Recommendations for EPA's Water Infrastructure and Resiliency Finance Center
WateReuse – March 2015

INTRODUCTION

On January 16, 2015, the formation of a Water Infrastructure and Resiliency Finance Center (Center) was announced to assist communities in improving their water infrastructure while becoming more resilient to the impacts of climate change. Based on the most recent Clean Water and Drinking Water Needs Surveys, nearly $300 billion in wastewater and stormwater management needs have been identified while more than $380 billion in drinking water infrastructure needs have been identified. With limited federal funding available, states and communities are beginning to look towards private investment, more innovative financing tools, and new technologies to help bridge this gap. This new Finance Center from EPA has the potential to assist states and communities in this goal by providing information and analysis on financing options and tools, examples of best practices used throughout the country and worldwide, and technical assistance in building more resilient water systems and communities. What follows are recommendations from WateReuse on how the Center can assist communities and utilities in utilizing existing federal resources, while tapping into private capital to finance vital infrastructure improvements that are both financially and environmentally resilient to unforeseen future events and climate change.

CONNECTING EXISTING FUNDING SOURCES

Along with the State Revolving Fund programs at EPA, there are other sizable sources of funding from USDA's Rural Development Program, HUD's Community Development Block Grants, and the Bureau of Reclamation in addition to the many other small programs that can be found through the Catalog of Federal Domestic Assistance. **The Center should** help connect communities to the various existing sources of federal funding for water infrastructure. Additionally, navigating the process of determining the various eligibilities and requirements for each program can be daunting for small communities. Therefore, **the Center should** also work with these federal assistance programs to develop common applications where possible, coordinate regulatory requirements where possible, and co-fund projects. Increased cooperation among federal programs can make it easier for communities to find the most appropriate resources to meet their specific needs while decreasing the bureaucratic hurdles they must overcome.

PUBLIC-PRIVATE PARTNERSHIPS

The goal of any water infrastructure project is to provide a benefit for the public, regardless of how the project is financed. Using public-private partnerships to attract private investment in a public infrastructure project is an effective method for providing such a public service. However, public-private partnerships in the water sector have been limited, partly due to a number of regulatory and permitting barriers. **The Center should** seek to resolve such barriers where possible and provide updated and streamlined guidance to make the process of private leases or even the transfer of ownership simpler and more transparent. **The Center should** reinforce this by working with interested communities in evaluating all of their options in regards to public-private partnerships to determine the best option to pursue. Additionally, there is often a scenario where private investors are reluctant to invest in infrastructure due to a lack of potential projects while communities are reluctant to pursue private investment due to a perceived lack of interest. **The Center should** seek to resolve this dilemma by working with communities searching for private capital to develop a pipeline of potential projects that can attract private investment. This can help provide private investors the level certainty that they need to enter into the market.

Private Investment Opportunities in Water Reuse

The practice of water reuse has been rapidly advancing through the production of water of varying qualities for a variety of public and private purposes. These purposes can include agricultural and landscape irrigation, industrial cooling, energy production, and other related uses. The West Basin Municipal Water District in California, for example, currently operates an advanced water reuse facility that produces five different qualities of "designer" water that can be tailored to the specific needs of their municipal, commercial, and industrial customers. Facilities such as this result in clear public and private benefits by providing enhanced wastewater treatment, decreasing the demand for potable water, and supporting industry and economic development. The future development of such facilities and the expansion of existing facilities could greatly benefit from the involvement of private sector financing as there is a clear need from many industries for a reliable supply of water at varying degrees of quality.

INNOVATIVE FINANCING PROGRAMS

Aside from activities at the federal level, many states and communities are currently engaging in innovative practices to finance infrastructure improvements**.** Some of these activities can be creative ways of financing vital infrastructure projects at minimal cost to the public by leveraging existing resources. Additionally, new incentives can be designed to encourage private investment in infrastructure that results in a benefit to both the public and private property owners. **The Center should** identify best practices and examples of innovative financing programs that have been used throughout the country as well as overseas. The following examples are just two of many creative methods that communities and states are using to encourage public and private investment in water infrastructure. There are also many other examples of innovative financing practices associated with the state Clean Water and Drinking Water State Revolving Fund programs.

Stormwater Retention Credits

Pollution credits have long been used to meet air pollution regulatory requirements and in recent years have been used to reduce water pollution. The District Department of the Environment (DDOE) in Washington DC has a Stormwater Retention Credit Trading Program awarding credits to properties that install green infrastructure improvements to retain or reuse stormwater. These credits can be traded to other property owners to meet their regulatory requirements. DDOE can purchase credits to increase demand in the market and accelerate the adoption of green infrastructure. Such credit trading programs can assist communities in developing infrastructure to meet regulatory requirements at the lowest cost possible.

PACE Financing

PACE (Property Assisted Clean Energy)—while primarily used to finance energy efficiency improvements—can be used to finance water efficiency or on-site reuse improvements on a property level scale. In PACE, upfront costs are provided for improvements through long-term loans and are paid back with an assessment on the property's tax bill. Extended loan terms allow the loan to be repaid based on the water savings that the efficiency or reuse upgrades provide. Also, because the loan is repaid through the property tax, loans are automatically transferred upon the sale of the property. Financing mechanisms such as PACE are a creative way of encouraging private investment in infrastructure and the Center can play an important role in encouraging their adoption.

REVENUE GENERATION AND CAPACITY DEVELOPMENT

With communities and utilities increasingly under strain from increased costs and infrastructure deficits, it is clear that the traditional system of financing utility operations through volume-based user fees is insufficient to provide a robust and reliable revenue stream. Additionally, systems in which fees are charged by the volume of water consumption can be difficult to reconcile with water conservation and on-site water reuse efforts aimed at reducing demand. This is especially acute in California with the recent drought requiring strict conservation measures along with large investments in new water supply and reuse projects. **The Center should** work with interested communities looking to develop alternative revenue sources and user fees to supplement existing revenue ensuring that future financial needs are met while maintaining and strengthening goals for water conservation and reuse. These efforts should also be balanced with the acknowledgement that some economically distressed communities and other small communities may not have the ability to raise new revenues or the existing financial or operational capacity to effectively operate their water systems. **The Center should** be prepared to work with these communities, if requested, to develop the internal capacity necessary to operate their systems using their available resources while maintaining reliable service.

INNOVATIVE TECHNOLOGIES AND ENSURING RESILIENCY TO EXTREME WEATHER EVENTS AND CLIMATE CHANGE

Alternative and innovative technologies that may be more efficient or cost effective than traditional technologies are an excellent way for communities to meet their water quality needs while remaining fiscally sustainable. As was outlined in EPA's Clean Water and Drinking Water Sustainability Policy in 2012, EPA has encouraged communities to undergo a robust planning process to properly identify and evaluate all potential infrastructure options before making a decision on which option to pursue. Any decision process should evaluate potential infrastructure projects though a triple bottom line framework looking at the full economic, environmental, and social costs and benefits. However, many communities, especially small communities, may not have the technical expertise to properly evaluate different infrastructure options. **The Center should** fill in some of these expertise gaps by providing case studies and technical assistance in evaluating such options. **The Center should** also encourage the funding of planning and pre-development activities through existing programs to ensure that limited financial resources are spent on only the most beneficial projects. Proper planning and pre-development for infrastructure can also assist in the development of a project pipeline to then be funded through available programs or with private investment.

Water scarcity and environmental degradation have resulted in communities and utilities placing a priority on ensuring that their infrastructure will be resilient in the face of extreme events and climate change. Water reuse, and increasingly potable water reuse, has been gaining interest in many water stressed regions as a more drought resistant water source compared to other traditional sources. Water reuse can also be incorporated into stormwater management activities in cities and communities that must cope with combined sewer overflows resulting from strong storms or a rising sea level. **The Center should** encourage and assist communities in this effort to help ensure that new and existing infrastructure is resilient to such unforeseen events as droughts, floods, and rising sea levels. This can be accomplished through the use of alternative analyses for different project options using a comprehensive triple bottom line perspective as well as case studies demonstrating the importance of resiliency planning and infrastructure improvements.

Economic Analysis of Potable Water Reuse

In October 2014, the WateReuse Research Foundation released the report *The Economics and Opportunities of Direct Potable Reuse*[*] (WRRF-14-08) that compares the cost of direct potable reuse (DPR) to other more traditional sources of drinking water. The results of this report show that DPR is less costly than desalination and, depending on the location, can be less costly than imported water and other alternative sources. Additionally, with a focus on California this study also demonstrates that there is a significant amount of wastewater that is currently being discharged and lost that instead can be recovered and utilized for potable use. Current research from the Foundation is now looking at DPR and other drinking water sources from a complete triple bottom line perspective incorporating environmental and social costs and benefits in addition to the strictly financial cost of an infrastructure project. DPR is an example of an innovative technology application that is gaining in interest, partly out of necessity but also due to an increased understanding of the economic and sustainability benefits it can provide.

LEVERAGING OUTSIDE RESOURCES

The announcement for the Center makes it clear that there will be direct involvement from the Environmental Finance Advisory Board and the university-based Environmental Finance Centers (EFC). These are excellent resources that the Center will benefit from, especially with the regional structure of the EFCs. However, there are many other regional organizations and trade organizations that have both regional and technological focuses that can be of great assistance to the Center. **The Center should** seek to collaborate with such organizations that are outside of the purview of the federal government to bring fresh perspective with their experience in the water sector. This will allow for enhanced collaboration and transfer of experience and information to further leverage the resources and capacity of the Center. Such collaboration can be especially effective when trying to reach small and rural communities that may have established relationships with these organizations.

ABOUT WATEREUSE

The WateReuse Association is a nonprofit coalition of utilities, government agencies, and industry that advocates for laws, policies, and funding to promote water reuse. The WateReuse Research Foundation is a nonprofit charitable organization that conducts research to improve the treatment, distribution, and acceptance of water reuse. Known collectively as WateReuse, the two organizations are international thought-leaders on alternative water supply development and the global go-to source for applied research, education, and advocacy on water reuse. To learn more, visit www.watereuse.org.

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[*] This document is available at http://www.watereuse.org/product/14-08-1