not pay.

This approach minimizes the risk to buyers while providing the producer with a purchase contract they can use to secure capital to finance project implementation. The contract terms may specify the maximum number of credits the buyer is contracted to purchase. If the project generates more credits, the producer may have the option to sell the excess credits to other willing buyers.

Anne Arundel County, Md., reduced the cost per acre of its stormwater projects and shifted financing costs and risks to the private party though use of performance contracts as highlighted in the case study below. Washington state's permits do not include a similar requirement to treat a certain percentage of impervious area; instead, permittees prioritize their retrofit projects according to local conditions and community interests.

Case Study: Anne Arundel County, Md.

Purpose: To meet permit requirements (treatment of 20 percent of the untreated impervious area within the county), funds are awarded in five cycles through a request for proposal (RFP) for full delivery of water quality benefits.

Structure: Applicants must provide their proposed price per impervious acre treated, and price per pound of nitrogen, phosphorus, and sediment reduced. Payment to project implementers are to be made in two phases: 1) upon completion of implementation, and 2) at the end of a two-year O&M term[15,16].

Results: Proposals received included stream restoration, stormwater facility retrofits, septic-to-sewer conversion, and re-forestation. Cycle one treated approximately 188 acres for $3.8 million, and cycle two treated approximately 113 acres for $1.7 million. Implemented projects have shown a reduction in the cost per acre for several types of stormwater projects.

Practice	Pollutant	$/Unit Reduced
Bioretention Retrofit	Impervious Acre	$187k
Dry Pond Retrofit	Impervious Acre	$73k
Stream Restoration	Impervious Acre	$65k

Partial Pay-for-Performance

Partial pay for performance blends activity-based and performance-based contract terms. Payments linked to milestones provide initial payments to the private partner, reducing the need to finance the full cost of the project. Secondary payments are made depending on verified project performance. These payment terms are illustrated in Appendix 1 of the Pay-for-Performance Toolkit Contract Terms and Guidance document.

This strategy balances project performance risk between the public and private partners. The private partner requires less financing to implement the project, yet the secondary payment creates a strong incentive to deliver projects that perform in order to maximize payments. The secondary payment structure reduces the public partner's risk of funding an ineffective project, but the conservation buyer still assumes a significant portion of risk of the financial loss if the project does not deliver intended results. The amount of risk sharing is determined by the portion of funding that is paid upfront versus the portion paid upon verification of conservation outcomes.

Montgomery County, Md. is implementing partial pay for performance terms in a P3 contract arrangement using a penalty rather than a secondary payment as described in the following case study.

Case Study: Montgomery County, Md.

Purpose: To generate water quality and pollutant removal credits, Montgomery County released an RFP for a programmatic Design-Build-Own-Operate and Maintain P3 to cost-effectively implement BMPs and stream restoration projects.

Structure: The contract terms use activity-based payments, but introduce project performance into the P3 contract by imposing penalties for non-performance through an RFP clause on liquidated damages. Damages are assessed for under-delivering verified credits on a specific time schedule[17].

Results: Maryland Department of Environmental Protection's Watershed Restoration, Inspection, and Maintenance Programs are national leaders in treating stormwater generated from untreated impervious surfaces for more than a decade (over 5,000 acres). How Montgomery County's new contract will contribute to this target remains to be seen.

[15] Michelsen, Erik. Catalyzing Environmental Markets to Accelerate the Implementation of Chesapeake Bay Clean Water Goals: Lessons from Anne Arundel County's Full Delivery Solicitations. Presentation to the Baltimore City Stormwater Remediation Fee Oversight Committee. September 24, 2018.

[16] Anne Arundel County Maryland, Office of Central Services Purchasing Division. Full Delivery of Turnkey Water Quality Improvements FY19 RFP No. 19-019R. September 24, 2018.

[17] Montgomery County Department of Environmental Protection. Design, Build, and Maintenance of Stormwater Projects for Water Quality Credits, Request for Proposals No. 1088211. October 4, 2018.

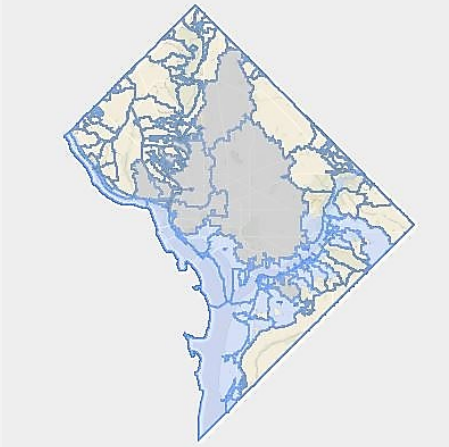
The Pay-for-Performance Toolkit Contract Terms & Guidance document and the Pay-for-Performance Contract Mechanisms for Stormwater Management document provide detailed descriptions of when each PFP strategy is appropriate and how it is applied in practice. Evaluation criteria identify how public and private partner familiarity with performance contracts, funding availability, the ability to quantify performance, and stakeholder perceptions influence the viability of different performance-based payment terms. In regions lacking experience with pay-for-performance strategies, it may be necessary to start with a strategy in which public partners bear more risk, such as a partial pay for performance. Once pollutant load reductions are well defined and permittees, private property owners, and a network of stormwater professionals understand how to price risk, full delivery contracts can increase efficiency of managing stormwater at scale.

Stormwater Credit Purchases

When a public entity purchases verified stormwater credits through an open credit market, it is effectively engaging in a Design-Build-Own-Operate and Maintain structure. If stormwater credits already are being generated from a project that meets verification standards, then the public entity is taking on no construction risk and minimal risk related to ongoing maintenance. Contract terms that define penalties if credits are not generated in the future can mitigate risk.

In the District of Columbia, the stormwater utility developed a "price lock" or buyer-of-last-resort guarantee to encourage private parties to develop stormwater retention credits and create liquidity in the private market. The purchase agreement identifies the price and number of years at which credits can be sold to the buyer and all of the rules, timeframes, and performance requirements that must be met for the buyer to make the purchase. Prices are established intentionally at a level that is low, and the seller is not required to sell the credits under the contract. This creates a price floor for the private party, reducing the risk of not finding any demand for credits, while the private party seeks buyers willing to pay a higher price for credits[18].

Case Study: DC Stormwater Retention Credit Price Lock Program



Purpose: The District of Columbia Phase I NPDES permit includes a post-construction stormwater retention performance standard. This standard is the basis for defining a volumetric stormwater retention credit (SRC) that can be traded between private partners.

Structure: Through the Price Lock Program, eligible credit generators have the option to sell SRCs to DOEE at fixed prices. SRC generators can participate without losing the option to sell to another buyer. The option to sell to DOEE effectively constitutes a price floor in the SRC market and offers certainty about the payment for an SRC-generating project.

Results: As of May 2018, five large rain gardens were completed that together have the capacity to, in a single storm, prevent more than 92,000 gallons of polluted stormwater runoff from reaching the Anacostia River. This is the largest voluntary SRC-generating project in the district to date. DOEE has made an initial commitment of $11,500,000 to purchase SRCs through this program, and several other projects are already underway.

Ecology's "Stormwater Management Manual" for Western Washington provides extensive guidance for design of regional facilities. The manual provides a framework for projects within Ecology's current regulatory framework.

[18] SRC Price Lock Program. Department of Energy & Environment, DC.gov, https://doee.dc.gov/service/src-price-lock-program.

Green Bonds and Environmental Impact Bonds

Green bonds are financing mechanisms for capital improvements and other activities that are deemed green. Green bonds are attractive to investors that desire to invest their money in projects with environmental benefits; however, financially they are no different than typical municipal bonds. Green bonds are not P3s; however the funding generated by green bonds can be used to fund CBP3s[19].

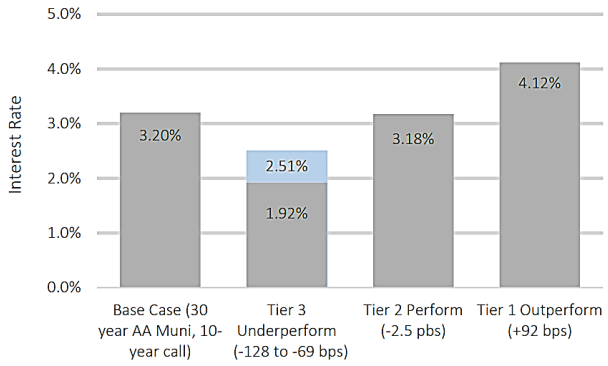
An environmental impact bond is a project financing mechanism that involves a private lender assuming some risk related to the performance of one or multiple projects. The bond holder may be the public or the private partner, but the ultimate payer is the public partner that pays more or less, depending on quantified project performance. Environmental impact bonds are not necessarily P3s. For example, the DC Water Environmental Impact Bond is a financing mechanism. DC Water uses a conventional project delivery approach with contracts that define activity-based payments. Similar to green bonds, the funding generated by environmental impact bonds issued by a public entity can be used as the funding for CBP3s. Further, if the bond holder is the private partner, then the relationship between the public payer and the private project implementer is typically structured as a CBP3 with some version of performance contract payment terms.

Case Study: DC Water Environmental Impact Bond

Purpose: In May 2015, DC Water entered an agreement with the Department of Justice and the Environmental Protection Agency that permitted DC Water to implement large-scale green infrastructure installations and determine its effectiveness before committing to constructing a much costlier stormwater storage system.

Structure: DC Water designed an environmental impact bond to finance the first two green infrastructure projects. DC Water will pay for construction costs of the green infrastructure projects, and the environmental impact bond will be used to mitigate risks through a three-tiered performance-driven approach[20].

Graph 1: Potential Returns for the EIB



Results: If the highest performance tier is achieved, which constitutes a runoff reduction of greater than 41.3 percent, DC Water will make an outcome payment to investors in the amount of $3.3 million. If the green infrastructure project results in the lowest performance tier, which constitutes less than 18.6 percent runoff reduction, investors will reduce the bond repayment interest by $3.3 million. Lastly, if the middle performance tier is achieved, which constitutes 18.6 percent to 41.3 percent runoff reduction, no adjustments are made to bond repayments.

WHAT ARE THE POTENTIAL BENEFITS OF A CBP3?

The CBP3 model evolves the standard P3 contractual mechanism into a true partnership that focuses on improving water quality and a community's quality of life. Implementation of CBP3s can have many potential benefits including:

19 "Green Bonds and Pay for Performance." Pay for Performance Toolkit, Environmental Incentives, www.enviroaccounting.com/payforperformance/Program/Display/greenbonds.
20 US Environmental Protection Agency. DC Water's Environmental Impact Bond: A First of Its Kind. April 2017. https://www.epa.gov/sites/production/files/2017-04/documents/dc_waters_environmental_impact_bond_a_first_of_its_kind_final2.pdf

Expedited Project Delivery: The CBP3 contract arrangements described in this section define how multiple conventional procurement phases can be contracted at once, saving the administrative costs associated with contracting steps and streamlining project implementation timelines. In addition, stormwater projects, like all capital projects, often face delays. CBP3 contracts accelerate implementation by incentivizing private parties to meet deadlines. The CBP3 model develops a strong, long-term partnership between the permittee and the private party, creating shared risk burden and greater accountability.[21]

Investment in Underserved Communities: Investment in green infrastructure through CBP3s can create "green jobs" leading to economic growth. Collaboration with local colleges through CBP3s can lead to educational opportunities. Aesthetic benefits of implemented projects improve the quality of life in urban and underserved communities. CBP3s have the potential to help many communities optimize their limited resources through agreements with private parties to help build and maintain not only stormwater infrastructure needs, but other public infrastructure as well.[22]

Increased Scale of Implementation: By reducing the number of contracting steps and increasing the responsibility of the private partner, less public partner staff time is required to deliver stormwater projects. Combined with the other contracting and project delivery efficiencies described in this section, CBP3s enable stormwater improvements to be delivered at greater scale with the same number of state or local agency staff when compared to conventional contracting.

Share Risk and Align Incentives: The CBP3 contract arrangements shift project implementation risk from the public to the private partner, compared to conventional procurement. This reduces the risk that cost over-runs are passed on to the public and increases the incentive for the private partner to control costs. Linking payments to verified project performance reduces the risk that public funds are invested in projects that underperform, by reducing the amount paid to the private partner proportional to the fraction of expected project performance that is actually delivered.

Expand Expertise & Innovation: CBP3s can engage private partners with technical expertise and the inclination and incentives to innovate with emerging technologies and practices that can cost-effectively capture and treat stormwater. This can be done without putting public funds at risk. The more a community can define its desired goals and outcomes, the better the private party can provide value through a P3.

Increase Opportunities for Implementation: Private partners can flexibly negotiate terms with private landowners for use of private property in stormwater projects. Public procurement policies typically result in slow real estate negotiations that may not result in a price or terms that are acceptable to private landowners.

Cost Savings: The efficiencies brought by CBP3s hold the potential for private partners to achieve a reasonable profit while reducing the costs to the public sector. Prince George County and Anne Arundel County are reporting 22 percent to 40 percent cost reductions when comparing the full cost

21 "Financing Green Infrastructure - Is a Community-Based Public-Private Partnerships (CBP3) Right for You?" EPA, Environmental Protection Agency, 30 July 2018, www.epa.gov/G3/financing-green-infrastructure-community-based-public-private-partnerships-cbp3-right-you.

22"Financing Green Infrastructure - Is a Community-Based Public-Private Partnerships (CBP3) Right for You?" EPA, Environmental Protection Agency, 30 July 2018, www.epa.gov/G3/financing-green-infrastructure-community-based-public-private-partnerships-cbp3-right-you.

of delivering projects by each county using conventional procurement approaches, compared to the CBP3 and a full delivery pay for performance contract structure, respectively.[23,24]

Access Private Project Financing: Certain private partners can finance part or all of the project delivery costs. This enables projects to be implemented before public funds are available to pay for the projects. The basic decision for whether to use a P3 that requires significant private capital is the value of risk transfer to the higher cost of private capital.[25]

[23] Michelsen, Erik. Catalyzing Environmental Markets to Accelerate the Implementation of Chesapeake Bay Clean Water Goals: Lessons from Anne Arundel County's Full Delivery Solicitations. Presentation to the Baltimore City Stormwater Remediation Fee Oversight Committee. September 24, 2018.

[24] Presentation, A Different Approach to Stormwater Management.

[25] Susilo, K. J & Stahl, L. (2018). *Public-Private Partnerships: A New Solution for Age Old Stormwater Problems?* P3C Media (www.p3water.com) May, 2018. https://s3.amazonaws.com/bizzabo.users.files/116443/206198/677655/P3%20Stormwater_White%20Paper_2018.final.pdf

III. Feasibility Assessment of Community Based Public-Private Partnerships for Washington

This assessment of permittee categories is intended to determine the likelihood that a stormwater permittee within each category has the conditions to leverage a large-scale CBP3 to meet their green infrastructure needs. The results of the permittee category assessment are intended to assist the Department of Commerce with developing a targeted pilot CBP3 program. The results include ratings for each permittee category and assessment criteria, as well as rationale supporting the ratings and additional findings that are useful for designing and implementing a pilot CBP3 program.

ASSESSMENT APPROACH

State and local agencies that are subject to NPDES permits vary in their capacity and likelihood of using CBP3s to meet permit requirements or to promote retrofit projects above and beyond permit requirements. This assessment does not evaluate each of the more than 115 active municipal stormwater NPDES permittees in the state. Instead, this assessment groups permittees with common characteristics into categories, and **assesses each permittee category**. Characteristics for grouping permittees include geographic location (e.g. eastern, western Washington), agency type (e.g. state, city, county, port), and permit type (e.g. Phase I, Phase II).

The **assessment applies four criteria** due to their critical role in enabling CBP3s:

1) **Implementation Scale** – A CBP3 as defined for this assessment must have meaningful scale in order for the delivery partner to take on project delivery risk and maximize environmental and community benefits.
2) **Sustainable and Predictable Revenue –** A CBP3 as defined for this assessment must have predictable and meaningful revenue source(s) to commit to address annual budget constraints and commit to long-term funding.
3) **Legal Authority and Risk Appetite –** A CBP3 as defined for this assessment requires flexible procurement and contracting terms, as well as a willingness by the permittee to implement non-traditional contractual arrangements.
4) **Measurement and Verification –** A CBP3 as defined for this assessment requires metrics and verification protocols that ensure the desired outcomes of the project are met, and are suitable to all participants involved.

Community benefit, a critical component of CBP3s, is not assessed but findings related to community benefits are provided below.

Each assessment criteria is applied to permittee categories using a **rating scale** with the following options: Almost Certain, Likely, Possible, Unlikely, and Rare. Criteria-specific definitions are provided for Almost Certain, Possible, and Rare in the following criteria-specific subsections; Likely and Unlikely may be applied when a permittee category falls between the bordering ratings.

Structured interviews with staff from strategically selected permittees (Table 1), research into legal and regulatory issues, and project team experience designing and implementing CBP3s and other alternative project delivery mechanisms in a wide-range of contexts inform this assessment. Multiple staff from several permittees participated in the interviews to provide perspective and expertise from multiple departments. The interview template for conducting interviews is in Appendix A: Interview Template.

Table 1. State and local agencies interviewed to assess permittee categories

PERMITTEE CATEGORIES	PERMITEES INTERVIEWED
Western WA, Phase I, City	City of Tacoma, Seattle Public Utilities
Western WA, Phase I, County	King County
Western WA, Phase II, City	City of Redmond, City of Olympia
Western WA, Phase II, County	Kitsap County
Eastern WA, Phase II	City of Spokane
WSDOT	Washington State Department of Transportation
Port	Northwest Seaport Alliance

This assessment is intended to determine the likelihood that a stormwater permittee associated within each category has the conditions to leverage a large-scale CBP3 to meet their green infrastructure needs. In addition, interviews of a relatively small subset of permittees informs the assessment of permittee categories herein. Therefore, ratings given to a category should not be applied automatically to all associated permittees.

IMPLEMENTATION SCALE

The Implementation Scale criteria assesses the likelihood that a permittee category will develop green infrastructure at a meaningful scale in the next five years compared to other permittee categories.

The rating definitions in Figure 8 rate and differentiate permittee categories for the Implementation Scale criteria. Definitions are not described for the Likely and Unlikely ratings referenced in the Assessment Approach section above; however, those ratings apply when a permittee category falls between the bordering ratings.

Almost Certain	Permittees are almost certain to build significant green infrastructure encompassing multiple large projects and/or dozens of smaller projects in the next five years
Possible	It is possible that permittees will build significant green infrastructure encompassing multiple large projects and/or dozens of smaller projects in the next five years
Rare	It is rare that permittees will build significant green infrastructure encompassing multiple large projects and/or dozens of smaller projects in the next five years

Figure 8: Rating scale for Implementation Scale criteria

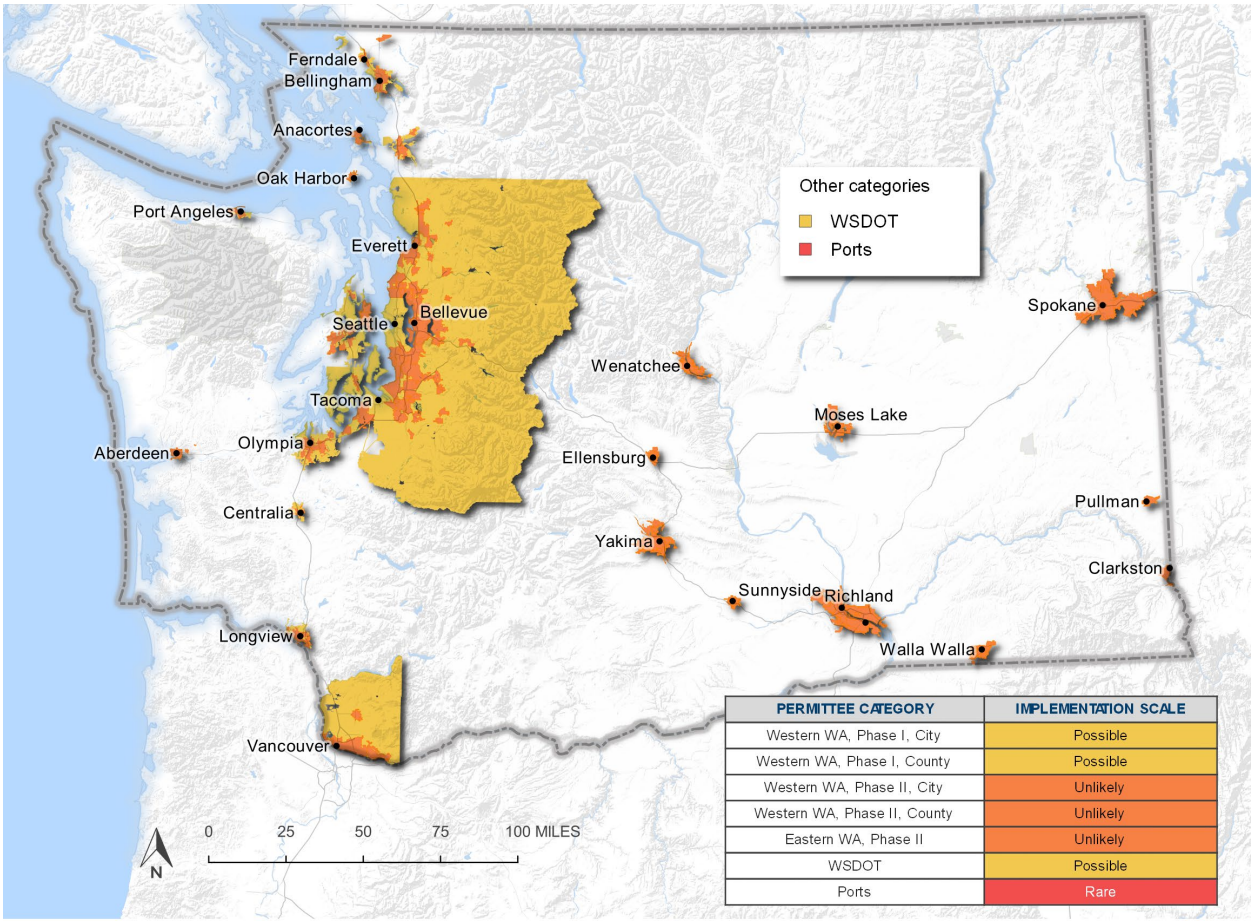
The primary drivers that determine if a permittee category will build significant green infrastructure in the next five years are the extent of retrofit project prioritization, the amount of runoff that must be treated from existing infrastructure, and the need to generate more environmental and community value from limited area.

Table 2 contains the assessment of each permittee category using the Implementation Scale criteria as well as rationale for the assessment. The current permits are being reissued in 2019, and new retrofit planning requirements were proposed in the formal drafts.

Table 2: Assessment of permittee categories using Implementation Scale criteria

PERMITTEE CATEGORY	IMPLEMENTATION SCALE RATING	RATIONALE
Western WA, Phase I City	**Possible**	Permittees have prioritized retrofit projects, and they are responsible for runoff from significant infrastructure; however, there is no requirement to build significant green infrastructure outside of new development in the next permit cycle and implementation in the next five years will vary significantly based on each permittee's prioritization of green infrastructure.
Western WA, Phase I County	**Possible**	Permittees have prioritized retrofit projects, and they are responsible for runoff from significant infrastructure; however, there is no requirement to build significant green infrastructure outside of new development in the next permit cycle and implementation in the next five years will vary significantly based on each permittee's prioritization of green infrastructure.
Western WA, Phase II City	**Unlikely**	Permittees are unlikely to have prioritized retrofit projects, and they are responsible for runoff from relatively minimal to moderate infrastructure; however, several permittees are planning to build meaningful green infrastructure and have relatively meaningful impervious surfaces within their jurisdiction.
Western WA, Phase II County	**Unlikely**	Permittees are unlikely to have prioritized retrofit projects, and they are responsible for runoff from relatively minimal to moderate infrastructure; however, several permittees are planning to build meaningful green infrastructure and have relatively meaningful impervious surfaces within their jurisdiction.
Eastern WA, Phase II	**Unlikely**	Permittees are unlikely to have prioritized retrofit projects, and they are responsible for runoff from relatively minimal to moderate infrastructure; however, it is possible there will be a few exceptions planning to build meaningful green infrastructure and have relatively meaningful impervious surfaces within their jurisdiction.
WSDOT	**Possible**	WSDOT has prioritized retrofits state-wide, they are responsible for runoff from significant infrastructure, and have preference for green infrastructure (where feasible) in their manual; however, they currently have 8 retrofit projects planned for the next five years and have limited, if any, experience developing green infrastructure outside of the ROW.
Port	**Rare**	As secondary permittees, ports are unlikely to have prioritized retrofit projects, and they are responsible for runoff from relatively minimal infrastructure so they are unlikely to implement many green infrastructure projects, and the high economic value of surface area for freight in ports makes traditional green infrastructure rarely economically feasible.

The map in Figure 9 contains all permittees in the state and the Implementation Scale rating associated with each permittee category in Table 3.



PERMITTEE CATEGORY	IMPLEMENTATION SCALE
Western WA, Phase I, City	Possible
Western WA, Phase I, County	Possible
Western WA, Phase II, City	Unlikely
Western WA, Phase II, County	Unlikely
Eastern WA, Phase II	Unlikely
WSDOT	Possible
Ports	Rare

Figure 9: Each polygon on the map represents a permittee included in the permittee categories assessed (or point in the case of Port permittees). Each permittee category is color-coded according to Implementation Scale assessment rating.

Implementation Scale Findings

Several permittees are expected to implement significant green infrastructure in the next five years, primarily Phase I permittees, and the scale of implementation will vary significantly among Phase I permittees depending primarily on the value that leadership and stakeholders put on the multiple benefits of green infrastructure.

- Multiple interviewees have meaningful green infrastructure plans and budgets for the next five years, including both Phase I and Phase II permittees.
- Phase I permittees were required to prioritize retrofit projects in the current permit cycle so they have a strategy for siting green infrastructure. Further, a subset of Phase I permittees also have CSO permits and integrated plans that create an additional incentive to implement green infrastructure. However, implementation of green infrastructure is not expected to be a requirement in the upcoming permit cycle for Phase I permits outside of limited application of the proposed Retrofit Incentive Program. Only a subset of Phase I permittees with leadership and stakeholders that believe the multiple benefits of green infrastructure are compelling will implement green infrastructure in the next five years.
- There are other permittee-specific factors that influence the green infrastructure implemented by a specific permittee in the next five years, such as the portion of their runoff that discharges into flow controlled receiving waters, property values, soil infiltration rates, soil contamination, and presence of aquifers used for drinking water.

There is not a meaningful differentiation in terms of implementation scale between Cities and Counties within the same permit category.

- The permit requirements are the same, and other differences identified offset each other in terms of overall implementation scale.
- Cities and counties are expected to implement different types of green infrastructure and may require different metrics to guide implementation and demonstrate success.

The availability of land to build green infrastructure is a constraint shared by many interviewees; leveraging land owned by other entities such as private landowners and school districts may provide economic and other benefits.

- Permittees interviewed have varying policies and experience related to developing green infrastructure on land owned by parties other than the permittee. Further, only a few examples of utilizing land owned by entities other than the permittee to treat significant runoff from existing development were shared during interviews.
- Implementing green infrastructure on land owned by other entities may unlock significant community, environmental, and economic benefits. However, other types of land owners may have concerns about directly partnering with a local or state agency due to a lack of confidence in the government's ability to deliver the project on schedule and avoid disrupting business operations, and a desire to avoid granting future access to government agencies to conduct inspections and coordinating with a government agency. A CBP3 can address these concerns by:
  - Creating greater accountability to both the local or state agency and the property owner related to schedule, cost, and indemnification from any damages or incidents that could occur.
  - Building maintenance requirements and cost into the CBP3 program and not pushed down to the property owner.
  - Providing property owner additional maintenance and property condition improvement that result in landscaping savings to the property owner and improved property beautification.
  - Buffering property owners from government inspectors.

SUSTAINABLE AND PREDICTABLE REVENUE

The Sustainable and Predictable Revenue (Revenue) criteria assesses the likelihood that a permittee category has the capacity to finance the initial capital costs and guarantee the long-term operations and maintenance costs of a CBP3 of meaningful scale compared to other permittee categories.

For the purpose of this assessment, the term "revenue" is used specifically for income that is ongoing and is not repaid (e.g., surface/stormwater utility rate). The term "funding" is used for income that is not necessarily ongoing (e.g., state appropriation or grant award) or must be repaid (e.g., loan).

The magnitude of annual revenue determines the amount that can be financed. For example, an annual revenue of $2 million means that $20 million or more of financing can be secured. The magnitude of annual revenue necessary for a specific CBP3 depends on the implementation scope of the CBP3, but for this assessment a minimum threshold of $2 million is used to determine if a permittee of a specific permittee category is likely to have enough revenue to do a large-scale CBP3.

The rating definitions in Figure 10 rate and differentiate permittee categories for the Revenue criteria. Definitions are not described for the Likely and Unlikely ratings referenced in the Assessment Approach section above; however, those ratings apply when a permittee category falls between the bordering ratings.

Almost Certain	Permittees are almost certain to have meaningful ongoing predictable revenue source(s) (e.g. > $2 million annually) that can be leveraged to finance green stormwater infrastructure
Possible	It is possible that permittees have or will create meaningful ongoing predictable revenue source(s) (e.g. > $2 million annually) OR can create such revenue source (e.g. stormwater utility rate) that can be leveraged to finance green stormwater infrastructure
Rare	It is rare that permittees will have or to create meaningful ongoing predictable revenue source(s) (e.g. > $2 million annually) that can be leveraged to finance green stormwater infrastructure

Figure 10: Rating scale for Sustainable & Predictable Revenue criteria

The primary example of a current ongoing predictable revenue source is a surface water/stormwater utility rate; however, other revenue sources can be utilized and multiple revenues sources and funding sources can be combined to finance a CBP3.

Table 3 contains the assessment of each permittee category using the Revenue criteria, as well as rationale for the assessment.

Table 3: Assessment of permittee categories using Sustainable & Predictable Revenue criteria

PERMITTEE CATEGORY	REVENUE RATING	RATIONALE
Western WA, Phase I City	**Almost Certain**	Most if not all permittees are expected to have ongoing revenue sources dedicated to stormwater generating more than $2 million annually.
Western WA, Phase I County	**Almost Certain**	Most if not all permittees are expected to have ongoing revenue sources dedicated to stormwater generating more than $2 million annually.
Western WA, Phase II City	**Unlikely**	Several permittees have ongoing revenue sources dedicated to stormwater generating more than $2 million annually; however, most permittees do not.
Western WA, Phase II County	**Unlikely**	Several permittees have ongoing revenue sources dedicated to stormwater generating more than $2 million annually; however, most permittees do not.
Eastern WA, Phase II	**Unlikely**	With a few exceptions, permittees will not have or be able to create ongoing revenue sources dedicated to stormwater.
WSDOT	**Possible**	WSDOT currently does not have an ongoing revenue source dedicated to stormwater that could be used to secure financing; however, WSDOT receives state funding to implement NPDES permit requirements, build stormwater treatment in new and re-development dedicated for stormwater retrofits, and implement stormwater retrofits.
Port	**Unlikely**	With very few exceptions, ports do not have ongoing revenue sources dedicated to stormwater. They do have robust revenue streams from rents and require leases to assist with fulfilling their permit requirements; however, they can only charge tenants so much before they become uncompetitive with other ports in the region.

The map in Figure 11 contains all permittees in the state and the Sustainable and Predictable Revenue rating associated with each permittee category in Table 3.

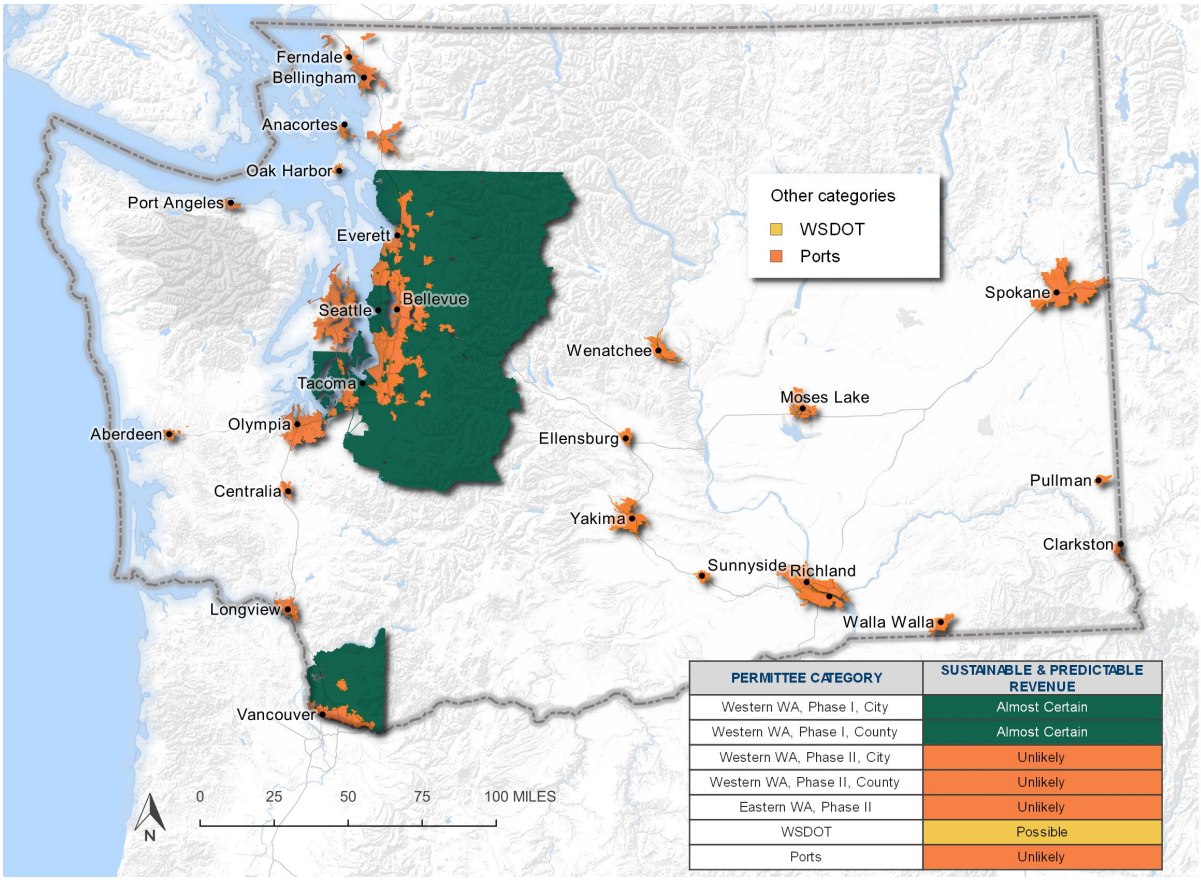


Figure 11: Each polygon on the map represents a permittee included in the permittee categories assessed (or point in the case of Port permittees). Each permittee category is color-coded according to Sustainable and Predictable Revenue assessment rating.

Revenue Related Findings

Phase I permittees are almost certain to have revenue sources adequate for a large-scale CBP3, and several Phase II permittees will as well; however, an adequate portion must be available to fund a CBP3.

- Ongoing, predictable revenue source(s) dedicated for stormwater management is typically necessary to finance the initial capital costs and guarantee the long-term operations and maintenance costs of a CBP3; however, annual revenue can be leveraged to secure up to 20 times as much funding so large CBP3s can be implemented with relatively smaller annual revenue levels.
- All Phase I permittees interviewed have surface water/stormwater rates that generate adequate ongoing revenue dedicated for stormwater management, as well as other revenue and funding sources.
- All Phase II permittees interviewed have adequate ongoing revenue dedicated for stormwater management; however, the Phase II permittees interviewed are larger in size and population than most Phase II Permittees in the state.
- Permittees' history and current use of debt to finance stormwater infrastructure varies significantly amongst permittees interviewed; however, most believed they are not currently using the entire revenue source to secure funding.

Only a few permittees interviewed shared ongoing, predictable revenue sources dedicated for stormwater management other than surface water/stormwater utility rates, and several permittees interviewed do not currently use debt to finance stormwater projects. Thus, permittees may be able to leverage other existing and new revenue and funding sources to finance a CBP3.

- Typically, an ongoing, predictable revenue source is necessary to finance a CBP3; however, other funding sources can be incorporated to fit the budget and financing needs. Combining multiple revenue (ongoing) and funding (one-time, or require repayment) sources, commonly referenced as "capital stacking", enables larger and multi-benefit projects. For example, a green infrastructure project that provides stormwater treatment and flood control management benefits can utilize a combination of stormwater utility rate and FEMA grant funds to finance capital and long-term maintenance of a CBP3.
- A variety of existing and new revenue sources can secure funding for CBP3s. For example, the following revenue sources are used to repay State Revolving Fund funding (and this is not an exhaustive list): private business revenue, carbon credits, equipment rentals, developer fees, homeowner association fees, non-profit membership fees, nutrient credits, nutrient impact fee, on-bill financing, permit fees, property tax, recreational or license fees, resort taxes/fees, severance taxes, sales of excess energy/energy savings performance contracting, sale of treatment process residuals, sale of water rights, sales of revenues, sales tax, special assessments, stormwater fees, tax revenues from contaminated site redevelopment, traditional state and local agency repayment sources (including user fees and tax and utility revenues), and watershed protection fees/taxes.
- Traditional government debt instruments can be useful, as well as additional instruments that are currently proposed to facilitate financing of green infrastructure. For example, U.S. Rep. Derek Kilmer (Port Angeles, WA-6) is sponsoring H.R.7041 to make green infrastructure a new category of tax-exempt Private Activity Bonds.
- Private financing (equity or debt) can be beneficial to some permittees by
  - Reducing cost to issue debt themselves since government issuance is costly.
  - Expediting project delivery and reducing administrative costs by securing financing faster than issuing debt themselves, which typically takes a government agency a year or more time.
  - Funding portions of a project that are not permitted by restrictive government bond and rating covenants.
  - Keeping the debt off their balance sheet to maintain their rating level and capacity to issue new debt.
  - Reducing the borrowing cost by leveraging the higher rating of a third-party debt issuer.
  - Accessing additional financing when alternative lower cost funding (e.g., Clean Water State Revolving Fund) is unavailable.
  - ***Note:*** Private debt financing can secure lower interest rates by using State Revolving Funds to guarantee the debt according to the 2014 Amendments to the Water Resources Reform and Development Act.

CBP3s can create significant cost savings that allow permittees to get more done with their existing revenue sources, decrease the amount of additional revenue needed, increase the term of maintenance, or increase the community benefits generated.

- CBP3s that implement green infrastructure programs can aggregate projects and increase scale of project delivery, which creates significant efficiencies that allow permittees to get more green infrastructure constructed with the same amount of funding. The cost savings can reduce the need for additional revenue, or can be reinvested into longer-term maintenance and/or other community benefits.

- Similar to energy efficiency investments, permittees can realize operations and maintenance cost savings by reducing insurance premiums, ROW landscaping/grass cutting, litter pickup, catch basin, and inlet cleanup.

LEGAL AUTHORITY AND RISK APPETITE

The Legal Authority and Risk Appetite (Legal and Risk) criteria assesses the likelihood that a permittee category has the legal authority and risk appetite to exercise nontraditional procurement of water pollution control from the private sector. The legal assessment was not comprehensive due to time and budget constraints, and the related findings should not be relied on as an alternative to legal advice from a professional legal services provider.

The rating definitions in Figure 12 rate and differentiate permittee categories for the Legal Authority and Risk Appetite criteria. Definitions are not described for the Likely and Unlikely ratings referenced in the Assessment Approach section above; however, those ratings apply when a permittee category falls between the bordering ratings.

Almost Certain	Permittees are almost certain to have the legal authority to contract with private companies to design, build, finance and maintain green infrastructure and exercise the complete range of contracting arrangements AND meaningful experience with nontraditional contracting including payments based on an outcome metric, 10-30-year contracts, and private companies providing land entitlement and public infrastructure operations and maintenance.
Possible	It is possible that permittees have the legal authority to contract with private companies to design, build, finance and maintain green infrastructure and exercise the complete range of contracting arrangements AND meaningful experience with nontraditional contracting including payments based on an outcome metric, 10-30-year contracts and private companies providing land entitlement and public infrastructure operations and maintenance.
Rare	It is rare that permittees have the legal authority to contract with private companies to design, build, finance and maintain green infrastructure and exercise the complete range of contracting arrangements AND meaningful experience with nontraditional contracting including payments based on an outcome metric, 10-30-year contracts and private companies providing land entitlement and public infrastructure operations and maintenance

Figure 12: Rating scale for Legal Authority criteria

The primary drivers that determine if a permittee category has the legal authority to exercise contract arrangements necessary for a CBP3 are the powers given to state and local agencies by the state of Washington, and legal authorities specifically denied to state and local agency by law. Specific statutes supporting the assessment of permittee categories appear in the findings below. The primary driver that determines risk appetite is experience and willingness to exercise nontraditional contracting arrangements related to payment terms, contact length, and partnering with the private sector to provide administrative and maintenance services.

Table 4 contains the assessment of each permittee category using the Legal Authority criteria, as well as rationale for the assessment.

Table 4: Assessment of permittee categories using Legal Authority criteria

PERMITTEE CATEGORY	LEGAL RATING	RATIONALE
Western WA, Phase I City	**Almost Certain**	All permittees have necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities, and all permittees are expected to have experience with a range of performance contracting structures, long-term contracts, and contracting a wide range of public services to private companies.
Western WA, Phase I County	**Almost Certain**	All permittees have necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities, and all permittees are expected to have experience with a range of performance contracting structures, long-term contracts, and contracting a wide range of public services to private companies.
Western WA, Phase II City	**Possible**	All permittees have necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities; however, most permittees are expected to have minimal experience with performance contracting structures, long-term contracts, and contracting a wide range of public services to private companies.
Western WA, Phase II County	**Possible**	All permittees have necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities; however, most permittees are expected to have minimal experience with performance contracting structures, long-term contracts, and contracting a wide range of public services to private companies.
Eastern WA, Phase II	**Possible**	All permittees have necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities; however, most permittees are expected to have minimal experience with performance contracting structures, long-term contracts, and contracting a wide range of public services to private companies.
WSDOT	**Unlikely**	WSDOT has necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities; however, WSDOT has performed most if not all long-term maintenance of green infrastructure themselves to date, and already has the administrative structure and expertise for their retrofit program.
Port	**Likely**	All permittees have necessary contracting authority based on powers vested by the legislature and other statutes intended to enable alternative contracting for pollution control facilities, and permittees are expected to have meaningful experience with long-term contracts and alternative contracting structures including contracting a wide range of services to private companies.

The map in Figure 13 contains all permittees in the state and the Legal and Risk rating associated with each permittee category in Table 4.

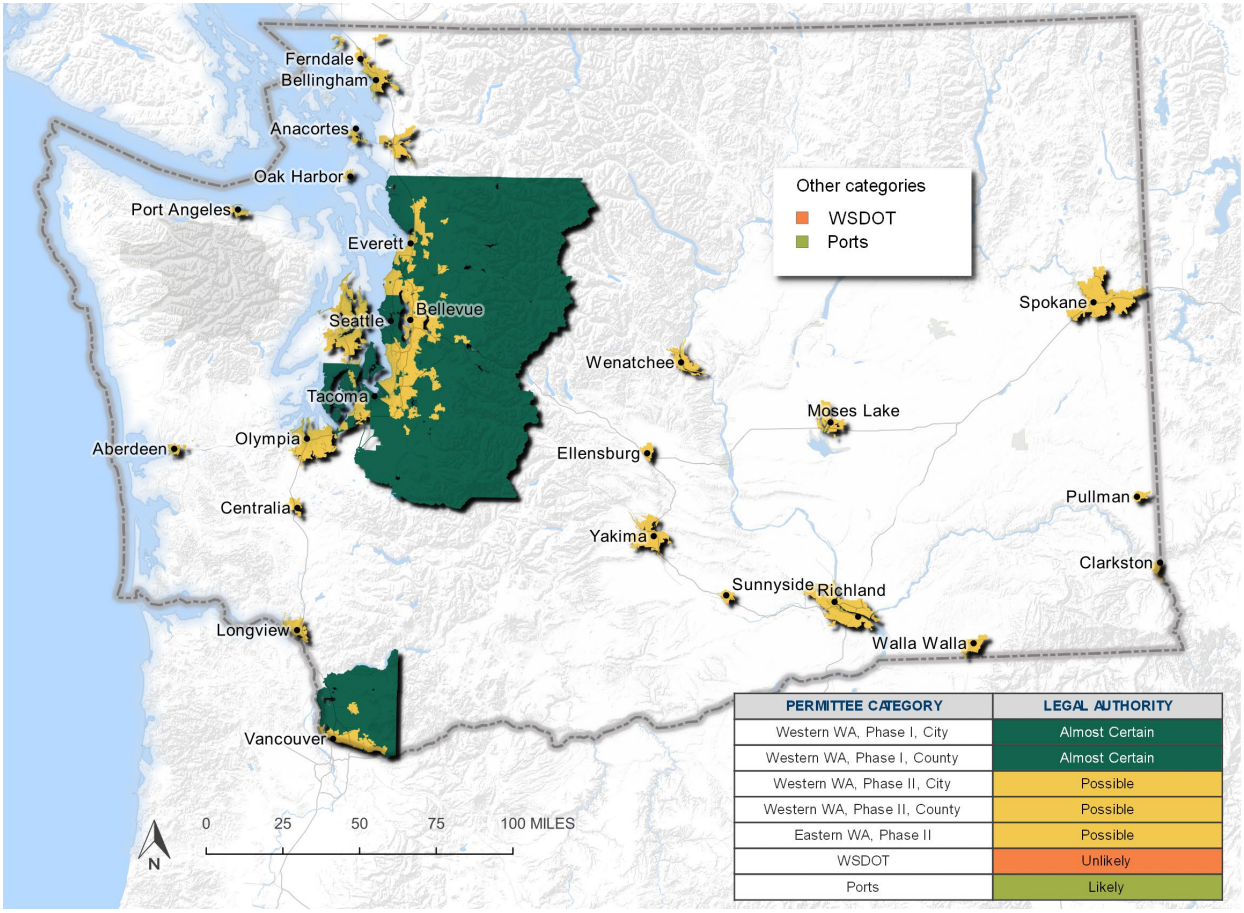


Figure 13: Each polygon on the map represents a permittee included in the permittee categories assessed (or point in the case of Port permittees). Each permittee category is color-coded according to Legal Authority and Risk Appetite assessment rating.

Legal and Risk Related Findings

The assessment does not identify specific legal barriers for state and local agencies to implement a CBP3, and there are statutes that are intended to facilitate alternative contracting arrangements for designing, constructing, and maintaining pollution control facilities.

- Procurement rules can be specific to a contract structure, and not a P3 or CBP3.[26] A P3 is not a contract structure but instead an industry name for an alternative delivery concept. A P3 can use various contract structures like a "design-build", "general contractor", "delegated contract", "concessionaire", "fixed firm price", etc. Thus, when evaluating the feasibility of a CBP3, it is important to identify the desired contract structure, then research procurement rules.
- Washington state law includes "competitive bidding", "lowest bidder", and "prevailing wages" contracting rules for public works projects.
  - RCW 39.04 defines public works contracting requirements for state and local agencies including a competitive bidding requirement. RCW 39.04.280 contains exemptions to competitive bidding such as in the event of an emergency.
  - RCW 39.04.010 requires local agencies to award public works contracts to a responsible bidder with the lowest responsive bid.[27]

[26] "P3 Bootcamp The Premier P3 Training Course" P3Bootcamp. Presentation.

27"Bidding and Awarding a Public Works Contract." MRSC, http://mrsc.org/getdoc/dd1e41fa-b042-4366-b3f6-4d16818433ad/Public-Works-Bidding-and-Award.aspx.

        - RCW 39.12.020 ("Prevailing rate to be paid on public works and under public building service maintenance contracts") requires local government contractors and subcontractors to pay prevailing wages to all workers for all public works and maintenance contracts, regardless of the dollar value of the contract.[28]
    - However, "competitive bidding", "lowest bidder", and "prevailing wages" should not be considered barriers to implementing a CBP3 as CBP3s are often implemented in accordance with these procurement rules.
        - The private partner of a CBP3 can be secured through a competitive bid process, and the program manager can also be required to conduct a competitive bid process when obtaining subcontractors.
        - CBP3 procurement should use a best value procurement approach, which satisfies common lowest-bidder requirements, whereby cost is a factor as well as the desired environmental and community outcomes (e.g. local jobs created), and thus the contractor is selected based on a comparison of costs and benefits.
        - CBP3s can conform to existing union agreements in place for maintenance of green infrastructure.
        - The Price George County CBP3 example in Section 2 incorporates all three of these procurement requirements.
    - Whereas, there are several statutes that may facilitate the implementation of a CBP3.
        - RCW 39.10 ("Alternative public works contracting procedures") authorizes the use of "design-build, general contractor/construction manager, and job order" contracting procedures, prescribes requirements to ensure that such contracting procedures serve the public interest, and establishes a process for evaluation of such contracting procedures. The design-build procedure may be used if it meets one of a few criteria depending on size, such as substantial fiscal benefit, or significant savings in project delivery time. There is a restriction on the use for operations and maintenance services longer than three years if not a utility or approved demonstration project. Lastly, incentive payments may be provided for early completion, cost savings or other goals if they are identified in the request for proposals.
        - RCW 70.95A.090 ("Facilities—Sale or lease—Certain restrictions on municipalities not applicable") provides a broad competitive bidding exemption for pollution control facilities constructed or improved by cities, towns, counties, or port districts. [29] RCW 70.95A.020 defines pollution broadly to include "any form of environmental pollution, including but not limited to water pollution, air pollution, land pollution, solid waste disposal, thermal pollution, radiation contamination, or noise pollution."[30] Municipal Research and Services Center suggests that "this statute appears to be far-reaching, but eligible agencies should use caution before proceeding and ask the Department of Ecology to certify that the facility is indeed designed to abate, control, and/or prevent pollution", which may be particularly relevant for green infrastructure because there is more consensus related to the flow control benefits than pollutant reduction benefits.
        - RCW 150.150 (Water Quality Joint Development Act") is intended to provide public bodies an additional means by which to provide for financing, development, and operation of water pollution control facilities needed for achievement of state and federal

28 "Prevailing Wages." MRSC, http://mrsc.org/Home/Explore-Topics/Public-Works/Purchasing-and-Bidding/Purchasing-and-Bidding-for-Washington-State-Local/Purchasing-and-Bidding-Public-Works-Contracts/Purchasing-and-Bidding-Prevailing-Wage-Issues.aspx.

29"Competitive Bidding Exemptions." http://mrsc.org/Home/Explore-Topics/Public-Works/Purchasing-and-Bidding/Purchasing-and-Bidding-for-Washington-State-Local/Purchasing-and-Bidding-Definitions-Exemptions-and.aspx.

30 "Competitive Bidding Exemptions." http://mrsc.org/Home/Explore-Topics/Public-Works/Purchasing-and-Bidding/Purchasing-and-Bidding-for-Washington-State-Local/Purchasing-and-Bidding-Definitions-Exemptions-and.aspx.

water pollution control requirements for the protection of the state's waters. Per RCW 70.150.040, the Department of Ecology must review and approve service agreements before they are finalized to assure that they are consistent with Chapter 90.48 RCW, Water Pollution Control. According to the Department of Ecology's publication on Service Provider Agreements for Water Pollution Control Facilities, many public-private partnership options are available, and should be viewed as a continuum that ranges from contracting out for a single, specific service such as building maintenance – to full-scale, privately financed, design, build, and operation services.

- In states operating under the Dillon Rule[31], state and local agencies have had difficulty executing alternative contracting arrangements in other parts of the country; however, the state of Washington primarily operates under Home Rule and as such, cities are vested significant powers relevant to contracting via RCW 35A.11.020, and counties appear to have similar legislative authority provided in RCW but in less broad terms (e.g. RCW 36.32.120).

Most permittees interviewed believe competitive bidding, lowest bid, prevailing wages, and union agreements are barriers to a CBP3, and specific legislation enabling CBP3s would likely be beneficial.

- The majority of interviewees expressed concern that procurement rules such as competitive bidding, lowest bid, prevailing wages and union agreements are barriers to CBP3s. One permittee shared that their legal department specifically looked into the legal authority to execute a CBP3 and found that state procurement laws created barriers.
- The majority of interviewees were also aware of the existence of legislation enabling transportation P3 projects (RCW 47.29), for which there are currently amendments proposed (SB 5330) to improve the law based on attempting to establish transportation P3s.
- The Department of Ecology's Municipal Stormwater Permits Fact Sheet accompanying the final draft NPDES permits suggests the use of P3s (see Section 6.5.12).
- State and local agencies are likely to feel more comfortable exploring a CBP3 if there is state legislation explicitly encouraging and defining CBP3s or a well-publicized pilot CBP3 that is successful.

Phase I permittees, and a few Phase II permittees, are likely to have experience with and have the risk appetite to implement nontraditional contracting arrangements.

- Phase I city and county permittees interviewed have experience with nontraditional contracting arrangements; however, most of the other permittees interviewed believe contracts longer than five years and contracting with private companies to provide administrative services has not been done or is very rare.

No permittees interviewed are aware of contracts with payment tied to outcome metrics for stormwater management; however, all interviewees asked believe it is possible.

- No permittees interviewed are aware of contracts with payment tied to outcome metrics for stormwater management, and most mention that they have never considered outcome-based payments. Those interviewees asked believe it is possible.

MEASUREMENT AND VERIFICATION

The Measurement and Verification criteria is used to assess the likelihood that a permittee category has established measurement methods that can be used to ensure effective implementation of a CBP3 within

[31] The Dillon Rule creates a framework where local governments can only legislate what the state government has decreed. By contrast, the Home Rule gives local governments governing authority to make a wide range of legislative decisions that have not been addressed by the state.

their jurisdiction by setting motivating yet realistic performance targets and verifying post-project effectiveness.

The rating definitions in Figure 14 rate and differentiate permittee categories for the Measurement and Verification criteria. Definitions are not described for the Likely and Unlikely ratings referenced in the Assessment Approach section above; however, those ratings apply when a permittee category falls between the bordering ratings.

Almost Certain	Permittees are almost certain to have used or can easily adapt a well-established metric that incorporates the quantity and quality of treatment and works for their jurisdiction AND have meaningful experience conducting green infrastructure inspections and enforcement.
Possible	It is possible permittees have used or can easily adapt a well-established metric that incorporates the quantity and quality of treatment and works for their jurisdiction AND have meaningful experience conducting green infrastructure inspections and enforcement.
Rare	It is rare permittees have used or can easily adapt a well-established metric that incorporates the quantity and quality of treatment and works for their jurisdiction AND have meaningful experience conducting green infrastructure inspections enforcement.

Figure 14: Rating scale for Measurement and Verification criteria

The primary drivers that determine if a permittee category has established measurement and verification methods is the existence of relevant regional performance measures, and experience with building and maintaining green infrastructure. A good performance measure must be effective at identifying the most beneficial sites and informing the optimal design of the green infrastructure. The performance measures provided by the Stormwater Control Transfer Program[32] and Department of Ecology's funding programs[33] are examples of such a performance measure. Both provide a good understanding of the stormwater benefit of a green infrastructure project and can be consistently and cost-efficiently applied across multiple projects. However, both could likely benefit from some improvements depending on the specific use. For example, if the Department of Ecology's funding program performance measure is used to guide green infrastructure site selection, then better incorporating the difference in site location in relation to the specific water source of concern would be beneficial.

An effective verification protocol assesses the function of a green infrastructure site without significant investment while controlling for factors outside of the project proponent's control. The assessment did not identify any permittees currently using an effective verification protocol, although that does not mean that they do not exist in the state. A rapid assessment protocol for bioretention facilities and rain gardens is nearing completion under the Stormwater Action Monitoring program jointly funded by permittees. One example of an effective verification protocol used in California is the Rapid Assessment Methods used by the Lake Tahoe Crediting Program, described below. Since no currently implemented verification protocols were identified by the assessment, criteria could be based on permittees' experience with inspections and enforcements to determine the likelihood that a permittee category can develop such a method quickly.

[32] The SCTP allows a permittee to construct flow control facilities in a high priority watershed and satisfy permit requirements triggered at new and redevelopment sites. The SCTP provides a method to calculate the obligation from the new or redeveloped site, and the credits generated and available from a facility constructed. The calculation method uses the Western Washington Hydrology Model (WWHM).

[33] Department of Ecology. Revised June 2018. Design Deliverables for Stormwater Projects with Ecology Funding. https://ecology.wa.gov/DOE/files/93/930ea880-3989-4ac3-9b6b-ae6dd7b0151c.pdf

Rapid Assessment Methods used by the Lake Tahoe Crediting Program[34]

In Lake Tahoe the state and local agencies are required to use rapid assessment methods (RAM), which take less than 15 minutes to apply per site, to verify the effectiveness of street sweeping and best management practices (BMP) and the credits they are receiving from those activities as part of the Lake Clarity Crediting Program. BMP RAM guides urban implementers through the process of defining expected conditions and ensuring conditions can be realistically maintained, as opposed to using design parameters that are unlikely to be maintained on average over a BMP's useful life. Use of this tool ensures efficiency of reviews and consistency and comparability of results among program participants.

Table 5 contains the assessment of each permittee category using the Measurement and Verification criteria as well as rationale for the assessment.

Table 5: Assessment of permittee categories using Measurement & Verification criteria

PERMITTEE CATEGORY	MEASUREMENT RATING	RATIONALE
Western WA, Phase I City	**Likely**	Permittees can likely adapt the Stormwater Control Transfer Program or Department of Ecology's funding program performance measures, or use other metrics established for their jurisdiction, and the permit requires implementation of a catch basin inspection and maintenance program; however, an effective and cost-effective verification protocol for a CBP3 would likely be needed.
Western WA, Phase I County	**Likely**	Permittees can likely adapt the Stormwater Control Transfer Program or Department of Ecology's funding program performance measures, or use other metrics established for their jurisdiction, and the permit requires implementation of a catch basin inspection and maintenance program; however, an effective and cost-effective verification protocol for a CBP3 would likely be needed.
Western WA, Phase II City	**Possible**	Permittees can likely adapt the Stormwater Control Transfer Program or Department of Ecology's funding program performance measures, or use other metrics established for their jurisdiction; however only a few are likely to have meaningful experience with inspecting and enforcing green infrastructure.
Western WA, Phase II County	**Possible**	Permittees can likely adapt the Stormwater Control Transfer Program or Department of Ecology's funding program performance measures, or use other metrics established for their jurisdiction; however only a few are likely to have meaningful experience with inspecting and enforcing green infrastructure.

[34] Lake Clarity Tracker. Lake Tahoe Info. https://clarity.laketahoeinfo.org/

Eastern WA, Phase II	**Possible**	Permittees can likely adapt the Department of Ecology's funding program performance measure, or use other metrics established for their jurisdiction; however very few permittees are likely to have meaningful experience with inspecting and enforcing green infrastructure.
WSDOT	**Likely**	WSDOT can adapt the credit/debit calculation method defined for the Stormwater Control Transfer Program for western WA and the permit requires implementation of a catch basin inspection and maintenance program; however, an effective and cost-effective verification protocol for a CBP3 would likely be needed.
Port	**Rare**	No well-established metric for green infrastructure that could be implemented at scale at ports where the economic value of space limits traditional green infrastructure facilities, and very few permittees are likely to have meaningful experience with inspecting and enforcing green infrastructure.

The map in Figure 15 contains all permittees in the state and the Measurement and Verification rating associated with each permittee category in Table 5.

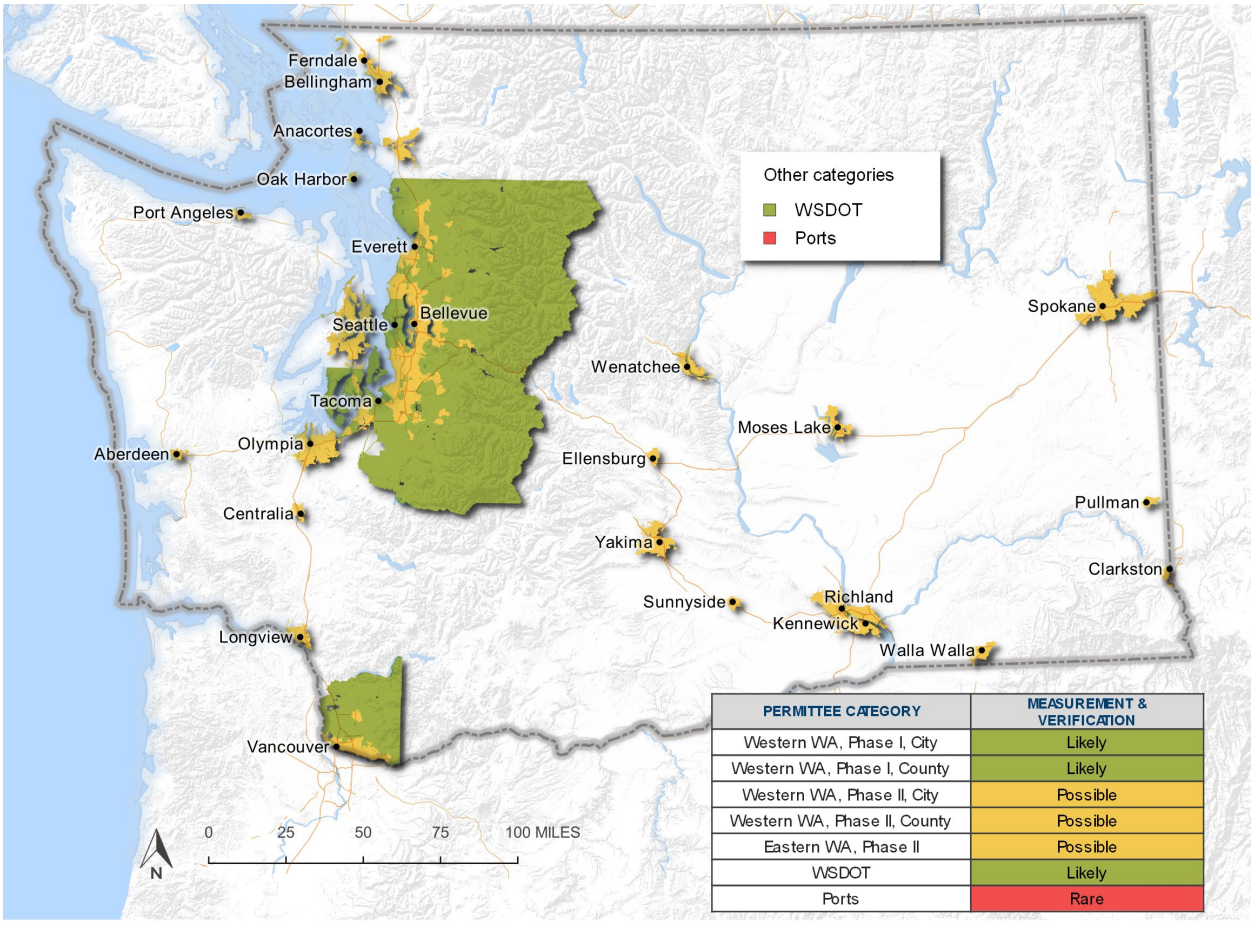


Figure 15. Each polygon on the map represents a permittee included in the permittee categories assessed (or point in the case of Port permittees). Each permittee category is color-coded according to Measurement and Verification assessment rating.

Measurement and Verification Related Findings

Permittees in western Washington are almost certain to have or be able to easily adapt existing metrics to ensure effective siting and design of projects implemented by CBP3 in terms of stormwater benefits, but no established metrics are identified for eastern Washington by this assessment.

- Permittees in western Washington can likely adapt the credit/debit calculation method defined for Ecology's Stormwater Control Transfer Program, which uses a western Washington model, for use as a flow metric within a CBP3.
- Many Phase I permittees and several Phase II permittees are also likely to have experience implementing other potentially applicable metrics developed for their jurisdiction.
- No water quality or flow control trading programs are identified in the state; however, both require establishing and gaining experience with an outcome metric that would be valuable for implementing an effective CBP3. Washington's permits also limit water quality and flow control trading for new development and redevelopment to occur within local watersheds. Trading programs for retrofits above and beyond permit requirements could go outside this boundary.
- Only one eastern Washington permittee was interviewed, so it is very possible metrics designed for eastern Washington exist but were not identified through this assessment.

Phase I permittees have verification protocols and experience useful for developing performance-based long-term maintenance contracts; however, verification protocols may need improvement to ensure green infrastructure is designed and maintained to maximize stormwater benefits.

- Phase I permittees are required to develop operations and management verification protocols, and implement inspection and enforcement of green infrastructure. These protocols suffice for use in performance-based long-term maintenance contracts; however, inspection methods often do not incorporate the quality or function of the green infrastructure in a way that facilitates optimum design and maintenance.
- No implemented water quality or flow control trading programs are identified in the state (the Stormwater Control Transfer Program has been defined but not implemented); however, both require establishing and gaining experience with a verification protocol that is valuable for performance-based long-term maintenance contracts.

COMMUNITY BENEFITS

Community benefits are a critical component of CBP3s; they enable stormwater projects to generate additional value from limited land resources and permittee budgets. Permittee categories are not assessed in relation to their likelihood of generating community benefits from green infrastructure because it is assumed that there are always opportunities to do so and it is permittee specific. However, useful findings related to delivery of community benefits are provided below.

Community Benefit Related Findings

CBP3s can contribute to a wide-range of other environmental and community (or social equity/environmental justice) goals from both the project delivery and the green infrastructure itself.

- CBP3s can generate environmental benefits in addition to stormwater flow control and pollutant treatment; including habitat creation, flood management, air quality, water supply, and aquifer protection.
- CBP3s can generate community benefits from project delivery, including job creation and job training.
- CBP3s can generate community benefits from green infrastructure including public health, recreation opportunity, and environmental education.

While permittees currently strive to incorporate community benefits into green infrastructure projects, CBP3s create a transparent mechanism and effective incentive to maximize contribution to community goals from green infrastructure.

- Several notable examples of how permittees ensure community benefits are incorporated into green infrastructure projects were identified during the assessment, including
  - Spokane has an Integrated Capital Management department to break down traditional silos and ensure capital projects are informed by different functions of the city.
  - Kitsap County's "Water is a Resource" policy ensures the stakeholders are educated on the impact of stormwater runoff, and land is used for multiple purposes.
  - Seattle Public Utilities used a project evaluation framework titled Multiple Objective Decision Analysis defined in its Integrated Plan to objectively consider other environmental, environmental/social justice, and community benefits.
  - Most grants leveraged by permittees require formal evaluation of community benefits.
- However, incorporating community benefits into the design of green infrastructure projects and programs is frequently an organizational challenge because of the need to coordinate with multiple departments within an agency. Further, community benefits and other environmental and economic benefits are critical to long-term success of any CBP3. Therefore, permittees may be interested in using a triple bottom line (TBL) analysis to ensure community, environmental, and economic benefits are accounted for explicitly in initial investment decisions and ongoing asset-management strategies for a CBP3. CBP3s can include specific metrics that reflect local community goals, which increase transparency and create an effective incentive to maximize contribution to community goals from green infrastructure.

IV. Recommendations for Developing a Pilot Community-Based Public-Private Partnership Program

The following recommendations are intended to assist the Department of Commerce and other state agencies with design and implementation of a CBP3/Pay for Performance pilot program. The recommendations are based on the CBP3 contract arrangements and performance contracting payment terms likely to benefit permittees in Washington and summarized in Section 2, and the assessment of permittee categories and findings in Section 3. They are grouped by 1) opportunities to improve enabling conditions for CBP3s, 2) infrastructure to launch an effective CBP3 pilot program, and 3) approaches to facilitate successful CBP3 pilot projects, and summarized in Figure 16.

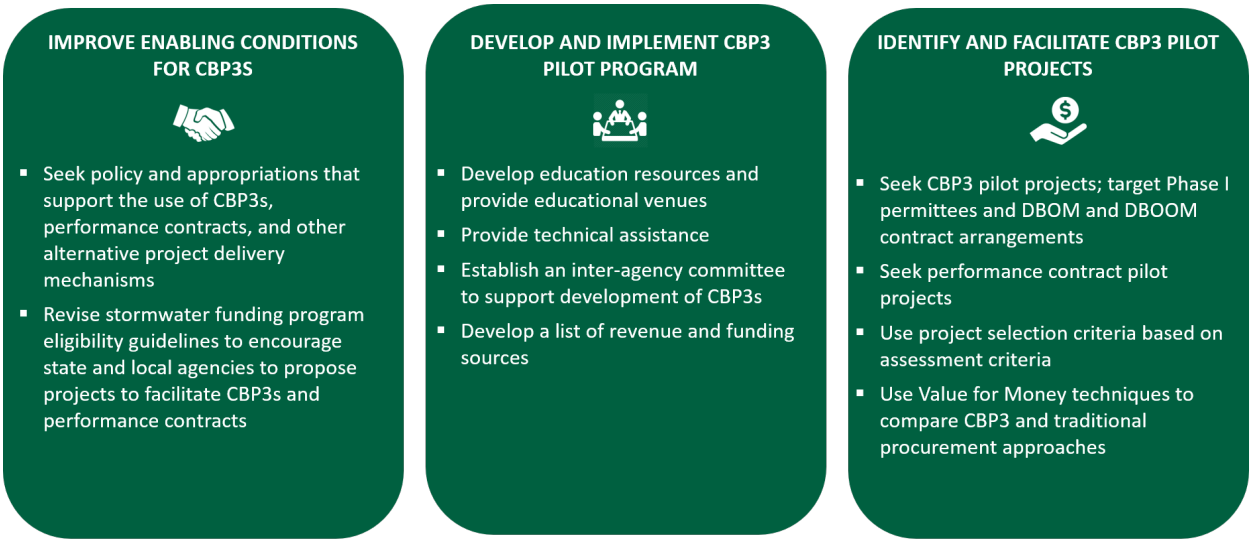


Figure 16: Summary of recommendations outlined in Section 4.

The recommendations in this section are applicable to green infrastructure, as well as gray infrastructure and other stormwater retrofits. However, green infrastructure can uniquely provide a wide-range of community benefits, and thus it is important that non-stormwater funding sources and performance metrics are considered when developing a CBP3.

IMPROVE ENABLING CONDITIONS FOR CBP3S

1) **Seek state-level policy and appropriations that support the use of CBP3s and performance contracts.** Although this assessment did not find legal barriers that will prevent state and local agencies from implementing a CBP3; most interviewees believe there are barriers due to procurement rules such as competitive bidding, low bid, prevailing wages, and union agreements. Thus, it is beneficial for the state to be explicit that CBP3s and performance contracting are eligible tools along with traditional contracting mechanisms. Further, it is important that state policy and appropriations do not exclude or create barriers to implementing CBP3s and performance contracts. Enabling legislation, similar to Transportation Innovative Partnership Act of 2005 (RCW 47.29), which the state legislature is currently considering changing (SB 5330) to provide a more desirable and effective approach, may be eventually useful.

2) **(Department of Ecology) Review current stormwater funding program eligibility guidelines, and explicitly include the development of CBP3s and performance contracting as eligible uses in appropriate funding programs.** Funding programs might explicitly allow the use of state grant funds to design a CBP3 or performance-based program, and develop tools for a CBP3 and

performance contracting such as implementation frameworks, performance metrics, verification protocols and reporting platforms. Funding guidelines should encourage applicants to collaborate with Ecology staff and seek input from natural resource agencies to ensure that CBP3s and performance-based programs align with regulatory objectives.

DEVELOP AND IMPLEMENT CBP3 PILOT PROGRAM

3) **Develop CBP3 and performance contracting educational resources and provide educational venues.** P3s and performance contracting are new implementation tools for public infrastructure, in particular in the stormwater sector. Education and supporting technical resources can generate interest in and facilitate implementation of CBP3s and performance contracts. It is valuable to disprove perceived barriers (e.g., a CBP3 is not possible if lowest bidder requirements exist, or a union agreement is in place for maintenance of green infrastructure). Technical assistance resources could include a decision-tree to guide permittees through the key decisions in determining if a CBP3 is an effective tool to achieve their goals and performance contract templates. Educational venues could include workshops to work through the design and implementation considerations of CBP3s and performance contracts.

4) **Provide technical assistance to state and local agencies interested in implementing a pilot CBP3 project and the use of performance contracts.** Providing technical assistance from experts with experience implementing these tools can expedite pilot projects and ensure their likelihood of success. Although potentially new to a permittee, CBP3s and performance contracts have been implemented in different contexts, and permittees would benefit from leveraging the experience and lessons learned by others. Further, it is important that permittees receive technical assistance from experts with the permittee's best interest in mind. As timelines and funding allow, consider using a competition approach to identify good CBP3 and performance contracting pilot project candidates and then provide technical assistance from state staff and/or consultants to the selected candidates.

5) **Establish an inter-agency committee that provides broad expertise to state and local agencies interested in designing and implementing a CBP3.** Consider developing an inter-agency committee with staff from the following state agencies:
   - Department of Commerce with expertise on workforce development, private-sector engagement, and economic development
   - Department of Ecology with expertise on stormwater permit compliance, stormwater BMPs, and stormwater funding programs
   - Department of Transportation with expertise on transportation infrastructure development
   - Department of Social and Health Services with expertise on community health and well-being
   - Department of Enterprise Services (Procurement & Contracts) with expertise on state procurement laws and contract development
   - Office of Financial Management with expertise on state and local financing mechanisms and budgeting

6) **Develop a list of potential revenue sources and funding sources to fund a CBP3 and encourage funders to facilitate CBP3s.** As part of the list development process, consider exploring the use of the Clean Water State Revolving Fund as a guarantee to reduce the cost of private financing and thus the overall cost for the permittee implementing a CBP3 that uses private financing.

IDENTIFY AND FACILITATE CBP3 PILOT PROJECTS

7) **Seek pilot CBP3 project(s) to demonstrate their feasibility and contribution towards stormwater and community benefits; target Phase I permittees and Design-Build-Operate & Maintain or Design-Build-Own-Operate & Maintain contract arrangements.** Designing and implementing a CBP3 takes significant effort and time; a pilot program should be expected to take three to five years to implement a successful pilot project. Thus, it is important to focus limited resources. Phase I permittees are more likely to be able to leverage a CBP3 based on this assessment; however, there are likely Phase II permittees capable of leveraging a CBP3, so Phase II permittees should not be excluded. The DBOM and DBOOM contract arrangements are expected to be the best fit for fulfilling the stormwater and community needs of state and local agencies, and are applicable to dozens of permittees. Private financing should be explored and may be advantageous, depending on the specific context. Consider seeking two pilots to demonstrate feasibility and learn from different contexts and potentially different contract arrangements.

8) **Seek performance contract pilot project(s) that demonstrates the feasibility and the benefits of basing payments on metrics that reflect the outcomes of a project.** While a CBP3 may be an effective tool for several permittees, performance contracts could be a viable contracting tool for a large number of permittees.

9) **Use the following criteria when evaluating and designing potential CPB3 pilot projects to receive funding and/or technical assistance.**[35] It is important that the core elements of a CBP3 exist or there is a clear path to establishing them before investing in a CBP3.

   Implementation Scale

   - **Design and Construction Costs** – The larger the project, including the number of individual projects, the more opportunity it provides for cost efficiencies and more attractive it will be to potential private sector partners. The project budget and preliminary design and construction estimates are important for setting expectations with private parties.
   - **Maintenance Costs** – The greater the maintenance and rehabilitation costs during the potential contract term, the better suited a project is for CBP3 as they inspire upfront project construction that minimize maintenance costs. The presence of such constraints should not necessarily be a barrier to a CBP3.

   Sustainable and Predictable Revenue and Payment Terms

   - **Financing** – Proposed revenue and funding sources must be provided to ensure the project can be funded. However, optional revenue and funding sources may be desired, as well as the possibility of private financing to identify the most effective way to finance the project. The risk transfer from the public to private sector created by the CBP3 approach is achieved most effectively when a project includes private investment in a first-loss position[36].
   - **Performance Incentive (Payment Terms)** – A CBP3 requires a financial incentive structure, and clear terms for how cost-savings from efficiencies achieved are handled, and how payment is tied to performance metrics and long-term verification.

[35] Criteria were informed by the West Coast Infrastructure Exchange project selection criteria, and the Pay for Performance Toolkit contextual factors.

[36] First-Loss Position definition: https://www.realized1031.com/glossary/first-loss-position

- **Performance Risk** – The higher the uncertainty whether projects will result in intended outcomes, the better suited a project is for a CBP3. Further, the risk and responsibility sharing must be clearly defined and appropriate.

Legal Authority and Risk Appetite

- **Legislative and Legal Framework** – As a threshold matter, a project must have a clear, legal pathway to use the CBP3 method under federal, state, and/or local law. Legislative authorities enabling the proposed contractual arrangement and scope, and specific procurement constraints must be clearly understood, in particular local laws that may be more restrictive than state laws.
- **Performance Term** – The longer the potential performance contract, the more suited a project is for the CBP3 delivery method.
- **Oversight and Reporting** – A clear oversight process and structure (project governance, project reporting, dispute resolution) must be defined to ensure effective and efficient implementation. It is particularly important that the local or state agency have the appropriate input on project siting and design while not creating implementation inefficiencies.
- **Project Failure and Remediation** –To protect the public and private parties, it is important to define how the parties can course-correct for various difficulties during the contract, and conditions under which the project will shut down.

Stormwater Outcome Measurement and Verification

- **Stormwater Performance Metrics and Verification** – Performance metrics and verification protocols must be defined to measure implementation and long-term maintenance performance. Metrics should incorporate the quality of outcomes to the degree feasible and appropriate, and fulfill compliance requirements. Timeline also should be incorporated into performance metric targets.

Community Benefits

- **Community and Other Environmental Benefits and Metrics** – The broader the range of desired community benefits, the more value the CBP3 can offer. The desired community benefits and associated metrics must be declared upfront for private party consideration.
- **Labor and Wages** – Specific labor constraints (e.g., union agreements that must be adhered to) and prevailing wage requirements must be clearly understood. The presence of such constraints should not necessarily be a barrier to a CBP3.
- **Public Support** – It is critical that public officials, residents, unions, and other stakeholders are supportive, or there is a clear path to gaining and confirming their support.

10) **Use Value for Money[37] technique to estimate and compare costs of a potential CBP3 relative to traditional procurement approaches.** A CBP3 may create additional value, and thus cost is not a primary consideration; however, a Value for Money analysis can be informative. It is critical to fully account for traditional costs (e.g., all public staff time costs including benefits).

[37] A Value for Money (VfM) analysis compares the total estimated lifecycle costs of traditional public procurement to the total estimated lifecycle costs of a P3 procurement. The analysis uses parameters such as discount rate, discounted cash flow, and net present values are used in an effort to provide an "apples-to-apples" comparison.

Appendices

APPENDIX A: INTERVIEW TEMPLATE

Washington State Stormwater P3 Feasibility Assessment

Interview Template

Date	
Interviewee(s)	
Interviewer(s)	

Project & Interview Introduction

- The Department of Commerce is charged with establishing a community based public-private partnership (P3) stormwater pilot program per ESSB 6096, and the first step is conducting a feasibility assessment to inform the design of the pilot program. A contractor team lead by Environmental Incentives, and supported by Geosyntec and Corvias are supporting Department of Commerce with conducting the feasibility assessment.
- The feasibility assessment strives to
  - Identify regions within the State of Washington that would have more (and less) supportive enabling conditions for stormwater P3s.
  - Identify P3 structures that have the potential to address stormwater management challenges in the State of Washington.
  - Identify actions that can be taken to reduce barriers to establishing stormwater P3s in the State of Washington.
- The contractor team plans to interview representatives from 8-10 permittees to determine the differences in enabling conditions between different types of permittees. The 8-10 permittees have been selected to gain understanding of enabling conditions/barriers in permits.
- The interview questions cover a wide range topics and multiple individuals within an organization are likely to be needed to answer all of the questions. Thus, interviewees are encouraged to review questions with other staff within their organization, and/or include other staff in the interview discussion. In particular, finance or legal colleagues may be useful.
- We ask that interviewees try to answer all questions to the best of their ability. However, we fully understand that interviewees have a lot on their plate, and thus we encourage interviewees to include links to reference documents and use other techniques to avoid the effort required to research and draft comprehensive responses to questions.
- The primary questions (blue font) will be asked first, and the secondary questions (green font) will be asked after all primary questions have been asked to ensure all primary questions are asked during the interview.
- Thank you for investing your time in this project!

BACKGROUND QUESTIONS

- What is your current job title and the focus of your job?
- What got you interested in stormwater?
- Who do you interact with in the course of your work?
- What do you know about public/private partnerships?

SUSTAINABLE AND PREDICTABLE REVENUE STREAMS

Local governments must have a dedicated and reliable revenue stream available to sustainably fund construction, operations and maintenance, and performance verification and reporting of green infrastructure. Further, existing and potential revenue streams typically have constraints that need to be understood to determine if and how they can be utilized in a P3 arrangement.

1. **What are the current and potential major revenue sources for your stormwater program that could potentially be used to sustainably fund the capital costs, as well as operations, maintenance of green infrastructure. What is the magnitude of the revenue stream and constraints (e.g. timeframe restrictions, fund use restrictions, etc.)?**

Interviewer guidance: *Review each Type of potential sustainable revenue stream in the table and capture all existing and potential sources for each Type (if any exist), and see if there are any additional sources that are not considered one of the Types listed. Add rows for multiple potential sources provided per type.* ***Define revenue vs funding for the interviewee to ensure everyone is defining these terms the same way.*** *Revenue is a recurring source that isn't required to be repaid.*

Revenue Sources

TYPE	EXISTING/POTENTIAL SOURCE NAME	EXIST. OR POT.	CAPITAL COSTS, O&M, OR BOTH?	MAGNITUDE OF FUNDS (FREQUENCY & DURATION)	POTENTIAL BARRIERS TO USE FOR P3	MISC NOTES
Utility Rate						
Fee-in-lieu Program						
Banking/Offset Program						
Trading Program						
Property Tax						
User Fees						
Other revenue (e.g. Sources for Community benefits from GI)?						

2. **What is the cost of operating your stormwater program? What is the cost of complying with your stormwater permit and other regional stormwater requirements (if applicable)? What is the cost of complying with the retrofit incentive program?**

3. **Do you anticipate any significant changes in these costs with the next permit?**

LEGAL AUTHORITY

The state and local government must have permitting and regulatory processes, procurement rules and enabling legislation that allows for the formation of, and efficient and flexible implementation of a P3.

State Policy

Changes to state policy may be required for formation of P3s for all or specific permittees. State policy is being reviewed independently, but better understanding the actual and perceived state policy needs of each permit type is critical.

Interviewer guidance: *These questions may be inappropriate to ask some interviewees that have little exposure to state policy influencing formation of P3s, thus this should be explained to interviewees and questions should be tailored to the interviewees knowledge and interest in the topic. Ask each question below and capture responses, and follow-up requests for interviewee.*

State and/or Local Procurement and Contracting Policy

A P3 program must allow the community and the contractor to have equity in the contracting and procurement process. This requires flexibility, financial rewards for performance, and recognition of performance in the contract evaluation process.

Interviewer guidance: *Ask each question below and capture responses, and follow-up requests for interviewee.*

1. **Does your agency allow for performance-based contracts (e.g. payment amount tied to performance metric)? If performance-based contracts have been executed, describe a good example.**

   Interviewer guidance: *Define performance-based contracts for the interviewee: performance-based contracts vary payment based on the quality of the completed project.*

2. **P3 arrangements are often 10-30-year timeframes. Has your organization entered into any long-term contracts? If so, describe example(s)?**
3. **Can private entities act as agents for the agency for right-of-way, maintenance, and construction easements and agreements?**
4. **Do your agency's contracting requirements limit private profits? Has this limitation prevented P3s in the past? Are there any examples of working with private parties on stormwater projects where there is no restriction on their profits?**
5. **Are there examples of private parties operating your stormwater projects? What about maintaining your stormwater projects?**

Stormwater and Local Building Permit Programs

There must be a process in place to allow the contractor to obtain permits as quickly as possible so that the partnership can realize the benefits of fast tracking the construction. There must also be the opportunity to refine and advance new technologies and construction practices so that the green infrastructure operates as efficiently as possible.

Interviewer guidance: *Ask each question below and capture responses, and follow-up requests for interviewee.*

1. **To what degree is LID/GSI currently able to be used to meet your agency's permit requirements and integrated into your agency's code? E.g. what LID/GSI techniques are credited?**

2. **Do you think municipal program management, administrative, project management, and staff engineering jobs be can be contracted out to reduce the burden on municipal employees?**

3. **Does your organization manage or maintain stormwater projects on private (or non-city) property? If so, what kind of agreements are required to do so? If not, why not? How do you engage property owners that are outside your organization?**

MEASUREMENT AND VERIFICATION

In a P3 arrangement, the private sector partner(s) should be incentivized to develop cost effective and efficient implementation strategies and BMPs that achieve stormwater and other community goals. The incentive should facilitate innovation and adaptive management for planning and design of the BMPs. Further, the incentive will need to be based on a system in place to evaluate, verify, and report on the progress of the effort that can quantify the results and satisfy the requirements of regulatory agencies.

Interviewer guidance: *Ask each question below and capture responses, and follow-up requests for interviewee.*

1. **How do you measure success of your stormwater program? How do you measure success of an individual project?**

2. **Do you perform any monitoring of your stormwater projects? If so, how? Do you measure water quality or flow?**

3. **How do you demonstrate compliance with your permits?**

4. **Are you following Ecology's proposed stormwater retrofit incentive program? How are you anticipating meeting the proposed requirements? Do you think complying with it will be a significant burden? Are the retrofit incentive points an accurate representation of project benefits? How are incentive points tracked? What are the penalties if the minimum SSC point requirement is not met?**

5. **Does your organization have any interest in flow control credit trading or other innovative means to meet your GSI goals?**

6. *[If interviewee thinks the next permit is likely to require pollutant reduction – question in Revenue question]* **What is the likelihood the next permit will require verification that flow requirements are being achieved, not just implemented?**

OTHER COMMUNITY BENEFITS THAT CAN BE LEVERAGED OR INTEGRATED INTO P3 STRUCTURE

An advantage of green infrastructure is its use to satisfy the stormwater permit requirements as well as requirements of other infrastructure and regulatory programs and community development needs. For example, green infrastructure projects can lower the overall financial burden to communities.

Interviewer guidance: *Ask each question below and capture responses, and follow-up requests for interviewee.*

1. **Could a stormwater project be integrated with other utility programs such as drinking water and wastewater? Is there a system in place to capture the value generated?**

2. **How do you address social equity/environmental justice through your program? Do you assess the benefits/impacts to underserved or historically marginalized communities? Do you take social equity/environmental justice into account when analyzing the cost/benefits of projects?**

SUPPLEMENTAL QUESTIONS

Interviewer guidance: *Ask the following questions only after questions 1-19 have been answered, or if the interviewee identifies any of the following as critically important to understanding their operations.*

1. **What are the current and potential major funding sources for your stormwater program that could potentially be used to sustainably fund the capital costs, as well as operations, maintenance of green infrastructure. What is the magnitude of the funding source and constraints (e.g. timeframe restrictions, fund use restrictions, etc.)?**

Interviewer guidance: *Review each Type of potential funding/financing resource in the table and capture all existing and potential sources for each Type (if any exist), and see if there are any additional sources that are not considered one of the Types listed. Add rows for multiple potential sources provided per type.*

Funding Sources

TYPE	EXISTING/POTENTIAL SOURCE NAME	EXIST. OR POT.	CAPITAL COSTS, O&M, OR BOTH?	MAGNITUDE OF FUNDS (ANNUALLY)	POTENTIAL BARRIERS TO USE FOR P3	MISC NOTES
State Revolving Loan Funds						
Large Stormwater Grant Program						
Multi-Sector Large Grant (e.g. sources for other environmental or community benefits from GI)						
Multi-Sector Loans (e.g. sources for other environmental or community benefits from GI)						
Other (e.g. Sources for Community benefits from GI)?						

2. **What is the cost of participation in the regional monitoring program?**

3. **Do you think the next permit will require pollutant reductions? If so, will this be a significant additional cost?**

4. **Are you aware of state legislation that explicitly enables formation of P3s for development, operations and maintenance of green infrastructure? If so, what is the legislation and is there a need for changes to that legislation to facilitate the use of P3s?**

5. **Are you aware of state legislation that creates specific barriers to formation of P3s for development, operations and maintenance of green infrastructure? If so, what is the legislation, what barriers does it create to formation of P3s, and to which P3 structures is it relevant?**

6. **Does your city/county have an elected or appointed mayor/manager?**

7. **Do your agency's procurement rules have provisions for including and developing local businesses? Are there provisions for disadvantaged businesses?**

8. **Under what conditions are negotiated and sole source contracts typically used, if any?**

9. **What are the primary barriers to getting stormwater projects approved? What have you or your organization done to streamline the approval process? Do you know of any success that others have had in streamlining the approval process?**

10. **Is it easier to streamline permitting for infill than in the growth management boundary? Could this be a mechanism to incentivize infill?**

11. **How do you demonstrate success to management and elected officials?**

12. **Does your organization conduct a business inspection program? How do you measure success in that program? Is stormwater flow from neighboring jurisdictions a concern? Is this concern based on current or future permit requirements?**

13. **Does your organization consider benefits from habitat creation or groundwater recharge from stormwater projects within your jurisdiction?**

14. **Are you aware of programs that assess air quality benefits from stormwater or restoration projects?**

15. **How can green stormwater infrastructure reduce costs for traditional grey infrastructure? Can those benefits be captured in a way that affects capital planning? Has your organization done this?**

16. **Do you think it is possible to track the number of jobs created through a project? For example, the number of jobs created through existing transportation P3 projects?**