



January 20, 2015

# **Drinking and Wastewater Infrastructure, Project Aggregation**

AND

# **Design-Build-Finance-Maintain (DBFM) Public-Private Partnerships**

A Report of West Coast Infrastructure Exchange  
Water Infrastructure Workgroup



## INTRODUCTION

The United States faces a looming water infrastructure crisis.<sup>1</sup> According to the American Society of Civil Engineers (ASCE), our drinking and wastewater infrastructure merits a “D” grade, just one step above failing.<sup>2</sup> The U.S. Environmental Protection Agency estimates the cost of the nation’s current drinking and wastewater infrastructure needs at \$335 billion and \$298 billion, respectively.<sup>3</sup> These needs exceed current public sector budgets for water infrastructure. They exist against a backdrop of budget pressures, declining state and federal resources and increasing competition for local jurisdictions’ limited bonding capacity.

These funding challenges are compounded by the decentralization of our nation’s water infrastructure. Responsibility for delivering water infrastructure is fragmented across thousands of drinking and wastewater districts. The state of California alone has approximately 7,500 public drinking water systems and 268 wastewater plants with a discharge capacity of more than 1 million gallons per day.<sup>4</sup> This fragmentation leads to the unnecessary duplication of back office functions such as billing and collections. It reduces the market power any particular district has in securing supplies. It slows the adoption of innovative technology that can meet changing regulatory requirements and lower operating and maintenance costs.

These multiple challenges can potentially be addressed through public-private partnerships in which the public retains ownership of drinking and wastewater assets while the private sector assumes responsibility to design, build, finance and maintain water infrastructure for a specified period of time (DBFM). The DBFM model brings two key innovations to infrastructure procurement:

- 1) DBFM projects are framed in terms of performance requirements rather than requests for the least cost to construct a predetermined set of plans. This framing encourages the private sector to bring its best innovation in design and construction to meet the public owner’s (and ratepayers’) needs.
- 2) Compared to the traditional method of designing, building, financing and maintaining infrastructure, the DBFM model transfers many of the risks of design, construction, financing, and long-term performance from the public owner to its private sector partner. (See Figure 1.) This risk transfer occurs because the private sector partner brings financing that is at risk if it fails to perform at any point during project’s lifecycle. It aligns the public owner’s objective of an on-time, on-budget project that minimizes long-term ownership costs with the private sector partner’s opportunity for gain and risk of loss.

Jurisdictions in Canada and the United States have begun experimenting with the DBFM model to meet their water infrastructure needs, but projects must reach a certain scale, both in terms of capital costs and operating revenues and expenses, before the DBFM approach becomes a viable option.<sup>5</sup> This necessity constrains many drinking and wastewater systems that need new investment and struggle to operate efficiently. Due to their small size, these systems cannot access and leverage private investment individually. They also have difficulty affording the staff needed to effectively manage the increasing complexity of our water infrastructure—e.g. emerging regulation and the need to plan for climate resilience.

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<sup>1</sup> Throughout this report, the term “water infrastructure” is used to encompass to both drinking and wastewater infrastructure.

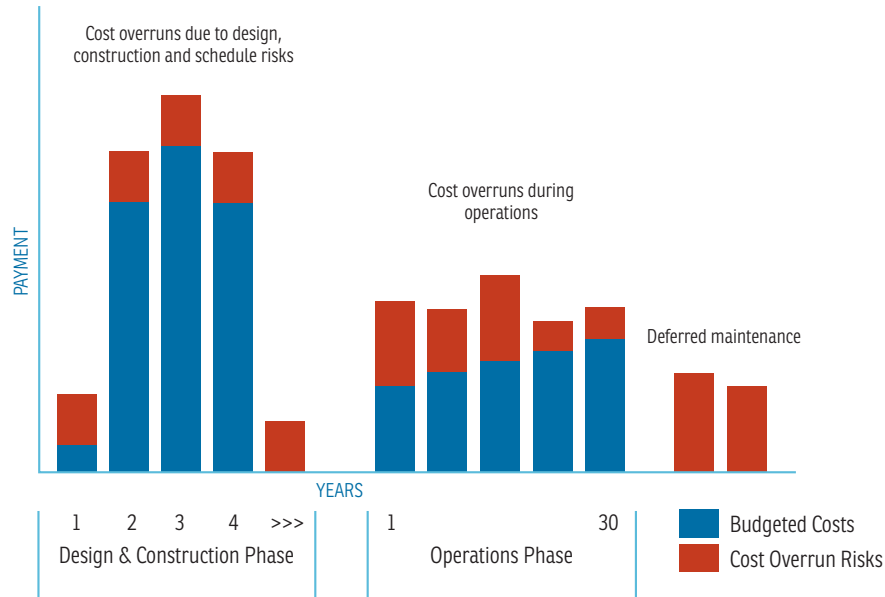
<sup>2</sup> “2013 Report Card for America’s Infrastructure,” The American Society of Civil Engineers, [www.infrastructurereportcard.org/grades](http://www.infrastructurereportcard.org/grades).

<sup>3</sup> “Water Infrastructure: Approaches and Issues for Financing Drinking Water and Wastewater Infrastructure.” General Accounting Office, [www.gao.gov/assets/660/652976.pdf](http://www.gao.gov/assets/660/652976.pdf).

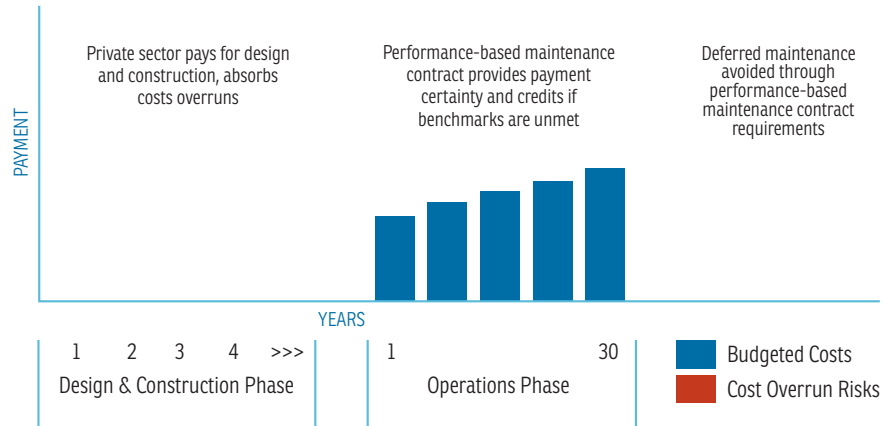
<sup>4</sup> Drinking water information from [http://www.swrcb.ca.gov/drinking\\_water/programs/index.shtml](http://www.swrcb.ca.gov/drinking_water/programs/index.shtml); wastewater information from <http://www.energy.ca.gov/2009publications/CEC-200-2009-014/CEC-200-2009-014-SD.PDF>

### Figure 1

#### Public Sector Payments and Risks Under Traditional Procurement Method



#### Public Sector Payments and Risks With Performance-Based Infrastructure



Against this backdrop, the West Coast Infrastructure Exchange (WCX) made a commitment through the Clinton Global Initiative (CGI) to demonstrate the viability of aggregating small drinking and wastewater projects to reach the economy of scale necessary for the DBFM approach. (The full text of the CGI Commitment is available at [www.clintonfoundation.org/clinton-global-initiative/commitments/west-coast-water-infrastructure-innovation-initiative](http://www.clintonfoundation.org/clinton-global-initiative/commitments/west-coast-water-infrastructure-innovation-initiative).) The United States Environmental Protection Agency (EPA) and the United States Department of Agriculture (USDA) joined WCX in making this commitment. WCX followed through on its CGI commitment by convening a workgroup of public and private sector experts on drinking and wastewater infrastructure to

<sup>5</sup> Unless explicitly stated otherwise, all references to private sector investment, maintenance and/or operations in this report assume the DBFM model.

## **1. Explore the conditions under which it may be possible to aggregate multiple drinking and/or wastewater projects, each of which is too small to attract private sector interest on its own, to reach the scale necessary for the DBFM model.<sup>6</sup>**

DBFM aggregation projects could take two basic forms: a new facility that serves multiple jurisdictions or the combining of multiple existing systems in nearby locations. In either case, to attract private sector interest, an aggregation project must present an easily-combined set of revenues and expenses that can be financed according to a common plan. For the private sector to participate in an aggregation effort, it must be able to structure the transaction to ensure a single set of covenants and debt maturities. It must also be able to ensure that the project meets all necessary collateral and reserve requirements. This “common plan” requirement is most easily met when designing, building, financing and maintaining a single, new facility that serves multiple jurisdictions. With careful planning, multiple existing systems in neighboring jurisdictions can also be designed, rehabilitated, financed and maintained according to a common plan.

## **2. Explore the possibility of blending existing, public water infrastructure financing sources—i.e. loans and grants from the U.S. Department of Agriculture, U.S. Environmental Protection Agency and state governments—with private capital in DBFM projects.**

When compared to DBFM projects that are entirely privately financed, this blending of public and private financing could lower overall costs and facilitate a pipeline of DBFM water infrastructure projects.

### **Participants in the workgroup included:**

**Teveia Barnes**, Executive Director, California Infrastructure & Economic Development Bank

**Brent Diemer**, Water P3 Leader, CH2M Hill

**Bonnie Gitlin**, Chief, Sustainable Management Branch, U.S. Environmental Protection Agency

**Bob Iacullo**, Executive Vice President, United Water

**Peter Luchetti**, Managing Partner, Table Rock Capital LLC

**Matthew McKenna**, Senior Advisor to the Secretary, U.S. Department of Agriculture

**Eric Petersen**, Partner, Hawkins, Delafield & Wood, LLP

**Tristan Robinson**, Associate, Nossaman LLP (provided support for the process)

**Daniel J. Schuller**, Executive Director, J.P. Morgan Asset Management

**Peter Shanaghan**, Senior Environmental Engineer, U.S. Environmental Protection Agency

**Vicki Walker**, State Director, Rural Development – Oregon, U.S. Department of Agriculture

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<sup>6</sup> There are thousands of drinking water systems on the West Coast alone, many of them serving only a few dozen customers. This raises definitional questions about what the terms “multiple” and “small” mean when discussing aggregation opportunities.

The aggregation screening criteria enumerated on the following pages mention the need for political champions, along with the DBFM method’s need to reach a certain scale before it can produce lifecycle cost savings (approximately 10,000 customers). Given these requirements, especially the need for strong political support, this document assumes that no more than five systems would group their drinking and/or wastewater systems to reach the 10,000 customer benchmark and pursue a single, aggregated DBFM procurement. Those systems could vary widely in size so long as, when combined, they produce a base of at 10,000 customers: e.g. five towns with 2,000 customers each or one town with 9,000 customers and four adjoining systems with 250 customers each.

From July through October 2014, the workgroup met three times and WCX staff followed-up with many individual group members for further one-on-one discussions. The workgroup set two goals at the outset:

- 1) Summarize the essential structural elements of a successful aggregation transaction.**
- 2) Develop criteria that will enable preliminary screenings of water infrastructure projects for aggregation in California, Washington, and Oregon.**

In the course of pursuing these goals, group members shared many insights about the United States' drinking and wastewater infrastructure systems. These insights, though not specifically related to the issue of aggregation, have informed WCX's understanding of our water infrastructure and the DBFM opportunities it presents.

This document summarizes the workgroup's findings and identifies areas where WCX should focus its efforts. It is organized into four sections:

- 1) A summary of key considerations in structuring an aggregation transaction.**
- 2) Screening criteria for potential aggregation transactions.**
- 3) A summary of key points about water infrastructure that should inform WCX's work.**
- 4) WCX's conclusions.**

## **Section 1: Key Considerations in Structuring an Aggregation Transaction**

The essential structural element of an aggregation transaction is simple: a single public entity with the legal authority to negotiate and contract on behalf of all participating jurisdictions (a "single counterparty"). The mechanism for creating a single counter-party will vary by state, but will likely be state statutes enabling inter-governmental cooperation (e.g. joint powers authorities).

The group identified two potential challenges to forming a single counterparty. The biggest challenge would be local politics. The creation of a single counter-party would inevitably require the relinquishment of sole control over a jurisdiction's drinking and/or wastewater infrastructure. Many jurisdictions would find this perceived loss of control difficult to accept. The group therefore agreed that aggregation projects would need an actively engaged political champion to overcome this hurdle. A second potential hurdle would be bond covenants on existing assets. Jurisdictions seeking to combine existing assets into a single, merged system may be prohibited by covenants from contributing those assets into a joint-powers authority or similar organization. Thus, newly-built assets ("greenfield projects") may present better aggregation opportunities rather than existing water infrastructure ("brownfield projects").

## **Section 2: Aggregation Screening Criteria**

When screening for aggregation opportunities that could attract private sector participation, the workgroup identified two key topic areas: the aggregated system's local context and its operating profile.

With the sole exception of the first screening criterion—support from locally elected leaders—the factors and figures associated with these criteria are general benchmarks rather than absolute requirements. In terms of attracting private sector participation, each potential aggregation project will be stronger in some areas than others. For example, a proposed project might encompass a slightly smaller population than is ideal but have extremely strong and broad-based political support. Potential private sector partners would ultimately balance these factors against each other to gauge their interest in a project.



## LOCAL CONTEXT SCREENING CRITERIA

### **1) Local champions in political leadership positions.**

A repeated comment during the meetings and follow-up discussions was the need for strong political backing. Strong political backing is essential to fostering the public's understanding of the potential benefits of DBFM aggregation projects—e.g. transfer of construction and operating risk to the private sector and lower overall lifecycle costs. Current state and federal water infrastructure finance program rules do not compel small jurisdictions to aggregate their drinking and/or wastewater infrastructure in order to secure financing, although some states have introduced new incentives to do so. For the foreseeable future, aggregation efforts on the West Coast are therefore going to start from the bottom-up rather than the top-down. Without strong political leadership in communities ripe for water infrastructure aggregation, efforts to combine systems and involve the private sector are unlikely to succeed.

### **2) Support from stakeholders besides elected officials.**

The broader the stakeholder support for aggregation efforts, the more likely they are to overcome the inevitable political challenges. Other key stakeholders who may support well-designed DBFM aggregation efforts are environmental groups and trade unions, assuming the proposed structure addresses their key concerns (e.g. it results in net environmental benefits and job protections for represented employees.) Local business leaders may also support DBFM aggregation efforts because of the long-term rate predictability that stems from the associated 30 - 40 year maintenance contracts. In contrast to current circumstances, where significant rate increases can occur on short notice, the DBFM approach clearly delineates the timing and amount of rate increases over a multi-decade period.

### **3) Common challenges faced by nearby communities.**

Aggregation efforts may be most likely to garner support in jurisdictions facing a cluster of similar needs. Regulatory changes can force multiple nearby towns to respond to the same issue simultaneously—e.g. communities along a river that must comply with new restrictions on phosphorous levels. These regional drivers can potentially align political leadership and other key stakeholder around a common issue. This alignment would help create momentum towards shared water infrastructure efforts.

## OPERATING PROFILE SCREENING CRITERIA

### **4) Proximity.**

Operational efficiencies will be greatest when systems operated by a single entity are within an hour's drive of each other. If the construction of multiple new facilities is involved, the systems would optimally be located within a thirty minute drive to maximize savings during construction.

### **5) Scale.**

Aggregation projects seeking private sector investment should serve a population of at least 50,000 and/or 10,000 customers. Without this scale, a project's capital cost is likely too small to attract private sector investment. The reason is that investors impose minimum investment requirements in their efforts to deploy their capital as efficiently as possible.

Aggregation projects not seeking private sector investment—e.g. a project designed, built, operated and maintained by the private sector but financed entirely by the public sector—need not be as large.<sup>7</sup> For these types of projects, the private sector's interest will depend in large part on the proximity criteria identified above. Private sector water infrastructure operators may be willing to design, build, and operate/maintain systems in areas with combined populations as low as 10,000.

## **6) The affordability of existing water infrastructure rates.**

Making significant investment in water infrastructure will almost always lead to rate increases, regardless of the financing approach, the procurement method or operating arrangements chosen. There are multiple reasons for this link between new investment and increasing rates. First, the availability of grant funding (which can obviate the need for rate increases) is very limited and likely to remain so in the future. Second, many water utilities have not included the cost of replacing key infrastructure assets in their rate structures. Third, even when existing rate structures do generate adequate capital reserves, new regulatory requirements can necessitate major investments that exceed capital reserves and therefore require rate increases.

Aggregation offers the potential to mitigate rate increases by increasing efficiency and lowering overall life cycle costs. However, the fact that aggregation efforts will likely co-occur with rate increases could lead the public to assume a causal link that does not exist. This reality has both socio-economic and political consequences. Projects are most likely to succeed—i.e. least likely to run into political campaigns against rising rates—if existing rates within the aggregated systems are at or below EPA's affordability guidelines and lower than or comparable to those in neighboring jurisdictions. EPA's guidelines suggest that the annual, combined rates from drinking water, wastewater, and combined-sewer overflow controls are ideally 4.5% or less of an area's median household income (MHI).<sup>8</sup>

## **7) Median household income.**

The median household income within an aggregated system would ideally be at or above 75% of the statewide figure. Like the inquiry into existing rates, this benchmark provides a way to gauge whether the population in an aggregated area could afford the rate increases associated with water infrastructure improvements.

## **8) Population trends.**

The population of an aggregated area should be steady or slowly increasing. Population declines raise long-term concerns about whether the rate base could support the cost of water infrastructure improvements. Rapid increases in population also raise concerns about the economic viability of an aggregated area. Rapid growth can indicate an unsustainable development bubble, which raises similar concerns about the rate base and its long-term ability to support the cost of water infrastructure improvements.

## **9) Top 10 customers represent less than 20% of system revenues.**

This criterion helps hedge the risk of economic downturns that could threaten an aggregated system's operating revenues. It ensures that an aggregated system's customers are not so consolidated that it would be endangered by the loss of two or three key businesses.

## **10) Significant deferred maintenance.**

The more significant an aggregated system's deferred maintenance, the larger its rehabilitation costs. Investors like the prospect of a large investment need because it facilitates the efficient deployment of their capital. From both a timing and transaction cost perspective, it is far more efficient to invest \$60 million in a single project than \$20 million in three separate ones.

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<sup>7</sup> One potential funding source for such projects would be the state revolving funds (SRFs) for drinking and wastewater projects. See pages 8 - 9 for additional information.

<sup>8</sup> It should be noted, however, that MHI is a very crude and imperfect measure of affordability, as it masks significant differences in ability to pay among ratepayers of different incomes. The practice of federal and state subsidization of water infrastructure according to jurisdiction-wide income levels is inherently inefficient and not well targeted to households most in need of assistance. Programs that target specific households that lack the ability to pay are likely to be more effective in meeting real needs at a lower aggregate cost, although administering such programs can be challenging for some jurisdictions.

### **11) Material noncompliance with regulatory requirements, requiring significant capital expenses.**

Both political leaders and investors may be attracted by the opportunity to turn around a non-compliant system because the resulting public benefits are tangible and immediately visible to stakeholders and ratepayers. Significant capital expenses can be appealing for the reason described directly above.

## **Section 3: Additional Information and Insights**

During the meetings and follow-up discussions, the workgroup members provided useful insights into the operations and financing of drinking and wastewater infrastructure systems. In some cases, this information has a direct bearing on the prospect of aggregating drinking and wastewater projects. In other cases, though not specifically related to potential aggregation projects, this information affects the drinking and wastewater sectors' DBFM opportunities. The following bullets summarize this helpful information by topic area.

### **The Public Benefits of the DBFM Approach in Drinking and Wastewater Infrastructure.**

The DBFM approach offers multiple benefits to the public: availability of new sources of financing, increased opportunities to implement innovative technology, lower total life-cycle costs, and price certainty (i.e. protection against the risks of construction and maintenance cost overruns). In terms of actual cost savings, workgroup members familiar with DBFM water infrastructure projects offered a range of potential construction and operations/maintenance savings. When compared to typical public procurements (also known as design, bid, build) some group members stated that DBFM cost savings in design and construction are typically 20% and that maintenance savings can range from 10% - 25%.

### **Efficiency and Risk Allocation in Drinking and Wastewater Infrastructure Decisions.**

Water infrastructure management by public agencies focuses on compliance with public health and environmental mandates, not economic efficiency or the optimal allocation of design, construction and maintenance-related risks. Success is measured first and foremost by compliance with regulatory requirements. Thus, the current decision-making framework places little value on the outcomes that well-structured DBFM projects can produce: lower overall life-cycle costs, regular rehabilitation of assets (i.e. ongoing recapitalization and routine maintenance tied to performance requirements in lieu of deferred maintenance) and optimal allocation of design, construction and maintenance risks among the parties best suited to address them.

### **Finding Aggregation Opportunities.**

A key challenge in any aggregation effort is the current mismatch between governmental knowledge and procurement responsibilities. The government agencies with statewide jurisdiction that may have insight into where the best aggregation opportunities exist (state environmental agencies or health departments) do not have responsibility for leading infrastructure procurements. That procurement responsibility lies with individual drinking and wastewater districts. By contrast, the state of Pennsylvania's Department of Transportation recently bundled over 500 bridges needing repair and maintenance into a single Request for Proposals for a public-private partnership to complete the work. In this case, there was no governance challenge, because a single agency knew where the aggregation opportunities lay and had sole responsibility for completing the bridges' repair and maintenance.

### **Government Funding for Drinking and Wastewater Infrastructure.**

There are three primary sources of government funding for drinking and wastewater infrastructure: tax-exempt municipal bonds, U.S. Environmental Protection Agency (EPA) funds administered by State Revolving Funds (SRF), and Rural Development funding from the US Department of Agriculture (USDA - RD). The workgroup focused on the SRF and USDA - RD sources.



SRF and USDA - RD both offer debt with long terms and below market interest rates. SRF loans are typically about half of market rates or 200 basis points below standard municipal debt (currently 1 – 3%). They amortize fully over their term, which can be 20 to 30 years. USDA - RD's money comes at similarly low interest rates, though it can go only to jurisdictions with less than 10,000 people. SRF programs can lend to public entities and to investor-owned utilities; USDA - RD cannot make loans to for-profit entities. Both SRF programs and USDA - RD could potentially lend to a public entity which, in turn, could incorporate this favorable financing into a DBFM procurement that also includes private financing. SRF and USDA - RD funds can also be used for predevelopment activities.

Notwithstanding the clear interest rate advantages these loans programs offer over private financing, they remain unattractive to certain private sector investors. USDA - RD loans are restricted to jurisdictions that are too small to attract private sector interest. (See screening criteria above.) Both loan types require full amortization over their terms, whereas some private sector investors prefer a bullet payment structure (interest only during the term with full repayment of principal at the end) over amortizing debt. EPA and USDA - RD funds also come with cross-cutting federal requirements (e.g. Buy American provisions) which may decrease their attractiveness to the private sector. To the workgroup's knowledge, no water infrastructure project that leveraged private sector investment has also used SRF or USDA - RD dollars.

EPA's newly created WIFIA program, which can provide up to 51% of a project's financing on a 35-year low-interest loan, is a very attractive financing option. If a project can access WIFIA, it will likely be advantageous to do so, owing to its low cost of capital. Although WIFIA precludes the use of tax-exempt debt, the other 49% of the necessary financing could come from a variety of other sources, including private debt and equity. It is unclear at this point if using WIFIA dollars would preclude using SRF funds.

#### **Limitations on Aggregation Efforts and DBFM projects.**

There are thousands of drinking and wastewater providers on the West Coast. Given the screening criteria above, many of these systems are so small, so geographically isolated and/or serve populations with such low incomes that, even if they wished to consolidate, they would not be able to attract private sector financing or operational expertise. These systems present a significant public policy challenge, which may be best addressed by grant programs administered by USDA - RD and SRFs rather than DBFM projects.

#### **DBFM Projects and Tax-Exempt Bonds Issues: Defeasance and Private Activity Bonds.**

Where existing water infrastructure constructed using tax-exempt debt will come under private management for a period of more than 20 years, defeasance of that existing debt must occur.<sup>9</sup>

Defeasance can be a significant impediment to utilizing the DBFM model to rehabilitate existing infrastructure because it drives up costs. When a jurisdiction defeases a bond, in addition to paying off the outstanding principle, it has to maintain the stream of expected interest payments. To comply with this latter requirement, it has to buy Treasuries that generate interest payments equal to those that would have been paid out under the original bond indenture. At today's low interest rates, this requirement mandates the up-front investment of significant capital in low-yield Treasuries to achieve the required stream of payments, placing significant financial stress on potential DBFM water infrastructure projects. The challenges presented by defeasance could be eliminated by simple clarifications from IRS about how it interprets the phrase "alternative use of disposition proceeds" in Section 1.141-12 of the Treasury Regulations.<sup>10</sup>

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<sup>9</sup> There are with limited exceptions to the defeasance requirement for "qualified management contracts" which limit the share of compensation to the private operator that can be based on performance to 20%.

<sup>10</sup> See <http://bondcasebriefs.com/2014/07/29/tax/water-companies-request-guidance-public-private-partnerships> for further information.

Another challenge imposed by tax-exempt bond rules pertains to private activity bonds. For water infrastructure projects in which a private company is responsible for securing the project's financing, private activity bonds are a mechanism by which that company can access a more favorable interest rate through tax-exempt financing terms. Projects seeking tax-exempt financing as private activity bonds are subject to state bond volume caps. Unlike other project types that benefit the public (e.g. affordable housing), there is no volume-cap set-aside for water infrastructure projects. This lack of a set-aside can create significant financing uncertainty.

#### **Standardization of Public-Private Partnership Business Terms.**

Standardization of business terms for smaller projects, (i.e. below \$100 million) would help create more of a public-private water infrastructure pipeline. The reason is that, for a project of this size, a standard template would contain transaction costs that might otherwise outweigh life-cycle cost savings. Above \$100 million, the flexibility that comes from customizable terms is likely worth the time and cost of developing them on a project-by-project basis.

### **Section 4: Conclusions and Recommendations**

These conclusions reflect WCX's synthesis of the points made during the three group meetings and one-on-one conversations. They are not the official position of any workgroup participant or his/her organization.

When WCX convened this workgroup, it had a two-part working hypothesis. First, WCX assumed that the West Coast offers multiple opportunities for aggregating small drinking and wastewater projects. Second, WCX assumed that the DBFM model could help address aggregated systems' short and long-term capital needs. Under this hypothesis, with assistance from the workgroup on structural characteristics and screening criteria, WCX would be able to identify systems ripe for aggregation and help catalyze DBFM projects that would address their capital and operating needs.

Conversations with the workgroup and state regulators have confirmed both parts of WCX's working hypothesis. The Screening Criteria developed by the workgroup enable many aggregation possibilities that could utilize the DBFM model, and the private sector is interested in applying the DBFM approach to aggregation projects. As with individual jurisdictions, an aggregated series of drinking and/or wastewater projects can employ the DBFM model to address capital and operational needs in a cost-effective manner. This ability to achieve efficiencies through aggregation makes its prospect especially appealing to state regulatory agencies in all three states.

The workgroup did identify two hurdles that currently impede efforts to aggregate water infrastructure projects and employ the DBFM model. The first hurdle is political. Existing drinking and wastewater rates frequently fail to provide the funds necessary for systems' proper upkeep. New investment in drinking and wastewater systems, regardless of whether financed publicly or privately and whether completed individually or through aggregation efforts, is therefore going to necessitate rate increases. It is difficult to get individual jurisdictions to undertake the rate increases necessary to maintain their existing systems. Relying on multiple jurisdictions to simultaneously agree to rate increases is likely to be especially difficult.

The second hurdle is the novelty of the DBFM approach. Within the U.S. and Canada, very few drinking and wastewater districts have experimented with DBFM projects. The results of these DBFM projects have been encouraging—e.g. assets remain in public ownership; technological innovation is introduced; life-cycle cost benefits are achieved; deferred maintenance is eliminated; operational costs are reduced; and construction, financing, and maintenance risks are shifted from the public to the private sector. However, lacking a long history of proven success, DBFM projects in water infrastructure are frequently misunderstood and viewed with suspicion by elected officials. This misunderstanding and suspicion compounds the political challenges mentioned above.

Given these hurdles, WCX will seek to foster a West Coast pipeline of individual DBFM water infrastructure projects simultaneous with its aggregation efforts. This report's Screening Criteria, while technically developed for drinking and wastewater aggregation projects, are also relevant for individual jurisdictions and projects. WCX therefore intends to use this report's Screening Criteria to identify both individual and aggregation DBFM opportunities. It will then assist interested jurisdictions within the WCX member states with the training and technical assistance necessary to facilitate successful DBFM transactions. These successes will generate further interest from other jurisdictions with drinking and wastewater needs, either as individual projects or as aggregation efforts.

WCX will also continue to advocate with both the public and private sector for a DBFM approach that blends private financing with public SRF funds. Though such blending has not yet occurred and faces some obstacles, the workgroup discussions produced no structural reasons why SRF funds could not be used in an individual or aggregated project. SRFs are significant financing tools which the public sector can utilize to encourage the policy outcomes it wants. For example, aggregation projects utilizing the DBFM approach could receive grant funds from SRF programs and/or other financing terms not available to individual projects. For both individual and aggregation projects, this blending of public and private financing would significantly lower the DBFM approach's financing costs. This reduction in financing costs would, in turn, foster of a pipeline of water infrastructure projects that capitalize on the DFBM model's benefits and begin to address the West Coast's water infrastructure needs.