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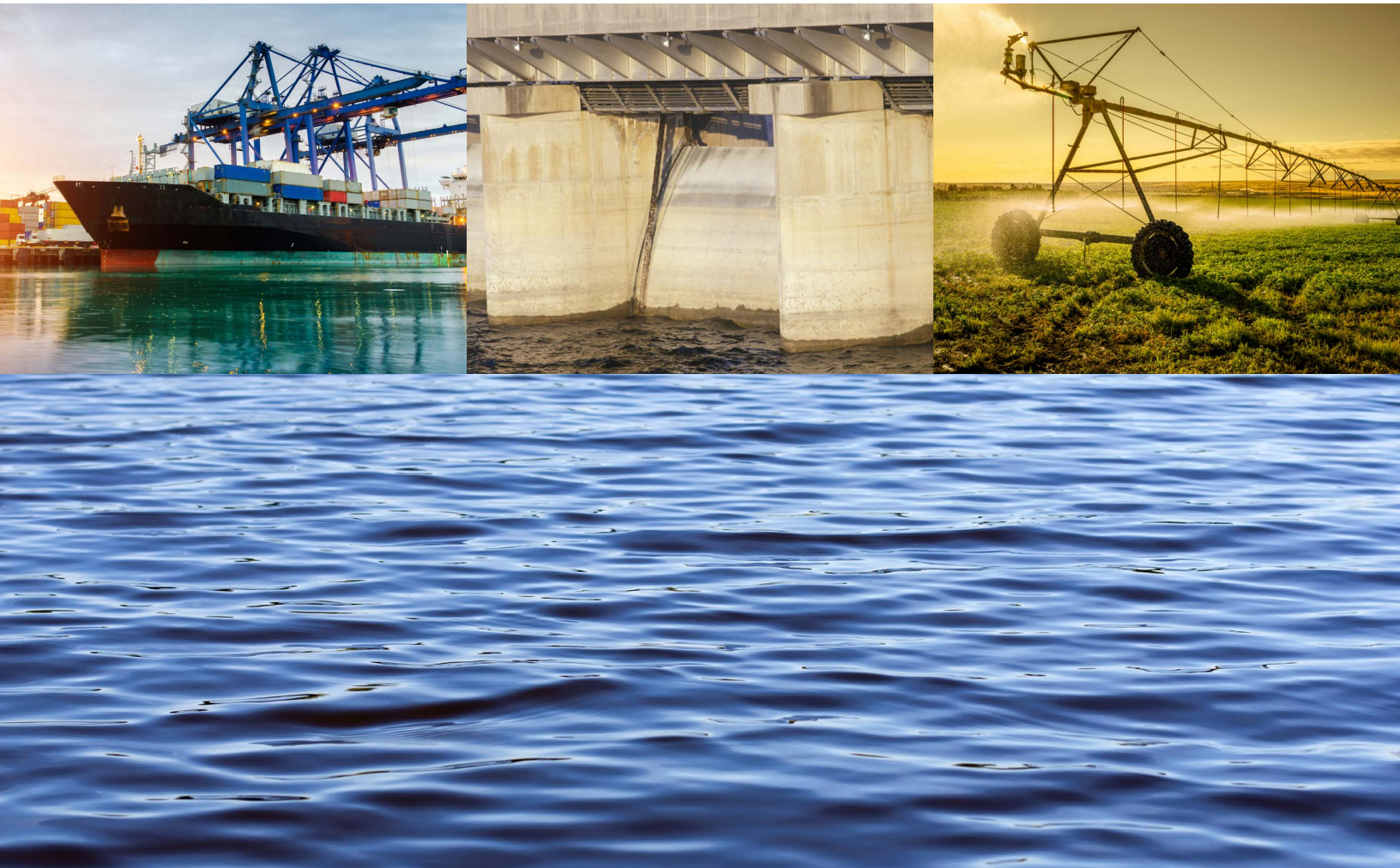
Tapping Private Financing and Delivery to Modernize America's Federal Water Resources

ASH CENTER FOR DEMOCRATIC GOVERNANCE AND INNOVATION

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About the Ash Center

The Roy and Lila Ash Center for Democratic Governance and Innovation advances excellence in governance and strengthens democratic institutions worldwide. Through its research, education, international programs, and Government innovations awards, the Center fosters creative and effective Government problem solving and serves as a catalyst for addressing many of the most pressing needs of the world's citizens.

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Foreword

Our Nation faces an infrastructure crisis that is rarely discussed in the popular press but is detrimental to our economy and safety.

Federally sponsored water resource infrastructure has long been taken for granted despite its size and significance. Over 12,000 miles long and connecting all but nine States, the U.S. inland waterway system is one of our Nation's most valuable assets, both as a natural resource and as a feat of engineering. One hundred ninety-six locks and two hundred chambers allow boats to reach the deepest interior parts of our Nation to serve our citizens and commerce. Moreover, the United States relies on 475 federally operated dams, 337 federally operated reservoirs, and over 8,116 miles of Federal irrigation canals that provide for 140,000 farmers. When flooding rains come, 40,000 miles of levees protect our citizens. However, today this critical infrastructure is at risk.

Despite the obvious advantages of keeping our water resources healthy, our infrastructure is crumbling as Federal funding for modernization and expansion dwindles and agencies like the U.S. Army Corps of Engineers (USACE) and the U.S. Bureau of Reclamation (USBR) struggle to meet their growing obligations. To understand the severity of this problem, consider for a moment USACE's civil works spending, which has shrunk from 0.16% of the Nation's Gross Domestic Product (GDP) in 1962 to as low as 0.04% today. To put this decline in perspective, between 1962 and 2014, GDP grew from \$3.3 trillion to \$15.9 trillion (2009\$). Over the same period, foreign trade volume grew from \$207 billion to \$3.7 trillion (2009\$), while the Corps' annual spending remained flat in real terms, at approximately \$5.9 billion (2009\$).

Due to restrictions in funding and the way the Federal Government budgets for capital projects, we wait to fix critical infrastructure assets until they begin to fail rather than maintain and update them when it is most cost effective. This "fix-as-fails" approach is not only much more expensive, but also poses life-safety risks and results in increasingly common incidental delays to our commerce.

As recently as December 13, 2016, the Pittsburgh Tribune Review reported that the New Cumberland lock, 54 miles downstream of Pittsburgh, brought shipping traffic to a halt when the hydraulic valve that operates its gates failed. At the time of the incident, short-term repairs were still days away, and long-term repairs were projected to take months. This malfunction marked the third time the facility faced the same problem, delaying 30 million tons of goods that pass through the New Cumberland lock each year, over half of which is coal vital to heating homes and businesses in the area, as well as construction materials needed to supply blue-collar jobs.

But the New Cumberland lock is just one small example of an increasingly burdened system. In other parts of the country, many States face crisis-level water shortages but fail to deliver crucial irrigation projects. Bigger container vessels, brought on by the expansion of the Panama Canal, imperil U.S. competitiveness since many of our ports lack the funding necessary to deepen their channels. All over the country, critical flood risk management infrastructure requires upgrading, especially in the face of increasingly severe weather patterns. In each of these areas, by delaying investment we are in fact harming both the general public and taxpayers.

Indeed, the current system is broken. Limited funding coupled with protracted appropriations results in the least efficient and most costly infrastructure delivery system imaginable. Projects that should be completed in a few years instead take decades and are rarely, if ever, considered on a life-cycle basis, thereby eliminating incentives across all phases of a project that could produce low-cost, high-quality infrastructure.

This approach to capital projects seems particularly illogical in the context of my 25 years working with alternate investment, particular public-private partnerships (P3s). In my time as mayor of Indianapolis, my team and I took the savings from a private management contract of the city's wastewater system and leveraged that money into hundreds of millions of dollars of new infrastructure investment. Rather than impose new taxes or fees, we instead monetized operational excellence. Around that time, we also saw the Corps invest in aging floodwall repairs along our downtown river in a way that unlocked development opportunities in the surrounding property, ultimately producing new greenspace, museums, and private investment. Later, as an advisor on the private concession of the Port of Baltimore, I witnessed Maryland deepen its port, expand its surrounding economic development areas, and enhance ancillary infrastructure through the concessionaire's improved productivity and the resulting user fees generated by container traffic.

If we hope to modernize and expand our federally sponsored water resources to meet the needs of this Nation, we must consider alternative approaches that eliminate waste and inefficiency and are mutually beneficial to taxpayers, users, and rate payers. To that end, the Ash Center for Democratic Governance and Innovation at Harvard University John F. Kennedy School of Government convened Senior Leader Roundtables on Alternative Infrastructure Investment and Delivery Solutions for federally sponsored water resource projects. With the participation of a broad range of experts and stakeholders, including representatives of the Federal Government (both the executive and legislative branches), State and local Governments, and key infrastructure users, the Roundtables explored the following:

- The need for innovative finance and delivery approaches to modernize and expand federally sponsored water resource infrastructure in support of economic growth, water security, and public safety for the United States
- The role that alternative finance and delivery modalities, such as P3s, can play in the development of federally sponsored water resource infrastructure
- Potential strategies and solutions that can be pursued to overcome existing constraints that currently preclude Federal agencies from using these alternative/innovative mechanisms for water resource infrastructure

The following report summarizes the findings of the Roundtables, detailing how the private sector should be deployed to help deliver and maintain the Nation's crucial water infrastructure in a timelier and more cost-effective manner. To achieve this end, it is imperative to remove deep-seated obstacles and biases at the Federal level that impede the use of private financing modalities, such as P3s. As discussed in this report, policies and legislative barriers need to be thoughtfully modernized and amended in order to enable the Nation to transfer risk, accelerate delivery, and secure life-cycle efficiency in the delivery of critical water resource infrastructure.



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1. The Water Infrastructure Challenge

Federally sponsored water infrastructure built over the past century—in support of navigation, flood risk management, aquatic ecosystem restoration, hydropower, irrigation, water supply and wastewater treatment, hydropower, and environmental sustainment—provides substantial economic and social benefits to the Nation, fostering economic growth and improving our citizens’ safety and quality of life. But today that infrastructure is at risk.

Decades of inadequate funding have resulted in deferred maintenance and system unreliability that damage our economy. America’s “fix-as-fails” approach to asset management is both inefficient and costly, threatening U.S. global competitiveness. Moreover, funding shortfalls coupled with protracted appropriations thwart our ability to deliver much needed new and expanded infrastructure, as evidenced by the current \$60 billion backlog in congressionally authorized but unfunded projects.

Proof of the deteriorating condition of our national assets is everywhere: it is estimated that America averages 850 water main breaks per day,¹ while barges idle 12 or more hours² to pass through decaying inland waterway locks, burning fuel, incurring costs and wasting time. The American Society of Civil Engineers (ASCE) has assigned an overall grade of D+ to the condition of the Nation’s major infrastructure. Critical water resources—such as inland waterways, dams and levees, wastewater and drinking water—score even worse, receiving the lowest aggregate score, D-, of all the major infrastructure sectors.

ASCE Infrastructure Report Card				Overall GPA: D+	
	Bridges	C+		Dams	D
	Energy	D+		Hazardous Waste	D
	Levees	D-		Ports	C
	Rail	C+		Roads	D+
	Transit	D+		Wastewater	D
				Drinking Water	D
				Inland Waterways	D-
				Parks	C-
				Schools	D

FIGURE 1: ASCE 2013 INFRASTRUCTURE REPORT CARD

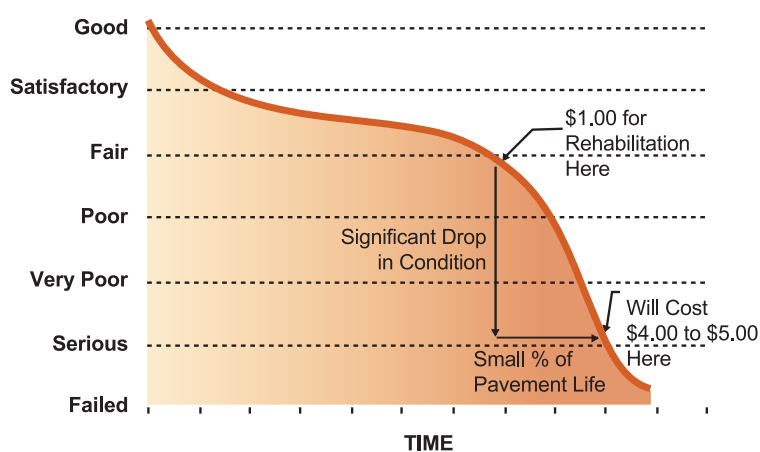
Over the last four decades, Federal appropriations for water infrastructure have dropped in real terms. Appropriations in the 1950s and 1960s primarily supported new construction. Over time, the amount of new construction has materially declined while the need for maintenance, rehabilitation and modernization of aging assets has multiplied. While O&M funding has increased in nominal terms over the years, funding has not kept pace with the rising costs of maintaining our water resource infrastructure. ASCE estimates a gap of \$1.6 trillion between expected Government expenditures and identified needs during the 2013-2020 period.³

Failure to act in an expeditious and efficient manner to maintain, repair, rehabilitate and update our water resources will yield adverse economic and social consequences for the Nation. America requires expanded and modernized infrastructure to meet the emerging needs of global commerce. Post-Panamax vessels are now passing through the Panama Canal, yet even the largest American ports are unable to accept many of these vessels due to inadequate channel depths and other infrastructure shortfalls. How will America compete if its ports are unable to meet the needs of the larger post-Panamax vessels? Rural communities are increasingly in danger of polluted or depleted water sources. How can our cities and rural communities continue to exist without access to sustainable water supplies? America has been a leader in agricultural development and commerce. How will our farmers continue to feed the world if transporting their goods by barge on inland waterways becomes unreliable, dangerous, and increasingly expensive? Infrastructure failures endanger public

¹ Source: ASCE and www.watermainbreakclock.com
² Source: ASCE 2014 Inland Waterways Report Card (<http://www.isasce.org/wp-content/uploads/2014/04/2014-Illinois-Navigable-Waterways-Final-Report.pdf>)
³ Source: ASCE 2013 Infrastructure Report Card

safety, bring business activities to a halt, displace families, and shut down national and international commerce. Moving forward with the modernization and expansion of our water resources is not a luxury, it is a necessity, as it ensures public safety and spurs gross domestic product growth, trade, job growth and consumer spending.

If America is to remain a global economic leader, these infrastructure needs must be addressed. The United States must build and expand its water resources while tackling its massive backlog of deferred maintenance. The “fix-as-fails” approach is unsustainable, shortsighted and the least efficient means possible to address our Nation’s critical infrastructure. As Figure 2 illustrates, for every dollar of deferred maintenance taxpayers will need to invest four to five dollars in capital improvements later on.⁴ It is bad business to postpone needed improvements, as the associated costs increase exponentially over time. Moreover, as interest rates rise, the cost of these investments will increase further. Failure to act today does not simply move the present burden to future years, but rather transfers a significantly larger burden to future generations.



Source: Federal Aviation Administration (FAA) 2010.

FIGURE 2: DETERIORATION OF INFRASTRUCTURE OVER TIME (FHWA AND KAHN AND LEVINSON)

The current funding and delivery structure for federally sponsored water infrastructure is clearly inadequate to meet the needs of the nation. Protracted appropriations of limited Federal funding delay project completion, defer public benefits and increase unnecessary costs. Construction projects that could reasonably be completed in a few years instead last generations, provoking cost overruns and exasperation, while our existing infrastructure descends further into disrepair.

Enabling alternative financing and delivery strategies to address this growing backlog of needed work is vital to maintaining and modernizing the nation’s federally sponsored water infrastructure.

⁴ Source: Matthew E. Kahn and David M. Levinson, Fix It First, Expand It Second, Reward It Third: A New Strategy for America’s Highways, available at https://www.brookings.edu/wp-content/uploads/2016/07/02_highway_infrastructure_kahn_levinson_paper.pdf

FUNDING AND DELIVERY OF WATER RESOURCE PROJECTS WITH A FEDERAL INTEREST



Currently, most water resource projects in which there is a Federal interest are delivered either entirely as a Federal project (owned and operated by the Federal Government) or under a shared-responsibility arrangement between a Federal agency and a non-Federal partner (such as a State or local government, or a benefitting water district). The precise nomenclature of these arrangements varies by agency, as do some of the funding and ownership arrangements. However, federally sponsored water resource projects generally fall into one of these two delivery categories:

Full Federal Water Resources/Reserved Works

Federally owned and operated water resources, also sometimes referred to as “Reserved” works, are those facilities for which the

Federal Government holds title and has retained O&M responsibility. Projects that fall into this category include critical Federal infrastructure, such as inland waterways, navigation channels, major dams and water supply projects (such as the Hoover Dam), as well as certain flood risk management projects. In most instances, Federal appropriations or Federal trust funds pay for these projects. Federal agencies coordinate with local authorities, but the Federal Government retains full ownership, as well as O&M responsibility over the asset life-cycle.

Cost-Shared/Transferred Works

Cost-shared or transferred works generally include a cooperative or contractual arrangement between the Federal Government and the non-Federal sponsors of a project. In general terms, this involves a cost-shared arrangement for the construction of the works, which is overseen by the Federal agency. Upon completion of construction, the non-Federal sponsor assumes full or partial responsibility to operate and maintain the asset over its useful life-cycle. Transferred works can include flood risk management projects, dams and levees, water delivery and distribution canals and laterals, reservoirs, hydropower facilities, pumping plants, ecosystem restoration projects, and similar facilities.

There is significant variation across both project type and Federal agency as to the details of these cost-shared arrangements. In some cases, such as with USBR, the Federal agency may retain title to the asset after construction, while in others, such as with USACE, it does not. Likewise, even while retaining title, USBR requires that Federal funding be reimbursed by local sponsors for some project types (such as irrigation and power), but not for flood control. USACE does not require reimbursement under its cost-shared arrangements.

These baseline funding and delivery arrangements for federally sponsored water resource projects are important to understand in that they are a critical consideration when exploring potential alternative finance and delivery structures, such as a public-private partnership (P3). Baseline considerations, such as asset ownership or life-cycle responsibility, can materially impact issues such as Office of Management and Budget (OMB) scoring and revenue generation and ring-fencing, making discussions of alternative finance and delivery for Federal water resources all the more nuanced and complex.

2. Alternative Finance & Delivery – Another Tool in the Toolbox

As the United States explores options to address its federally sponsored water resource investment needs, it is not alone. In today's global economy, modern and efficient infrastructure is a necessary precondition for competitiveness and growth. Faced with aging and inadequate capital assets, public authorities across the world are racing to repair, expand, and modernize their core infrastructure and service offerings. Public agencies, however, often lack the financial resources and expertise required to meet their investment needs in an efficient manner.

In order to bridge this funding gap, public officials across the Nation and the globe are increasingly turning to public-private partnership. Through an infusion of private capital and management, P3 can ease fiscal restraints and boost efficiency in the provision of public infrastructure and services, shortening delivery times, increasing innovation, addressing maintenance, reducing life-cycle costs, and generating better Value-for-Money (VfM) for taxpayers.

P3 generally refers to a range of contractual agreements between a public sector contracting authority and a private entity for the design, construction, financing, operation and/or maintenance of public infrastructure.



FIGURE 3: INFRASTRUCTURE & SERVICE DELIVERY SPECTRUM OF OPTIONS

Contract modalities vary as to the degree of private sector responsibilities and the extent of project risk transfer to the private party. However, P3 generally differs from more traditional delivery structures in that it typically transfers risks associated with the delivery of the infrastructure and services to the private partner.

While leveraging private sector debt and equity to provide full upfront funding for a water resource project would accelerate delivery and eliminate delivery inefficiencies, this is only a small part of the P3 value proposition. The benefits of P3 to the taxpayer derive from the alignment and integration of financial interests with private-partner performance over the life-cycle of the asset.

VfM is the key driver in P3. VfM is not focused solely on the cost of borrowing, but instead accounts for the best long-term solution for infrastructure and service delivery. VfM analysis evaluates the total life-cycle costs and benefits of service delivery.

When compared to the traditional funding and delivery approach for water resources, incremental benefits of P3 may accrue from, among other factors, the following:

- **Speedier implementation of infrastructure projects, which accelerates public benefits and reduces capital costs:** Under the current structure for water resources delivery, protracted appropriations significantly increase costs by unnecessarily delaying project completion, even when Federal funding is available. This rise in costs reflects not only inflationary adjustments, but also real growth attributable to additional overhead, mobilization/demobilization, asset maintenance, insurance, and other factors. When project completion is delayed, Federal and local taxpayers pay interest on debt associated with unfinished projects while they provide no public benefit. This is a bad deal for taxpayers and the public. Under P3, full funding is made available at a project's outset with the help of private financing. Equally important, P3 transfers schedule and cost risk to the private partner, putting private capital at risk, thereby incentivizing performance. Compensation to the private partner begins only after the work is completed so that the public payment is concurrent with the delivery of public benefits.
- **Life-cycle focus of service delivery/life-cycle cost efficiencies:** Under a P3 arrangement, the private partner is typically in charge of the financing and delivery of capital improvements, as well as the operation and/or maintenance of the infrastructure asset over the term of the contract. Linking long-term asset performance to design and construction creates powerful incentives for delivering a high quality facility, which optimizes operating performance and minimizes life-cycle costs. Likewise, P3 addresses life-cycle asset maintenance, locking-in funding and ensuring through performance-based payments that assets are maintained at prescribed levels over the term of the contract.
- **Risk transfer:** With the traditional funding and delivery approach to water resources, the public sector retains almost all risks associated with the construction, operation, and maintenance of public infrastructure. Under a P3, much of this risk can be transferred to the private partner, who assumes fiduciary responsibility for the delivery and performance of the asset. This risk transfer creates real value for taxpayers, limiting cost overruns, schedule delays, performance shortfalls, and deferred maintenance. While not all risks can be fully transferred in all instances, there is real and quantifiable value to the taxpayer in reducing public sector risk exposure by allocating risk to private partners that are better positioned to manage those risks.
- **Improved service levels and reliability:** Given their use of performance-based incentives and compensation structures, P3s have a proven track record of improving the quality and service levels of public infrastructure. Specialist service providers offer access to expertise and innovation in order to meet or exceed contractually prescribed output-based performance levels for which they are held accountable.
- **Improved efficiency and innovation:** Linking long-term asset performance to design and construction creates powerful incentives for efficiency and innovation. Much of the value of P3 derives from allowing the private sector to leverage innovative approaches to meet the output standards prescribed by the public contracting authority.
- **Monetization:** Innovation, in addition to profit motive and expertise, can incentivize the private partner to identify and develop new, creative sources of revenue from public infrastructure. These new sources of income can be used to offset core infrastructure costs, or alternately, may be shared with the public sector, creating additional sources of revenue for other priorities. Asset monetization is typically not a core competency of public agencies, and thus these opportunities to extract value from existing assets often go unexplored under traditional delivery structures.
- **Heightened accountability:** Detailed contracts between the public authority and private partner regulate P3s. The public authority sets service levels and then verifies and regulates the quality of the service through financial incentives for exceeding targets or punishment for under-performance. This arrangement provides the public with greater insight into targeted performance levels, something that is not always readily available under traditional delivery.

P3 AND LIFE-CYCLE COST EFFICIENCIES: OHIO RIVER BRIDGES EAST END CROSSING



For decades, Indiana and Kentucky have been planning the construction of a new crossing over the Ohio River. The plan, now known as the Ohio River Bridges project, calls for two new bridges. One crossing is in downtown Louisville and the other slightly out of town.

One unique aspect of the Ohio River Bridges project is that the States of Indiana and Kentucky have inadvertently created a natural experiment for testing two delivery methods. The downtown bridge (“Downtown Crossing”) is being built by Kentucky under a traditional delivery approach, while the other, known as the “East End Crossing,” is being built by Indiana under a Design-Build-Finance-Operate-Maintain (DBFOM) P3.

While it is still too early to compare the delivery methodologies outright, early evidence suggests that significant value was gained by employing the P3 approach. With the completion date shortened by eight months, the private partner also produced a 28% (\$276 million) capital cost savings, as compared to Indiana’s original delivery estimates. Moreover, as the private partner will also be responsible for operating and maintaining the Bridge, it employed innovative design alternatives, such as LED lighting, more robust pavements, and “weathering steel” that will not need to be repainted, in an effort to optimize life-cycle performance and reduce maintenance costs over the 35-year term of the P3 agreement. This, coupled with guaranteed performance and handback standards, ensures that over the term of the P3 agreement, the East End Crossing will be in optimum condition.

Opponents of P3 often dismiss these potential benefits, focusing instead on one simple factor: the Federal Government has a lower cost of borrowing than the private sector. This interest rate differential alone is cited as evidence as to why P3 must be a bad deal for taxpayers. Nevertheless, this argument fails to understand that financial costs are only a small percentage of total life-cycle asset expenditures. A more important consideration is the whole-life cost of the asset, as well as the additional value to taxpayers in accelerating benefits, ensuring life-cycle asset management and transferring risk.

Case studies abound in which traditional funding and delivery of infrastructure results in delays, cost overruns, and other inefficiencies that unnecessarily burden taxpayers. One may reasonably ask whether the transfer of construction risk, coupled with more timely appropriations, might have helped to mitigate some of the skyrocketing cost overruns and schedule delays associated with the Olmsted Dam. A quarter-century delay and a three-fold cost increase⁵ evidence the intrinsic value of optimizing risk allocation, the cornerstone of P3. Equally relevant would be to ask about the efficiency and cost-effectiveness of protracted appropriations. Given current Federal appropriation levels, the Grand Prairie Irrigation Project, originally authorized in the 1950s, is not expected to be completed for decades. This timeline is particularly difficult to accept given the project's relatively basic design. As benefits will not accrue until the construction is fully completed, both Federal and State taxpayers are paying interest on debt issued to fund the project with no benefit. Moreover, delays have resulted in a near doubling of project costs, as well as questions about whether some completed components of the project (such as the pump station) will be obsolete by the time the project is ready to deliver water.⁶ Under a P3 approach, this project would likely have been completed in three years, at a significantly lower cost.

P3s and other forms of alternative finance and delivery can help public authorities to better address our Nation's water resource needs. Although P3s are complex policy tools that cannot be applied to all projects, they can create significant value for the taxpayer and the Nation when done correctly. P3s will never entirely replace traditional delivery structures, but if the Nation is to address its water resource investment needs, P3s must be included as another tool in the Federal water resources toolbox.

⁵ Authorized in 1988 by Congress at an estimated price tag of \$775 million, the most recent congressional authorization reflects a total cost of \$3.1 billion. Source: http://thesouthern.com/news/local/years-overdue-billions-overbudget-olmsted-engineers-predict-the-project-will/article_96e07d92-d9cf-5dc3-af7e-1316b1315bd6.html

⁶ The original Project Collaboration Agreement executed in 2000 stipulated a total cost of \$319 million; however, estimates provided by USACE in 2016 now indicate a total project cost of \$551 million.

3. P3 Constraints & Solutions

3.1 INTRODUCTION & OVERVIEW

Given the potential benefits of P3s, it is reasonable to inquire why these innovative structures have not been applied more broadly to federally owned or sponsored water infrastructure. The answer is actually quite simple: there are a number of systemic constraints that severely restrict—if not prohibit—Federal agencies from leveraging P3 for federally sponsored water resource projects. These constraints are relatively well understood by many within the agencies responsible for federally sponsored water resources, but to date, these impediments have not been addressed, thus restricting the use of P3.

Without a capital budget, project finance structures such as P3s are in direct conflict with the Federal pay-as-you-go budget system. Moreover, project financing, whether through public or private means, requires a dedicated funding stream to repay the associated investments, costs, and risks. However, at present, there are direct impediments to creating and dedicating a funding stream for Federal water resources.

There are two primary structures commonly used to compensate investments and risks associated with public infrastructure and services:

- (i) **Usage-based payments:** This structure involves investments to be compensated on the basis of the usage of the asset. Payments are often (but not always) made directly by the user of an asset to the private partner, as in the case of tolls, user fees, or facility charges.
- (ii) **Budget-based payments:** This structure involves compensation via payments made directly by the public agency. Payments are typically performance-based and tied to the availability of the asset and service levels, as in the case of availability payments, take-or-pay arrangements, and off-take agreements.

Regardless of the source of funding (usage payments, dedicated taxes, or general treasury receipts), the ability to dedicate and pledge a funding stream to be used to compensate investors for their costs and risks is a precondition for any alternative finance and delivery arrangement, such as P3.

Wherein instances where Federal agencies have authority to assess fees or levy taxes related to the use of Federal water resource assets, the monies are usually sent back to the Treasury General Fund or dedicated trust funds and subject to future appropriations. Without the ability to commit project-specific revenues to project costs, most Federal P3 projects are thus entirely dependent on budget-based payments (i.e., availability payments), which—regardless of risk allocation—are generally treated by budget authorities as a capital lease and scored upfront.

In other words, lacking the authority to assess and commit usage fees for specific project purposes, Federal authorities are effectively limited to availability or performance-based budget payments. However, with some limited exceptions (such as Energy Savings Performance Contracts and Power Purchase Agreements), this structure is untenable since budget scorekeeping rules under OMB Circular A-11 mandate that the entire Federal obligation relating to a project be “scored” upfront in a single year at the time the contract is executed. This process is indistinguishable from a very large appropriation for that project, and it therefore renders the probability of getting such budget approval extremely unlikely. Without the ability to leverage usage payments for P3s, and given the budget scoring treatment of budget-based payments, Federal agencies are simply unable to leverage P3 for the delivery of its federally owned and operated water resource infrastructure and services, even when P3 will produce significant benefits for the taxpayer.

To enable the use of P3 for Federal water resource projects, four critical actions have been identified to address these systemic constraints:

- Enable Revenue Generation and Ring-Fencing
- Enable Budget-Based Compensation Structures
- Further Enable Non-Federal Public-Public-Private Partnerships (P4)
- Create an Appropriate P3 Enabling Framework

Each will be discussed in the following sections.

COMPARING AND CONTRASTING FEDERAL WATER RESOURCES WITH TRANSPORTATION P₃



Some point to the use of public-private partnerships for transportation projects as an example of how to leverage P₃ for federally sponsored water resource projects. While relevant in certain respects, particularly in terms of the benefits deriving from P₃, this comparison often overlooks important differences between surface transportation and water resource sectors, such as the following:

Institutional Delivery Structure

In the delivery of transportation infrastructure, the United States Department of Transportation (USDOT) primarily acts as a Federal grant or aid agency, allocating funding for projects through State or local departments of transportation. These State and local government

agencies generally have access to significant resources and house extensive experience and expertise in project delivery. By contrast, federally sponsored water resources are either delivered directly by Federal agencies, such as USBR or USACE, or they are delivered under a cost-shared arrangement with a designated non-Federal sponsor. In the case of transferred or cost-shared projects, the institutional characteristics and capabilities of the non-Federal sponsor can vary significantly depending on the project, ranging from State or local governmental agencies to small irrigation districts or specially created joint power authorities. This lack of uniformity in the delivery of water resources, coupled by significant disparities in non-Federal sponsors, requires that Federal water resources agencies adopt a somewhat different approach to P₃ in the development of water resource projects than that applied to transportation. Offering non-Federal sponsors access to Federal credit and similar tools is simply not sufficient in and of itself to facilitate P₃ projects for federally sponsored water resource projects.

Federal Water Resource Projects

Federal agencies such as USBR and USACE are solely responsible for federally owned and operated water resource projects. As such, these agencies need the ability to engage directly in P₃ arrangements for the design, construction, financing, , and O&M of Federal water resource projects. Due to the grant nature of USDOT and FHWA projects, Federal transportation agencies have not engaged directly in P₃, but have only provided support and assistance for State and local P₃.

While these are only two illustrative examples of the differences between Federal water resource and transportation, they are important in that they underscore the need to carefully tailor authorities to enable alternative finance and delivery for federally sponsored water resources. It is not as simple as mirroring the Federal transportation experience with innovative project delivery. Although there are some good lessons to be learned from that experience, the requirements of a Federal water resource P₃ program are quite different.

3.2 FEDERAL P3: ENABLING REVENUE GENERATION & RING-FENCING CONSTRAINTS

There are three challenges facing Federal agencies when it comes to leveraging usage payments for federally owned and operated water resource infrastructure:

- (i) Limited ability to assess new fees and generate revenues
- (ii) Inability to commit revenues for project-specific purposes (ring-fencing)
- (iii) Lack of contract authority to enter into agreements that encumber future revenues

Revenue Generation

At present, Federal authority to assess fees varies significantly depending on the specific asset class of the water resource. In some cases, such as inland waterways, a long legislative history prohibits tolls on federally owned river improvements;⁷ in other cases, such as water storage, no legislative barriers exist. Constraints related to revenue generation need to be addressed on an asset-class or project-specific basis.

Although some Federal water resources are revenue generating, these rarely provide for full cost recovery. This runs counter to OMB Circular A-25 (Revised), which specifically calls for both the self-sustainability of public institutions and the need for enabling private sector participation in the provision of these services.

Revenue generation is a politically charged topic, with user groups and other beneficiaries frequently opposing payment for infrastructure and services. However, constraints impeding the ability to generate revenues must be addressed if Federal agencies are to be able to leverage private sector investment for Federal water resource projects.

Ring-Fencing

Currently, most fees and excise taxes assessed over the use of Federal water resource assets are deposited into the Treasury's General Fund or into specialized trust funds (such as the Inland Waterway Trust Fund, Harbor Maintenance Trust Fund, or the Reclamation Fund). These revenues are not available for dedicated project-specific purposes.⁸ This inability to commit project-related revenues to specific project purposes represents a significant constraint to P3.

To facilitate alternative finance and delivery structures, Federal agencies must be able to collect and retain certain revenues for project-specific purposes. This is typically done by establishing an escrow account or revolving fund in which the monies are deposited and used for project-specific purposes.

Contract Authority/Anti-Deficiency Act

The ability to assess fees and dedicate them for project-specific purposes is important; however, the capacity to assess fees is of little practical value if the monies cannot be leveraged to finance and deliver infrastructure and services. To create the necessary conditions for a financially viable P3 structure, a Federal entity needs the authority to commit those future revenues in advance of their collection.

⁷ Notable among the laws is the Rivers and Harbors Act of 1882.

⁸ This refers only to federally owned and operated water resource projects. Many cost-shared or transferred projects do allow for revenues to be held outside of Treasury, but these will be discussed further in section 3.4.

This principle runs counter to the Anti-Deficiency Act. In essence, the Anti-Deficiency Act prohibits an agency from entering into a contract that would obligate more money than the agency has available on hand. In other words, Federal authorities cannot encumber future cash flows generated from user fees, as is typical in project finance, but instead are required to prefund the works (or separate the whole project into increments able to be funded annually). This is because an Anti-Deficiency Act violation would occur if Federal authorities were to enter into a contract valued above the amount of the money available in the revolving fund at the time of executing the contract. For all practical purposes, this circumstance runs counter to the principles of project finance and impedes any possibility of a user-payment-based P3 for a Federal water resource project.

STRATEGIES FOR ADDRESSING CONSTRAINTS

Federal Value Capture and Revenue Potential

Federal authorities would benefit from the flexibility to create and assess new user fees, particularly when required for cost recovery on Federal water resource P3 projects. This policy would be aligned to OMB Circular A-25 (Revised), which specifically calls for both the self-sustainability of public institutions and the need for enabling private sector participation in the provision of these services. While certain checks and balances would need to be established, including consultation with affected user groups, the authorization of any new fees would help facilitate P3 by allowing for full or partial cost recovery associated with infrastructure and service delivery.

There is ample precedent in which special authority has been granted to assess fees over Federal infrastructure. For instance, Title 23 of the United States Code (Highways) includes a general prohibition on the imposition of tolls on Federal-aid highways. However, Title 23 and other statutes have also carved out certain exceptions to this policy. Two mainstream Federal tolling programs and several pilot programs offer States opportunities to use tolling for generating revenue to support highway construction activities and implement managed lanes on Federal-aid highways. The most relevant of these is the Section 129 General Tolling Program, which allows tolling on new highways and new lanes added to existing highways, as well as on the reconstruction or replacement of bridges, tunnels, and existing toll facilities. A similar pilot authority should be considered for inland waterways.

Likewise, consideration should be given to updating and expanding revenue opportunities for other water resource asset types and business lines. For instance, value-additive fees for enhanced service levels could be levied for some project types, such as water supply or inland navigation. It may also be possible to monetize savings or benefits in other asset classes, such as flood risk management and ecosystem restoration. Existing fee-based structures should also be reviewed, such as in the case of hydropower and recreation, to ensure that these are reflective of the true underlying value of the infrastructure.

Moreover, Federal agencies should be granted authority to work with non-Federal sponsors and other beneficiaries to take advantage of value-capture opportunities for fully Federal water resource projects, particularly when used to repay investments under a P3 structure. The funding raised could be committed to project-specific purposes, even for federally owned and operated infrastructure.

Ring-fencing and Anti-Deficiency Considerations

To facilitate alternative finance and delivery structures, such as P3, revenues must be collected and retained for project-specific purposes. Although variations and nuances by project type exist, in general, this could be achieved by either depositing funds into a legally established revolving trust fund or by authorizing funds to be deposited into an escrow account held by a third party. The third party could be either the non-Federal sponsor or the private partner.

A revolving fund is a special account into which money is deposited for expenditure without regard to fiscal-year limitations. An agency has no authority to establish a fund of this type unless specifically authorized by Congress. The establishment of a revolving fund is a special exception to the general rule that Congress appropriates funds for an agency's use on a fiscal-year basis. Accordingly, revolving funds' administration and use are limited strictly to the terms of the act that establishes them.

As a consequence, many differences among revolving funds exist. However, money left in a revolving fund at the end of the year generally remains available for the following year's use. Furthermore, 31 U.S.C. 1516 grants agency heads the authority to exempt revolving funds from the normal rules by which appropriations are apportioned by time periods of less than a year or by activities, functions, projects, or objects.

The creation of a revolving fund for individual projects or project types could allow revenues to be dedicated to specific purposes. Nevertheless, money in a revolving fund does not otherwise lose its identity as "appropriated funds" and is still subject to the restrictions of the Anti-Deficiency Act. Alternatively, allowing revenues generated from Federal water resource assets to be deposited in a non-Federal or privately held escrow account could be a practical solution for some water resource projects.

Nevertheless, occasionally Congress may grant an agency a limited exemption from the Anti-Deficiency Act by giving the agency "contract authority," allowing it to enter into binding contracts even though it does not have sufficient funds available for obligation. All such grants of contract authority are strictly and narrowly construed. If Federal agencies hope to utilize revenues for project-specific purposes, they would need contract authority to allow them to enter into contractual arrangements on the basis of future revenues.

As an alternative, the establishment of non-Federal revolving funds would likewise enable the use of alternative finance and delivery approaches. In this sense, there are some precedents that could serve as a model, particularly in the hydropower sector. The Bonneville Power Administration (BPA) provides a good example. The BPA region operates under a Direct Funding authority granted by Section 2406 of the Energy Policy Act of 1992. This authority allows USACE and BPA to utilize revenue from the sale of hydroelectric power from 21 USACE hydropower plants and make reinvestments directly back into a major rehabilitation capitalization and O&M program for those plants. This ensures the adequacy of annual funding, allowing for more strategic planning and efficient asset life-cycle management. This model of revenue ring-fencing should be applied more broadly to other asset classes in order to enable P3.

Leveraging Trust and Revolving Funds for P3 and Project-Specific Purposes

As discussed above, the establishment of Federal trusts or revolving funds for project-specific purposes is critical in creating an enabling framework for P3s for Federal water resources. At present, a number of similar funds exist, such as the Inland Waterway Trust Fund, Harbor Maintenance Trust Fund, and Reclamation Fund, but none of these currently have the legal authorities necessary to be leveraged for project-specific purposes.

Consideration should be given to a structural reform of these Trust Funds to facilitate investment in critical water resource projects. For instance, on a purely pilot basis, Congress could authorize relevant Federal authorities to dedicate some portion of the funds deposited in these Trust Funds in support of a P3. The designation of this guaranteed revenue source could be used to back repayment of private sector investments or project bonds.

Significant legislative changes would be required to enable the existing trust funds to be leveraged for P3 or other project-specific purposes, but this would quickly allow the public authorities to employ existing revenue streams to back private sector investment in Federal water resource works.

Minimum Revenue Guarantee Commitments to Treasury as a Policy Parameter

One common complaint levied against the concept of allowing revenue ring-fencing is that the U.S. Treasury depends on the revenues generated from these projects as part of its general income. Dedicating these existing revenues to project-specific purposes would create a shortfall in U.S. Treasury receipts, which could negatively impact a wide variety of critical national programs.

To address this issue, consideration should be given to creating a minimum revenue commitment to Treasury for projects that might otherwise negatively impact annual revenues. This means that P3 projects would be funded by the marginal increase in revenues over existing baselines.

Viability Gap Funding to Meet the Challenge of Cost Recovery for Water Resource Projects

Many economically justified Federal water resource projects may fall short of financial viability under a user-pay P3 structure, particularly when projects involve long gestation periods, early-stage demand risk, or the inability to immediately increase user charges to commercial levels due to affordability challenges.¹⁰ Extended revenue ramp-up periods can yield negative cash flows during the early years of a project, breaching ratio requirements for debt service coverage; increasing costs; and, more generally, impeding financial viability. If Federal agencies hope to leverage private capital for high-priority, economically justified projects that lack short-term financial viability, they must consider policy tools aimed at boosting such projects' financial viability.

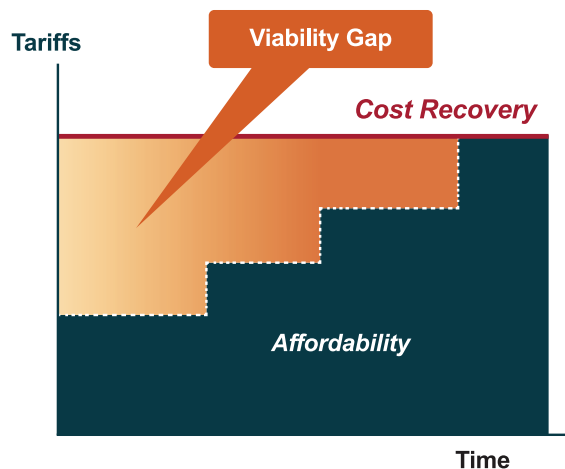


FIGURE 4: VIABILITY GAP FUNDING OVER TIME

Viability Gap Funding (VGF) is a broad term for government fiscal policy aimed at supporting infrastructure provision through the P3/P4 structures. Generally, the objective of VGF is to enhance the financial viability of a project to enable nontraditional finance and delivery through P3, ensuring the affordability of public infrastructure and services to the community. VGF mechanisms are typically offered only after all other practical remedies have been exhausted (such as refinement in the scope or standards of a project).

¹⁰ Affordability may be measured both in terms of household income and by comparison with the price of alternative water sources. For instance, where public authorities are pursuing aquifer conservation, environmentally sustainable irrigated water systems may initially prove more expensive than simply pumping from depleting aquifers. Smart subsidies or other VGF mechanisms can be employed on a temporary basis to augment demand or revenue for policy-preferred water usage.

Depending on the needs of the project, VGF can be offered either directly to the private partner or directly to rate-paying beneficiaries (users) of the asset. Forms of VGF can include, amongst others, the following:

- **Cash grants:** Monies from the Federal agency paid to offset a predefined level of project costs, thereby enhancing financial viability.
- **Smart subsidies or usage incentives (to users):** Federal funding or tax credits provided on a temporary basis to users to offset part of the user fee and/or to incentivize use of the public asset. This accelerates demand while enabling commercial pricing, improving project viability.
- **Minimum revenue guarantees:** Federal agency guarantees to a private partner of minimum revenues during a specified period. Payments of the guarantee are defined as the difference between predetermined revenue levels and actual revenues, based on tariff and demand levels. In practice, whenever a private partner does not reach the predetermined level of income, the public entity will pay the private partner the difference between the predetermined level and actual income. Minimum revenue guarantees lower project demand risk and secure debt service coverage ratios, thereby improving a project's financial viability.
- **Concessionary finance:** Federal credit programs, such as the Water Infrastructure Finance and Innovation Act (WIFIA), lower financing costs in order to enhance project financial viability or lower user fees.
- **Other:** A public entity may employ a wide range of other policy tools, such as tax abatements or tax credits, work-in-kind contributions, or land-use rights.

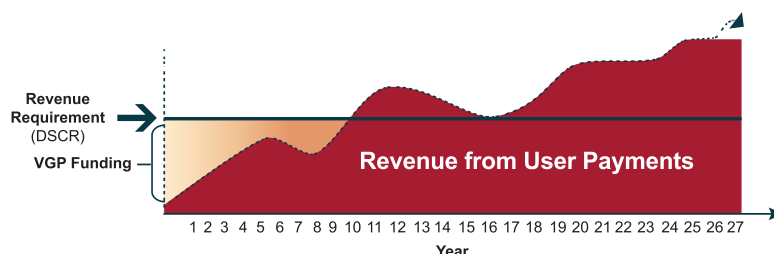


FIGURE 4: VIABILITY GAP FUNDING

Eligibility criteria for VGF can vary, but generally include the following:

- The project is economically feasible, but not financially viable in the short term (the expectation is that the project will transition to total cost recovery and financial viability within a specified period, not exceeding 50% of the term of the P3 agreement).
- Project repayment is primarily based on user payments.
- Private investors are selected through an open and competitive bidding process.
- Asset ownership remains with the public sector.
- The feasibility study evidences benefits deriving from a P3 finance and delivery structure, including optimal risk allocation, and concludes that the project is economically feasible (including technical, legal, social, and environment aspects) and will become financially viable with VGF support.
- The amount of the VGF is generally a financial bidding parameter during the P3 procurement.

Due to limited affordability by users, full cost recovery may be a challenge for some federally sponsored water resource P3 projects. Consequently, Federal authorities should explore the establishment of a broad-based VGF program for qualified projects executed under a P3 structure. Projects most likely to require VGF support will frequently be in rural and poorer communities, so consideration might be given to leveraging the financial infrastructure already in place at the U.S. Department of Agriculture (USDA) for these purposes.

PROPOSED ACTIONS

Revenue Generation

- Where required, such as in the case of inland waterways, seek legislative authorization to impose tolls on a pilot basis, subject to strict conditions and oversight. Legislation could be modeled on Title 23 exemptions for Federal highways.
- Where legislation is not required, develop policies for the assessment, collection, and regulation of user or value-additive fees for Federal water resource projects. This should also include a broad review of existing fees and tariffs to determine whether these accurately reflect current market values.

Ring-Fencing & Trust Funds

- Seek congressional authorization for a P3 pilot revolving fund, which under 31 U.S.C. 1516 would be exempt from the normal appropriations rules and thus available for project-specific purposes. Moreover, request contract authority with regard to the use of the P3 pilot revolving fund through a limited exemption from the Anti-Deficiency Act. An exemption would allow eligible Federal water resource agencies (such as USBR and USACE) to enter into binding contracts on the basis of future revenues, even though they do not have sufficient funds available for obligation. The scope of this pilot application can be limited to include only a predefined number of projects or specific project types (such as irrigation, water supply, or inland waterways), until Congress has the opportunity to fully assess program benefits.
- Likewise, seek congressional authorization to allow for the establishment of non-Federal revolving funds to enable the use of alternative finance and delivery approaches for federally owned and operated water resource projects. Pursue this authorization in a manner consistent with the Direct Funding authority granted by Section 2406 of the Energy Policy Act of 1992 for BPA, allowing Federal authorities to dedicate and commit project-specific revenue. This model of revenue ring-fencing should be authorized to support and enable P3.
- Initiate actions to assess the viability of reforming existing Federal water resource trust funds, such as IWTF, HMTF, and the Reclamation Fund, to dedicate a portion of associated revenues to be used for project finance purposes. These purposes include repayment of private debt and equity under a P3 or issuance of revenue bonds.

Policy Parameters for Revenue-Neutral P3

- Federal agencies should collaborate with Treasury, OMB, and others to develop a broad-based policy defining the application of P3 for works that currently generate revenues for the General Fund. The policy should articulate considerations for enabling P3 in the event that current revenue levels are guaranteed, with some potential sharing of additional revenues between the project and Treasury.

Viability Gap Funding

- Federal water resource agencies should work with Treasury, USDA, the U.S. Environmental Protection Agency (EPA), and others to develop a broad-based VGF program for federally sponsored water resource projects executed under a P3 structure. Federal aid programs should be coupled with expanded access to Federal credit programs to ensure equitable access to private sector financing by all communities and projects.

3.3 FEDERAL P3: ENABLING BUDGET-BASED COMPENSATION STRUCTURES (E.G., AVAILABILITY PAYMENTS, PERFORMANCE CONTRACTS)

CONSTRAINTS

Given the existing policy and legislative constraints relating to revenue generation and ring-fencing, Federal water resource agencies are effectively limited to budget-based compensation structures for P3 projects. Nevertheless, while budget-based P3s are very common both in the United States and across the globe, a number of constraints exist that limit their use with regards to Federal water resource projects.

Budget Scoring

Given the lack of authorization to assess fees and dedicate them to project-specific purposes, Federal authorities are essentially restricted to compensating private sector investments through budget-based payments. In accordance with OMB Circular A-11, however, these long-term payments are mostly— although not always—treated for budget scoring purposes as a capital lease or lease purchase, thereby requiring the entire project cost (an amount equal to the government's total obligations over the life of the P3 contract) to be scored against the legislation in the year in which the budget authority is first made available. In other words, regardless of how and when the work will be accomplished, if the Federal government is at some level responsible for financial commitments made in out-years, it must account for this commitment the year in which the commitment is first made. This budgetary impact in a single year is thus the total value of the project, effectively precluding Federal authorities from utilizing P3 to deliver water resource projects since such a large cost would eliminate sufficient funding for other ongoing projects.

The primary purpose of budget scoring is to ensure proper control and disclosure of resources for capital investment and operational expenditures. Federal budgetary scorekeeping rules are implemented primarily through OMB Circular No. A-11, which came about in the early 1990s in reaction to perceived abuses during the 1980s, especially in the area of real estate lease purchases where off-balance-sheet financing techniques left many believing that more visibility into the extent of financial commitments was needed. At the time these rules went into effect, OMB elected to use the principles embodied in Financial Accounting Standards Board (FASB) Statement No. 13, which is a set of accounting rules designed to govern how private sector companies either expense or capitalize leases.

Current scoring practices set forth in OMB Circular A-11 establish that for most long-term obligations to acquire an infrastructure asset (or to improve an existing asset), the budget authority will be scored against the legislation in the year in which the budget authority is first made available in an amount equal to the government's total potential obligations over the life of the contract. Under current scoring guidelines, projects involving private sector financing are often qualified as a capital lease purchase, thereby requiring that the totality of the government's potential obligations relating to the contract be scored in the year in which the obligation is incurred. Nevertheless, there have been notable exceptions to this at the Federal level, particularly in projects involving energy/utility initiatives and civil works projects.

Continuing Contract Authority

P3 projects involve multi-year obligations and payment streams, therefore, the associated contract must cover the needs or requirements of more than one fiscal year. In other words, performance and obligations extend into multiple fiscal years. Unless Federal authorities have either specific multiyear contracting authority (e.g., 62 Comp. Gen. 569 (1983)); are contracting in compliance with the multiyear contracting provisions of the Federal Acquisition Streamlining Act of 1994; or are operating under a no-year appropriation (e.g., 43 Comp. Gen. 657 (1964)), the Anti-Deficiency Act, together with the bona fide needs rule, prohibits contracts purporting to bind Federal agencies beyond the obligational duration of the appropriation. This is because the current appropriation is not available for future needs, and appropriations for those future needs have not yet been made.

Put another way, a fixed-term appropriation (fiscal year or multiple year) may be obligated only during its period of availability and only for the bona fide needs of that fixed term. The Anti-Deficiency Act prohibits the making of contracts which exceed currently available appropriations or which purport to obligate appropriations not yet made. If an agency does not have specific multiyear contracting authority but enters into a multiyear contract solely under authority of a multiple year or no-year appropriation, then the full contract amount must be obligated at the time of contract award.

To facilitate Federal P3 projects and mitigate contracting and appropriation risk, Federal water resource authorities would benefit from multiyear contracting authority.

Budget Prioritization

Given the accelerated delivery and cost savings associated with P3, as well as the associated risk transfer, traditional budget prioritization methods are not fully reflective of the underlying value of these benefits. Put another way, the current budget prioritization process does not account for or recognize benefits specifically deriving from the use of an alternative finance and delivery approach and may put P3 projects at a disadvantage when seeking Federal funding.

The ability to accelerate the delivery of an infrastructure asset through P3 not only results in efficiency savings, but also accelerates the resulting public benefits of the project. This should be considered when establishing budget priorities. Moreover, the value of risk transfer should also be considered. P3 typically transfers significant risk to the private partner, reducing Federal exposure to cost overruns, schedule delays, deferred maintenance, system performance, technology obsolescence, etc. The value of this risk transfer can and should be quantified and taken into consideration in calculations for budgeting purposes. Likewise, life-cycle efficiencies should be considered, particularly when they result in a higher return on Federal investment.

Value derived from the delivery method itself needs to be assessed and evaluated so that Federal authorities can explore the value of P3 on projects and prioritize accordingly.

STRATEGIES FOR ADDRESSING CONSTRAINTS

Alignment and Application of Budget Scoring Rules for Civil Works Concessions

As mentioned above, the Federal budgetary scorekeeping rules, which are implemented primarily through OMB Circular No. A-11, came about in the early 1990s in reaction to perceived abuses in the area of real estate acquisitions through lease purchases. At the time these rules went into effect, OMB elected to use the principles embodied in FASB Statement No. 13, which is a set of accounting rules designed to govern how private sector companies either expense or capitalize leases. Now that more than 25 years have passed, many see a compelling need to revisit the logic of continuing to apply these same rules blindly to all infrastructure classes, especially because the underlying accounting rules have changed.

The current budget scoring system discourages Federal agencies from looking to the private sector and its considerable resources to aid in addressing Federal water resources. The Federal Government has been unwilling or unable on its own to make direct Federal cash and credit available to fully fund its massive infrastructure needs upfront, as current budgeting rules require. Federal agencies have thereby been doomed to continually worsening infrastructure; or, as an alternative, to short-term expensive remedies to avoid budget scoring constraints. Recognizing the need for full disclosure and transparency in the budget process, consideration must be given to an alternative approach, at least on a pilot basis.

While efforts have been made in the past to revise OMB Circular A-11 and Appendix B, Federal agencies involved in water resources should look more broadly for a solution. They should not be subject to the same rules at all. It makes little sense for private investment in Federal water resources to be subject to the same scorekeeping guidelines as real estate assets, such as public buildings. A lease-versus-own decision for public buildings is important, as the government itself is primary off-taker and beneficiary of the asset. However, water resources, which are civil works, are built to provide public benefits. Water resources should not be qualified or scored in accordance with standards applied to real estate assets, but should be considered separately.

Evidence of this differentiation can now be found in standard accounting principles, which distinguish leasing from other forms of public-private partnership. For example, Government Accounting Standards Board (GASB) Statement 60 establishes accounting and financial reporting standards for service concession arrangements, distinguishing these from capital purchases. In broad strokes, GASB Statement 60 addresses how to account for and report service concession arrangements, a type of P3 commonly leveraged for civil works projects, such as toll roads. Although the details of Statement 60 are not relevant to the discussion, this codified distinction between certain types of civil works P3 and capital leases underscores the need to establish suitable budget scoring criteria for private investment in civil works projects.

Given that there is a need to carve out new scoring parameters for civil works concessions and other forms of P3, the logical question would be how to determine the budgetary scoring treatment for these arrangements. To address this question, it is important to understand that in accordance with global accounting standards, there are essentially two methodologies for determining the budgetary and accounting treatment of P3: the Control Methodology and the Risk-Reward Methodology.

The **Control Methodology** focuses principally on the level of public sector control of services. The logic behind this approach is that if the Government agency initiates construction of an asset, specifies its characteristics, retains ultimate financial responsibility, and is the primary beneficiary, then it “controls” the assets. As such, the assets should be classified as “on balance sheet” and scored as a capital purchase (essentially, as debt), with all obligations associated with the P3 (including future payments) being scored upfront. This implies budget approval in a single year for the totality of the cost of the asset, which for all intents and purposes makes project approval impossible. This is the methodology primarily applied in *OMB Circular A-11*, Appendix B.

Alternatively, the **Risk-Reward Methodology** is based on an economic risk and reward test. The fundamental principle is that the economic ownership of an asset lies with the party that possesses the asset and carries the risks, benefits and burden in connection with the asset. The assessment of whether a P3 asset is to be counted as Governmental is based on a risk transfer test. Where most of the project risk has been transferred to the nongovernment partner, then the assets should be classified as “off balance sheet” and any budget payments would be scored like an operating lease, over the life of the project. If project risk is not transferred, then assets would be classified as “on balance sheet” and scored upfront. This risk-reward methodology is commonly applied across the globe, as codified, for example, in the European System of Accounts ESA10 and ESA95.

The following decision tree illustrates the application of the risk-reward methodology for P3 projects in the UK and Europe, per ESA10 and ESA95:

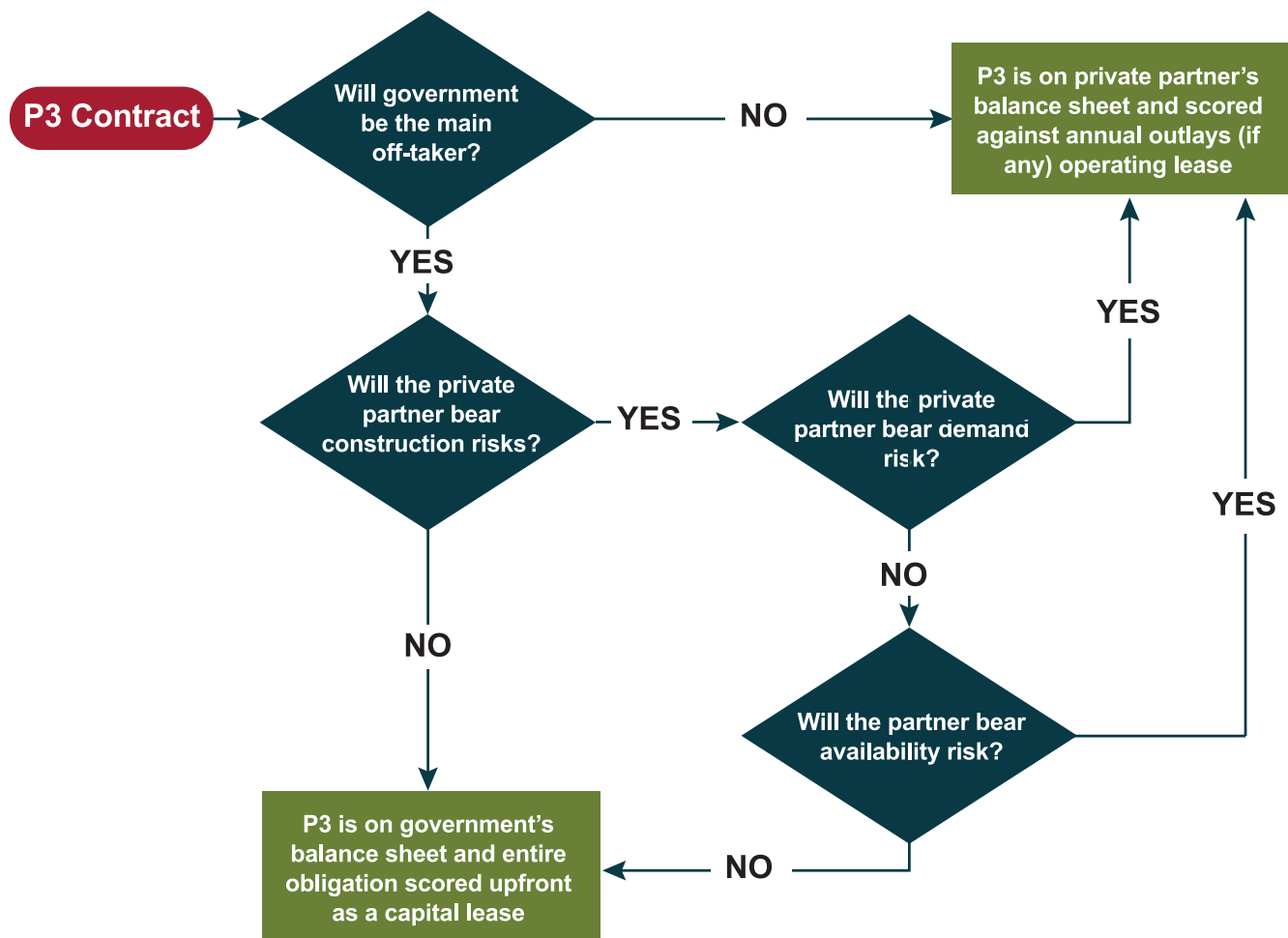


FIGURE 6: ACCOUNTING TREATMENT & BUDGET SCORING: ESA 95 DECISION TREE FOR STANDARD DBFOM P3 ARRANGEMENT

In the absence of clear scorekeeping rules for civil works projects, this risk-reward approach, which is well regulated and understood on a global level, should be applied to water resource projects involving budget-based P3. These rules achieve the same purposes as current OMB budget scoring guidelines, ensuring the proper control and disclosure of resources, but they more accurately reflect the underlying risk allocation contemplated in P3 arrangements. Moreover, this treatment would not amend existing rules, but instead create a new category of control. Accordingly, this treatment should be implementable by the OMB Director via Memorandum, in much the same way that scorekeeping guidelines were created for other priority initiatives, such as those codified in the Raines Memo for the Military Housing Privatization Initiative.

Budget Prioritization for Federal P3 Projects

As mentioned above, in the event that budget-based payments were allowable for P3, another critical hurdle to overcome would relate to budget prioritization for Federal P3 projects. How would a P3 project be compared and contrasted with other candidate projects, whether P3 or not, to determine which should receive Federal funding? Broader prioritization parameters are necessary to ensure that projects are compared on equal footing.

Potential investments are currently prioritized on the basis of their Benefit-Cost Ratio (BCR). While this process is well understood, it relies heavily on historic costing and completion estimates with no consideration whatsoever of issues such as Federal return on investment, Value-for-Money (VfM), accelerated benefits, or risk transfer. These elements are critical factors that should be contemplated within the budget prioritization process.

- **Federal Return on Investment:** Federal return on investment refers to the public benefits deriving from each Federal dollar appropriated to a project. It should be calculated on a risk-adjusted basis, reflecting estimated costs associated with differing delivery methods.
- **Value-for-Money:** VfM is defined as the optimum combination of life-cycle costs and quality. VfM processes have been designed and utilized, including at the Federal level, to help government officials compare the benefits of utilizing a P3 approach to traditional delivery. VfM analyzes the total life-cycle costs of service delivery and evaluates the benefits to the public at large, comparing these to alternative approaches (such as the cost of doing nothing or traditional delivery). Where there is true VfM derived from leveraging private sector financing and expertise, this should be considered for purposes of budget prioritization. Notably, in 2015 the VfM analysis was recommended as a best practice tool to be employed by all Federal agencies by a Special Panel on Public-Private-Partnerships created by the Committee on Transportation & Infrastructure of the House of Representatives.¹¹
- **Accelerated Benefits and Cost Savings:** In a manner consistent with VfM, consideration should be given in the BCR calculation to the accelerated benefits and life-cycle cost-savings resulting from a P3. Excluding these potential benefits and cost reductions will put P3 projects at a disadvantage for budgetary considerations, thus hindering the ability to leverage private investment and expertise for Federal water resource projects.
- **Risk Transfer:** Real and quantifiable benefits are associated with the transfer of project risks to a private partner, including completion risk, schedule risk, and constructibility risk. When assessing the BCR for projects, risk must be considered. If two identical cars were being offered at the same price, but one included a lifetime service warranty and the other did not, any rational person would choose the car with the lower risk profile. In much the same way the value of an insurance policy is calculated, the value of risk transfer can also be calculated. Quantitative risk analyses should be used to evaluate and prioritize projects and project delivery methods. For its part, the FHWA Office of Innovative Program Delivery has been utilizing quantitative risk assessment for years for the evaluation and prioritization of project delivery models, so this is not a new tool or concept for Federal authorities. To date, however, it has never been contemplated within the BCR or budget prioritization process for water resource projects. This should change.

If budget-based payments are to be leveraged for P3 projects, a broader budget prioritization framework that reflects the relative costs and benefits of different delivery methodologies is needed. Otherwise, it will be difficult, if not impossible, to secure appropriations for projects being delivered under P3 and other alternative finance structures.

¹¹ Findings and Recommendations of the Special Panel on Public Private Partnerships [http://transportation.house.gov/uploadedfiles/p3_panel_report.pdf] pages 19-22

Application of Performance-Based Contracting to Water Resources

As mentioned previously, the Nation's Federal water infrastructure has strengthened the American economy, created jobs, reduced risks, enhanced life-safety and standards of living, and bolstered our global competitiveness. Nevertheless, it is aging and in many cases has exceeded its useful life-cycle. Given competing budget requirements, sufficient resources have not been made available to maintain Federal water infrastructure assets in order to meet the requirements of the next 25–50 years. Federal appropriations for water infrastructure have been in a steady decline in real terms over the last four decades; however, a “fix-as-fails” approach is neither viable nor affordable over the long term. Deferred maintenance and repair backlogs represent a massive challenge for America's water resources. Performance contracts are one potential finance and delivery structure that should be considered, particularly to address deferred maintenance and ongoing O&M needs.

Performance contracting can be a means of delivering O&M improvements based on future budgetary savings, as compared with historic O&M expenditures. It enables money that will be saved as a result of the introduction of new technologies, repairs, efficiencies, and other improvements to be used to offset the cost of financing, installing/building, operating, and maintaining those improvements. By definition, the future savings must be greater than the costs of the improvements.

At the Federal level, performance contracting has been used extensively for energy efficiency projects, such as Energy Savings Performance Contracts (ESPCs). More broadly, performance contracts have also been used to pay for measures to reduce O&M costs or implement rehabilitation projects. Federal agencies responsible for water resources should be authorized to utilize performance-based contracting to address O&M and new improvements on existing infrastructure. This could be achieved by expanding application of OMB Memorandum M-98-13 to include improvements in O&M efficiencies for Federal water resources.

Under a performance-based contract, a private partner designs; installs; finances; and, if required, operates and maintains the improvements. The private partner is then paid according to the savings achieved (i.e., its performance).

Performance contracting is used to achieve many different goals. Chiefly, it offers an affordable mechanism for funding renovations and improvements out of already-budgeted resources for ongoing O&M, which means operating under existing operational budgets and not competing with other projects for capital funding. The benefits of a performance contract for the owner of the public asset include:

- Accelerated implementation due to upfront financing and incentivized delivery of the improvements.
- Reduced risk (the contractor takes on the risk of not achieving savings).
- Interest of owner and contractor align over the long-term.
- Turn-key services: the performance contractor provides all required services, reducing need for internal expertise and additional resources by the owner.
- Guaranteed, measured savings.
- Project financing can be “off balance sheet” and not affect debt load.
- Addition of State-of-the-art products and services.

- Higher savings (than if the owner carried out the work itself).
- Savings may be used for additional improvements (capitalizing savings or savings reinvestment).
- Minimal impact on budget scoring (as project relies on savings, not new capital budgets).

There are many ways of structuring a performance contract. The most common is first out or guaranteed savings, in which all the private partner's costs (equipment, installation, mark-up, fees, and so on) are repaid annually out of the savings as they accrue. The length of the contract is usually chosen so that all costs are paid for by the end of the contract period. This method allows the addition of extra measures as the contract progresses, with the increased savings covering the higher costs.

The second type of contract is known as **shared savings**. In this arrangement, the owner and the private partner agree to share the savings over the contract period according to an agreed formula. The actual cost of the measures is not included in the contract, and the owner has no obligation to pay off those costs. In return, the private partner does not guarantee the savings, but is incentivized to maximize system efficiencies in order to recover invested costs and earn profits. Contract terms are usually longer than a guaranteed savings structure because it takes longer for the investment to be recovered, and the risks to the contractor are higher.

A third type is the **chauffage or full services** contract whereby the private partner effectively takes over the operation of a customer's facilities, as well as implements upgrades. The owner pays the private partner a regular fee equal to the budget before the project or some other negotiated fee.

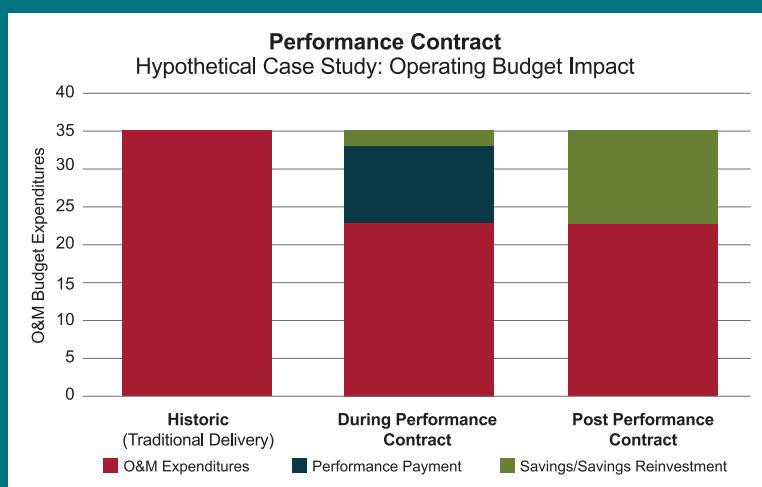
Performance contracts typically run from 10 to 25 years, depending on the complexity of the project, the amount of savings to be achieved, and the types of measures to be implemented.

In some performance contracts, a percentage of cost savings is reinvested in additional improvements, thereby further reducing capital budget allocations. Savings reinvestment can also be used to minimize the impact of future investment on user fees.

Although a wide variety of structures exist, the ability of Federal agencies to lock in long-term savings and infrastructure improvements through performance-based contracting is critically important. This type of structure could be used to address inland waterways and hydropower, among other critical assets. To achieve this end, either the application of Memorandum M-98-13 should be expanded to include improvements in O&M efficiencies for Federal water resources, or special authorities should be pursued.

PERFORMANCE CONTRACTING – A HYPOTHETICAL CASE STUDY

With a median asset age of 50 years, many hydroelectric power plants in a specified region have experienced significant outages that degrade the reliability of the USACE hydroelectric system. The ability of these plants to generate electricity declined from about 95% in 1987 to 85% in 2015 — a trend that is approximated in USACE hydroelectric power plants nationwide. Power outages occur because the plants are aging, and when outages occur, repairs are generally reactive and short term. The USACE budgeting process requires extensive justifications that can take a year or longer to complete, making it difficult to make extensive repairs and rehabilitations when they become essential. Also, USACE's budget has declined in real terms over the past decades, while capital investment needs to maintain and repair the power plants are increasing exponentially.



The O&M budget for these hypothetical hydroelectric systems has been relatively static over the past decades at \$35 million per year. After a competitive procurement, a private contractor has guaranteed to upgrade and modernize the facilities under a performance contract.

The contractor finances and installs approximately \$90 million in infrastructure and equipment improvements, offering to recover these investments over a 10-year period (an estimated annual payment of \$10 million per year over the contract). As a result of the investments, the real cost

of operations reduces from \$35 million per year to \$23 million per year, a 33% savings, while system reliability is restored to 90%. The following graphic represents the budgetary impact (note: USACE makes no capital investment, but simply repays the investment through operating savings):

The “excess savings” during the term of the performance contract are used for investment in other improvements (savings reinvestment). At the end of the contract, the USACE retains the improvements. As with ESPCs, the contractor would be paid an amount designed to cover its investments through proceeds that come exclusively from reduced expenditures. There would be full risk transfer to the private contractor with regard to targeted savings. As such, and assuming that OMB were to apply similar criteria to those used for ESPCs, these performance contracts would be scored and paid on a recurring annual basis, not upfront, as in a lease purchase or capital lease. This would be justified under the exceptions set forth in OMB Circular A-11, Appendix B, under Memorandum M-98-13, inasmuch as these performance contracts involve Federal facilities, energy (and other) efficiency improvements, life-cycle cost-effectiveness, and improvements in O&M efficiencies.¹²

¹² Under current scoring guidelines, an eligible project would need to qualify under an energy conservation measure, including projects involving cogeneration facilities, renewable energy sources, improvements in O&M efficiencies, or retrofit activities.

PROPOSED ACTIONS

Budget Scoring

- In accordance with GASB distinctions, budget scoring rules for federally sponsored water resource and similar civil works P3 arrangements should be distinguished from capital leases. To achieve this end, an inter-agency working group should develop and propose an appropriate scoring framework for civil works concessions and similar arrangements, based on the risk-reward methodology and leveraging best practice guidance established under ESA95 and ESA10.
- In the event that the Administration and Congress reconvene a Commission on Budget Concepts to more broadly review budget scoring for privately-financed infrastructure, Federal water resource agencies should request that they be represented so that civil works projects are given the appropriate consideration.

Continuing Contract Authority

- Secure specific multiyear contracting authority (e.g., 62 Comp. Gen. 569 (1983)), to allow Federal agencies involved in Federal water resource P3s to enter into a multiyear contract without requiring obligations of the full contract amount at the time of contract award.

Budget Prioritization

- Together with OMB, Federal water resource agencies should develop a policy framework for budget prioritization of Federal P3 projects.

Application of Performance-Based Contracting to Water Resources

- Through a legislative initiative, the application of the performance contracting principles set forth in Memorandum M-98-13 should be expanded to include improvements in O&M efficiencies for Federal water resources.

3.4 NON-FEDERAL P3: POLICY FRAMEWORK FOR FEDERAL FUNDING CONTRIBUTIONS FOR COST-SHARED AND TRANSFERRED P3/P4 PROJECTS

Given the limitations impeding P3 for fully Federal water resource projects, attention has been given to facilitating public-public-private partnerships for cost-shared or transferred water resource projects. In this sense, non-Federal sponsors may have greater flexibility than Federal authorities with regard to both revenue generation/ring-fencing and budget-based payments. The ability to leverage private investment through a locally led P4, however, also faces some important challenges.

CONSTRAINTS

P3 Enabling Legislation

Not all jurisdictions have P3 enabling legislation applicable to water resource projects, and as such, not all non-Federal sponsors can leverage P3/P4 for project delivery.

Non-Federal Value Capture

Value capture refers to the ability to monetize local benefits deriving from a water resource project. This is critical for cost-shared or transferred works P3, as the private investment must be repaid, at least in part by the non-Federal sponsor. While some jurisdictions may be able to leverage value-capture tools, such as tax increment financing, special assessments, and dedicated taxes, poorer and less populated communities will struggle to create a reliable or creditworthy revenue source. This limits access to private finance for P4 projects in many jurisdictions. P4 should not be viewed only as a tool for wealthier communities.

Non-Federal Sponsor

It is important to note that when dealing with water resource projects, non-Federal project sponsors are often small, specially established, quasi-public entities, such as irrigation districts, whose sole purpose is the project in question. This is very different from State-level departments of transportation that manage P3 projects for transportation infrastructure. These smaller entities are often not creditworthy, nor do they have the resources necessary to serve as the primary counterpart to a private partner under a P4. This reality limits the scope and application of P4 opportunities, while simultaneously introducing new risks that need to be addressed and mitigated in any P4 arrangement. In many instances, the non-Federal sponsor may require both technical assistance, as well as ongoing support, from State or Federal agencies under a P4.

Federal Funding

Unless a non-Federal sponsor is willing to assume full responsibility for the cost-shared or transferred works, the Federal cost-share partner still maintains funding and other obligations under a P4. The problem, however, is that if Federal funding and other obligations are not provided in accordance with the terms of the P4 agreement, the benefits of the P4 may be reduced or eliminated, creating a potential breach of the P4 agreement. While it is unlikely that the Federal agency could be held liable for any failure to deliver funding or other obligations, this is a significant risk that may dissuade non-Federal sponsors from pursuing P4 projects. Federal agencies must be able to commit to their cost-share and other obligations contemplated under a P4.

Project and Budget Prioritization Criteria

Finally, many cost-shared or transferred works considered for alternative delivery under a P4 may not otherwise meet standard budget prioritization criteria. As such, there is a need for a policy framework to objectively screen, select, and prioritize for budget purposes Federal funding for P4 projects. A project should not automatically receive Federal funding by virtue of the fact that it is being led as a P4, but there are a number of considerations beyond the traditional BCR calculation used for budget prioritization. Criteria must be in place to prioritize these projects in an equitable fashion, recognizing that not all projects or jurisdictions are able to leverage P4 for federally sponsored water resource projects.

STRATEGIES FOR ADDRESSING CONSTRAINTS

P3 Enabling Legislation

States should be encouraged to implement or expand existing State-level P3 legislation to explicitly allow for P3 to be used for water resources projects.

Non-Federal Value-Capture and Non-Federal Sponsors

Federal agencies should create a policy framework to assist non-Federal sponsors of cost-shared water resource projects to identify, access, and leverage value-capture opportunities. This policy framework should also include parameters of Federal technical assistance to eligible non-Federal sponsors with regard to P3 procurement, contracting, and contract governance and oversight. The policy framework should also align with other initiatives to develop Federal aid programs and Viability Gap Funding to ensure that poorer and rural communities also have access to private sector financing and expertise.

Federal Funding and Prioritization Criteria

Federal agencies should establish detailed screening and selection criteria for P4 projects, including budget prioritization criteria. This would allow for the objective assessment and ranking of eligible P4 projects across jurisdictions and project purpose. While this framework would necessarily align with the budget prioritization parameters proposed for fully Federal P3 in section 3.3, including consideration of issues such as Federal return on investment, Value-for-Money, accelerated benefits, and risk transfer, it would also need to include measures to ensure the equitable application of these criteria for poorer or rural communities (such as poverty mapping). The policy framework for funding P4 would also need to include broader consideration of total annual budget allocations for P4 projects.

PROPOSED ACTIONS

P3 Enabling Legislation

- Federal agencies could provide local sponsors with broad-based parameters and best practice toolkits for establishing adequate P3 enabling legislation for Federal water resource projects

Non-Federal Value-Capture and Support for Non-Federal Sponsors

- Establish an assistance framework for non-Federal sponsors of cost-shared or transferred water resource projects

Federal Funding and Prioritization Criteria

- Create a budget prioritization policy for the Federal funding of P4 projects.
- As discussed in section 3.2, Federal water resource agencies should develop a broad-based VGF program that includes Federal aid and subsidies for eligible P3 projects to ensure equitable access to private sector financing by all non-Federal water resource partners.

3.5 P3/P4 ENABLING FRAMEWORK

A broad-based policy framework and P3 program strategy is required to ensure that P3 is leveraged to create successful and sustainable results over the long-term.

CONSTRAINTS

Congressional 302(b) Appropriations Ceilings

At present, alternative finance and delivery approaches, such as P3, are contemplated within Congressional 302(b) appropriations ceilings. This impedes the use of innovative finance, as monies obligated for P3 are taken out of other projects. Even if P3s create greater efficiencies and more opportunities in the long term, Federal authorities are disinclined to pursue P3s if the tradeoff is that funding is reduced for existing programs and priorities.

Enabling Legislation

Although many Federal agencies involved in water resources, such as USACE and USBR, have broad authorities to partner with non-Federal entities, including nongovernmental and private sector entities, the lack of an explicitly created framework to enable P3 for federally owned or operated water resources constitutes a significant constraint. Most Federal P3 initiatives for civil works that have been successful to date (such as for energy and highways) have benefited from specific enabling legislation or special authorities. However, no similar actions have been undertaken to facilitate P3 for Federal water resources.

The Water Resources Reform and Development Act of 2014 (WRRDA 2014) set out a framework for USACE to establish a P3 pilot program for authorized water resource development projects. However, activities related to the program were only authorized to the extent specifically provided for in subsequent appropriations, which have not been granted. Moreover, the legislation does not provide specific authorities necessary to enable P3, but simply sets the parameters for developing a program and identifying constraints. Other agencies, however, have received no specific authorities relating to P3 or alternative finance and delivery, thereby limiting their ability to structure solutions to those provided in existing legislation.

Critical areas where legislation is lacking include the following:

- Authorities to assess fees and commit them for project-specific purposes.
- Contract Authority and exemption from the Anti-Deficiency Act to enable Federal agencies to encumber future revenues in specified revolving funds for P3 project-specific purposes.
- Contract Term: Federal agencies require authorization to enter into long-term contracts to allow for repayment opportunity and to minimize contract risk.
- Authorized P3 Program: Where legislation is in place to support P3 programs (such as Section 5014 of WRRDA 2014), the enabling legislation is only authorized to the extent specifically provided for in subsequent appropriations acts. Nevertheless, to date, there have been no appropriations assigned to Section 5014 of WRRDA, thereby impeding USACE's ability to formally undertake actions to develop a P3 pilot program.

Access to Federal Credit Programs/Infrastructure Banks

In order to lower the cost of privately-financed water resources, additional efforts should be made towards expanding access to concessionary finance, credit enhancements and infrastructure banks for federally sponsored water resource projects. While some facilities exist, such as WIFIA, State Revolving Funds, and State Infrastructure Banks, these have been focused principally on non-Federal water resource projects.

These credit facilities could offer a range of loans and credit assistance enhancement products for eligible water resource projects, accelerating delivery and reducing costs. While these financing tools are important, they do not constitute “free money.” Projects would need to generate sufficient revenues to ensure repayment of the financed amounts, whether debt or equity. Either users of infrastructure assets, such as inland waterways, will need to pay tolls, or budget allocations funded by general tax receipts will need to be made available to repay these loans.

Moreover, not every infrastructure project is created equal. In some jurisdictions, concentrated population centers and higher disposable income may enable cost recovery through user payments, while in others, such as rural or poorer communities, cost recovery is simply an impossibility. Regardless of the structure, there will need to be careful attention given to ensuring that these financing tools can be effectively and equitably leveraged by all States, lest an entrenched two-tiered network of Federal water resource “haves” and “have-nots” is created.

STRATEGIES FOR ADDRESSING CONSTRAINTS

Congressional 302(b) Appropriations Ceilings

- On a pilot basis, funding for alternative finance and delivery projects, such as P3, could be excluded from the Budget Committee 302(b) ceilings.

Enabling Legislation

- Work with Congress to address shortfalls in the existing legislative framework. This could be done on a pilot or permanent basis. Examples could include granting specified Federal agencies, such as USACE and USBR, with long-term contracting authority, as was done under the DoD energy initiative.¹³

Federal Credit Programs/Infrastructure Bank

- In the event that a national infrastructure bank is created, a credit window should be made available for federally sponsored water resource projects. Because certain Federal agencies, such as USACE and USBR, own and operate some water resource projects, provisions should also be made to allow private sector participants to access the credit window for fully Federal water resource projects, such as inland waterways, without the entire amount of the credit being scored against the agency's budget in the year of the drawdown.
- Expand the application of WIFIA to allow a private partner to access to the credit facility for fully Federal water resource projects.

PROPOSED ACTIONS

Congressional 302(b) Appropriations Ceilings

- On a pilot basis, Congress should consider exempting funding for alternative finance and delivery projects, such as P3, from 302(b) ceilings. New funding could be provided for P3 projects, at least on a pilot basis.

Enabling Legislation

- Federal agencies should work with Congress to address shortfalls in the existing legislative framework. Likewise, appropriations to support existing P3 enabling authorities, such as those contemplated under §5014 of WRRDA 2014, should be provided.

Federal Credit Programs/Infrastructure Bank

- In the event that a national infrastructure bank is created, Congress should ensure that a special loan facility is available for federally sponsored water resource projects.
- Federal authorities should work with Congress and EPA to expand the application of WIFIA to allow a private partner to access to the credit facility for fully Federal water resource projects.

¹³ 10 U.S.C. 2922a, "Contracts for energy or fuel for military installations" (DoD Authority), allows for contracting for up to 30 years for certain activities (energy production facilities on DoD real property or on private property). This was a key enabling element for renewable energy P3 under a power purchase agreement.

4. Conclusion

While the Federal Government is not the sole purveyor of our Nation's infrastructure, it has played a critical role in the funding and delivery of water resource projects in support of navigation, flood risk management, aquatic ecosystem restoration, hydropower, irrigation, water supply, hydropower, and environmental sustainment. With an estimated replacement value of over a half trillion dollars, this federally sponsored water resource infrastructure has provided and continues to provide substantial economic and social benefits to the Nation, fostering economic growth, bolstering public safety, and generally enhancing our quality of life. But today this infrastructure is at risk.

Inadequate funding and suboptimal delivery structures have impeded efforts to expand and modernize our federally sponsored water resource infrastructure to meet current and future needs, while authorities likewise struggle to address the growing backlog of deferred maintenance on our existing assets. The current “fix-as-fails” approach is unsustainable and costly, with every dollar of deferred maintenance requiring four to five dollars of capital investment in the future. This is not simply a tragic manifestation of the “pay me now or pay me more later” adage, but likewise involves an accelerating deterioration in the quality and reliability of our existing water resource infrastructure.

Moving forward with the modernization and expansion of our water resources is not an option, but a necessity if the United States is to remain a global economic leader and retain its current standard of living. That said, however, the existing funding and delivery framework for federally sponsored water infrastructure is inadequate to meet the needs of the Nation. Persistent funding shortfalls, protracted appropriations, and ineffective delivery structures impede efficiency, defer public benefits, and exponentially increase costs.

While more funding would certainly help to some degree, competing national priorities make a sustained, long-term increase in Federal funding unlikely. Moreover, funding alone is not the solution. Public authorities need new tools to allow them to finance and deliver water resource projects in a timelier and more cost-effective manner, while likewise enabling them to better address life-cycle asset O&M needs. This is the reason why alternative financing and delivery modalities, such as P3, are so important for the Nation's federally sponsored water infrastructure. They will enable our nation to access new sources of capital in order to transfer risk, accelerate delivery, and lock in life-cycle efficiency in the delivery of critical infrastructure.

The unique nature of the Federal water resource sector means that P3 and other forms of alternative finance and delivery need to be enabled for both full Federal and cost-shared projects. This requires addressing a wide range of systemic constraints that impede Federal authorities from leveraging private finance investment. Policies and legislation need to be crafted to broadly enable the use of P3s for Federal water resource infrastructure, including creating an enabling framework for both user-pay and budget-based payment structures. This commands a host of legislative and policy initiatives, including the following:

(i) Enabling User-pay P3 for Federal Projects

- a) **Revenue Generation:** Where required, legislative authorization should be provided to allow for the imposition of user fees on a pilot basis, subject to certain conditions and oversight. Legislation could be modeled on Title 23 exemptions for Federal highways. Where legislation is not required, Federal authorities should develop policy for the assessment, collection and regulation of user and value-additive fees for Federal water resource projects.

- b) **Ring-Fencing and Trust Funds:** Consideration should be given to creating a dedicated P3 pilot revolving fund for water resource projects, which under 31 U.S.C. 1516 would be exempted from normal appropriations rules and made available for project-specific purposes. This fund would also require a limited exemption from the Anti-Deficiency Act, allowing eligible Federal water resource agencies to enter into binding contracts on the basis of future revenues. Additionally, congressional authorization should be sought to allow for the establishment of non-Federal revolving funds to enable the use of alternative finance and delivery approaches for federally owned and operated water resource projects. This could be pursued in a manner consistent with the Direct Funding authority granted by Section 2406 of the Energy Policy Act of 1992 for BPA, allowing Federal authorities to dedicate and commit project-specific revenue. Finally, consideration could be given to legislative reforms to existing Federal water resource trust funds, such as IWTF, HMTF and Reclamation Fund, to dedicate a portion of associated revenues to be used for project finance purposes.
- c) **Viability Gap Funding:** Federal water resource agencies should work with Treasury, USDA, EPA and others to develop a broad-based VGF program for federally sponsored water resource project executed under a P3 structure. Federal aid programs should be coupled with expanded access to Federal credit programs to ensure equitable access to private sector financing.

(ii) Enabling Budget-based P3 for Federal Projects

- a) **Budget Scoring:** In accordance with accounting and other standards, distinguish P3 arrangements from capital leases for federally sponsored water resource and similar civil works and institute a new budget scoring regime for civil works projects based on the risk-reward methodology (as per global standards set forth in ESA95).
- b) **Continuing Contract Authority:** Secure specific multiyear contracting authority (e.g., 62 Comp. Gen. 569 (1983)), to allow Federal agencies involved in Federal water resource P3s to enter into a multiyear contract without requiring obligations of the full contract amount at the time of contract award.
- c) **Budget Prioritization:** Federal water resource agencies should develop a policy framework for budget prioritization of Federal P3 projects, addressing issues not currently considered in traditional BCR calculations, such as Federal return on investment, Value-for-Money, accelerated benefits, and risk transfer.
- d) **Application of Performance-Based Contracting to Water Resources:** The application of Memorandum M-98-13 should be expanded to include improvements in O&M efficiencies for Federal water resources. Alternatively, special legislative authority should be pursued to enable the use of performance-based contracting for water resource projects. In either case, scoring criteria similar to those used by OMB for ESPCs should be applied, thus ensuring that these performance contracts are scored and paid on a recurring annual basis, not upfront, as in a lease purchase or capital lease.

(iii) Policy Framework for Non-Federal P3

- a) **Enabling Legislation and Technical Assistance:** Federal agencies should provide support and technical assistance to non-Federal sponsors of water resource projects who are seeing to develop or explore alternative finance and delivery structures.

- b) **Federal Funding and Prioritization Criteria:** Federal agencies should formalize a policy framework for the budget prioritization of P4 projects. This should also include mechanisms to ensure equitable access by rural and poorer communities to alternative finance and delivery approaches.

(iv) P3/P4 Enabling Framework

- a) **Congressional 302(b) appropriations ceilings for P3:** Additional funding should be made available to support a P3 pilot program. Said funding should not be included in the Budget Committee 302(b) ceilings, but should be additive.
- b) **Legislative Shortfalls:** Shortfalls and omissions in existing legislation should be addressed to more broadly enable P3.
- c) **Federal Credit Programs/Infrastructure Bank:** In the event that a national infrastructure bank is created, a credit window should be made available for federally sponsored water resource projects. Fully Federal water resource projects, such as inland waterways, should also be eligible for credit support. Additionally, WIFIA should be expanded to allow for the financing of fully Federal water resource projects, when executed under a P3 arrangement.

P3 can accelerate the delivery of complex projects by leveraging the resources and expertise of the private sector. Well-structured P3s mitigate taxpayer and public sector construction and operational risk exposure, reduce asset life-cycle costs, and address long-term O&M needs of a public asset, benefiting taxpayers and the Nation by allowing for a most cost-effective and timely delivery of critical infrastructure projects. Innovative finance and delivery structures, such as P3, can be an important tool in the Nation's toolbox. However, to enable these structures, it is first necessary to address the systemic constraints that impede the use of P3s for federally sponsored water infrastructure projects.



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