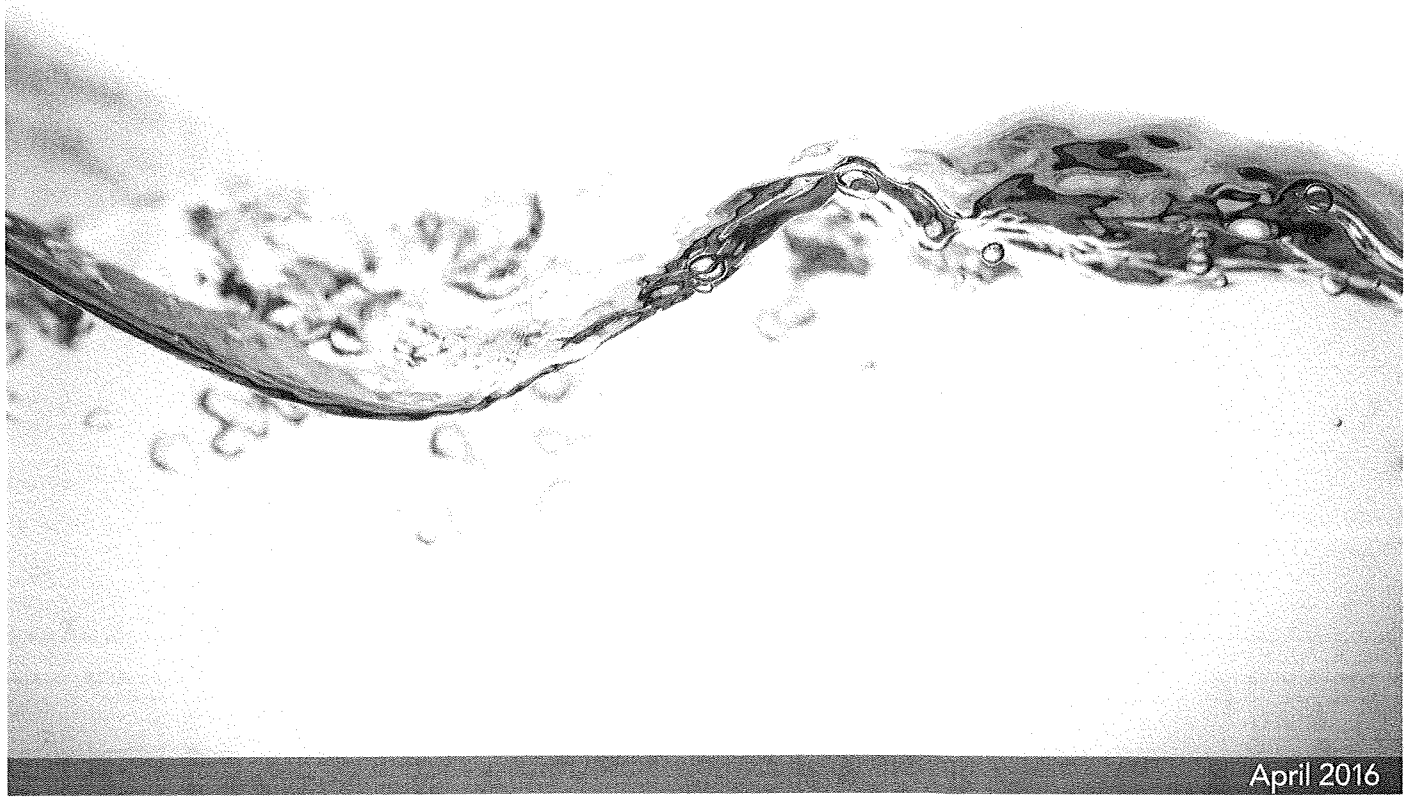
Water Environment Federation
the water quality people

WATEREUSE

The Economic, Job Creation, and Federal Tax Revenue Benefits of Increased Funding for the State Revolving Fund Programs



April 2016

Executive Summary

The Clean Water and Drinking Water State Revolving Fund programs are considered to be among the most successful infrastructure funding programs administered by the federal government and implemented by States. They have provided billions of dollars in low-interest loans for thousands of projects. This investment has improved public health and the environment and currently supports part of the needed continuing efforts by communities all across the United States to provide safe drinking water and wastewater treatment to millions of Americans. However, substantially higher investments are needed if we are to maintain and increase our infrastructure's ability to keep up with the demands of our population and economic development.

The Water Environment Federation (WEF) and WateReuse Association recently conducted an analysis to estimate the economic impact of proposed increased SRF appropriation levels, including taxes that return to the federal government, and employment and economic output that the spending generates. This study shows that for every federal dollar of federal SRF spending, 21.4% is returned to the federal government in the form of taxes. The study also shows that federal SRF allocations account for approximately 23% of total SRF spending, which also includes state matching funds and funds from state program loan repayments. Thus, the proposed $34.7 billion federal allocation will leverage an additional $116.2 billion in state spending ($151 billion total). Therefore, together, the proposed federal allocations and state SRF program funds will result in $32.3 billion in federal tax revenue. Thus, when leveraged state program funds are taken into account, every dollar of federal SRF spending results in $0.93 in federal tax revenue. The study also shows increased employment and labor income as well as increases in total economic output. This report summarizes the study findings and output of the economic model.

The Economic, Job Creation, and Federal Tax Revenue Benefits of Increased Funding for the State Revolving Fund Programs

The Water Environment Federation (WEF) and WateReuse Association recently conducted an analysis to estimate the economic impact of proposed increased federal Drinking Water (DW) and Clean Water (CW) State Revolving Fund (SRF) appropriation levels, including taxes that return to the federal government, and employment and economic output that the spending generates. The increased funding levels modeled in this analysis are intended to reflect proposals in Congress to increase the SRF appropriations levels for fiscal years (FYs) 2017 through 2021. The chart below reflects recent fiscal year appropriations and proposed increased amounts.

FY	CWSRF*	DWSRF*
2010	$2,100	$1,387
2011	$1,522	$963.1
2012	$1,466	$917.9
2013	$1,376.1	$861.3
2014	$1,448.9	$906.9
2015	$1,448.9	$906.9
2016	$1,394	$863
2017	*$3,200*	*$1,500*
2018	*$3,200*	*$2,000*
2019	*$3,600*	*$2,000*
2020	*$4,000*	*$3,200*
2021	*$6,000*	*$6,000*

*in millions

State Revolving Fund Programs

The CW and DW SRF programs are considered to be among the most successful infrastructure funding programs administered by the federal government. Since their creation, the programs have provided more than $135 billion in low-interest loans for over 47,000 projects at a cost of approximately $55 billion to the federal government. As a direct result of these investments in drinking water and wastewater infrastructure, the public health of communities and the quality of the environment have improved significantly. 85% of Americans get their drinking water from public water systems. Over 73% of Americans are on publicly owned wastewater treatment systems that return clean water back into the environment.

Nonetheless, the nation's drinking water, wastewater, and stormwater infrastructure needs to remain in compliance with regulatory standards exceed the funding levels being currently provided by the SRF programs and other infrastructure funding sources. The recent "U.S. Environmental Protection Agency Clean Water Needs Survey" estimated that the nation will need $271 billion over the next 20 years for wastewater and stormwater infrastructure, but the report states that the data underestimates stormwater infrastructure needs by roughly $100 billion. EPA's recent "Drinking Water Needs Survey" estimated that the nation will need $384 billion over the next 20 years. Combined, the two surveys call for $655 billion over the next 20 years, which equals $32.75 billion per year, for communities to remain in compliance with the Clean Water Act and Safe Drinking Water Act.

As a result, communities across the nation and the organizations that represent them in Washington, DC, are calling on Congress to significantly increase the funding amounts for the SRF programs in order to help protect public health, the environment, and the nation's economic growth. To help Congress better understand the potential impacts of increasing the appropriations levels for the SRF programs, WEF and WateReuse Association conducted an analysis of how SRF spending ripples through the economy and effects the federal treasury.

Results

SRF spending generates federal tax revenues:

- The total proposed federal allocations for 2017 through 2021 amount to $34.7 billion (2016 USD), including $14.7 billion for the DWSRF and $20.0 billion for the CW SRF. This generates $7.43 billion of federal tax revenues. **Thus, for every federal dollar of federal SRF spending, 21.4% is returned to the federal government in the form of taxes.**
- Federal SRF allocations account for approximately 23% of total SRF spending, which also includes state matching funds and funds from state program loan repayments. **Thus, the proposed $34.7 billion federal allocation will leverage an additional $116.2 billion in state spending ($151 billion total).**
- Together, the proposed federal allocations and state SRF program funds will result in $32.3 billion in federal tax revenue. **Thus, when leveraged state program funds are taken into account, every dollar of federal SRF spending results in $0.93 in federal tax revenue.**[1]

SRF spending results in increased employment and labor income:

- On average, 16.5 jobs are generated for every million dollars in SRF spending. **The proposed $34.7 billion federal allocation will result in 506,000 jobs.**
- SRF spending generates high-paying jobs – each job is estimated to bring about $60,000 in labor income.

SRF spending generates output in the U.S. economy:

- Every million dollars of SRF spending results in $2.95 million in output for the U.S. economy. **Thus, the proposed $34.7 billion federal allocation will generate $102.7 billion in total economic output.**

Methodology

The analysis used the IMPLAN economic model to estimate the impact of SRF spending on output, labor income, jobs, and federal tax revenues. The IMPLAN economic model was originally developed by the U.S. Forest Service in 1972. It is used by thousands of federal, state, and local government agencies to help make informed decisions and assess the potential impacts of policy and tax decisions on the economy.

IMPLAN captures the effect of spending as it ripples through the economy. For example, utility spending of SRF funds results in direct spending on construction contractors (direct effect). The construction contractors then spend this money on goods and services that they need to operate their businesses (indirect effect). Direct and indirect spending generate employment, creating additional income for households that generates even more spending (the induced effect). The total economic impact is the sum of direct, indirect, and induced effects. This generates federal, state, and local tax revenues.

To model federal SRF spending in IMPLAN, the analysis assumed that the proposed SRF allocations for 2017 through 2021 would be spent over a 10-year period, from 2017 to 2026. The analysis estimated the percentage of spending that will occur each year based on the relationship of allocation and spending developed by the Congressional Budget Office for the 2009 Water Infrastructure Financing Act. The federal funding levels modeled were derived from amounts being considered by the U.S. Senate Environment and Public Works Committee in April 2016 as the Committee was developing a bi-partisan provision for the Water Resources Development Act of 2016 to reauthorize and increase the funding levels for the CW and DW SRF programs.

The analysis allocated annual SRF spending across different project types based on the level of need estimated for each needs category in the 2011 DW and CW needs survey. The analysis then mapped the spending associated with the different needs categories into IMPLAN sectors. For example, for each needs category, a percentage of spending was allocated to IMPLAN sectors such as construction, heavy equipment, engineering and design services, and local government/water utilities.

Other proposals have been introduced in Congress to increase the CW and DW SRF programs by larger amounts than those considered in this study. The results from this analysis can be scaled up (or down) to other proposed funding levels because the ratios of spending to job creation, tax revenues, and economic output are the same with larger (or smaller) proposed funding levels.[2]

1 This view compares the same amount of taxes generated from SRF spending but compares it only to the federal portion of the total spending. This leveraging assumes that the state program would not exist without the federal SRF grants and therefore can be counted as a result of the federal funding.

2 IMPLAN does not assume limits to the availability of capital and labor in the economy. Such limits would lessen the overall output and tax impact. However, the results are generally scalable for the levels of spending considered in this analysis.

Economic impacts of proposed federal SRF allocations

Tables 1 through 3 present the economic impacts associated with the proposed federal SRF allocations, as follows:

- Table 1 presents the employment, labor income, value added, and output generated by direct SRF spending
- Table 2 shows the federal tax revenues associated with this additional economic activity.
- Table 3 shows the federal tax revenues generated in each year that SRF spending occurs, including taxes generated by federal spending, as well as the taxes generated by leveraged state funds.

Table 1. Economic impacts of proposed federal SRF allocations, 2016 USD[a]

This table shows the IMPLAN model summary output. Results are in 2016 USD (i.e., not adjusted for inflation). They can be compared to a total spending of $30.67 billion in 2016 USD values.

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	192,881	12,500,589,181	14,549,393,251	30,665,164,969
Indirect Effect	130,427	8,382,231,696	13,427,012,681	29,513,529,280
Induced Effect	182,241	9,430,294,277	16,548,253,569	30,369,921,220
Total Effect	505,549	30,313,115,154	44,524,659,501	90,548,615,469

a. Economic impacts are relative to $30.67 billion in spending in 2016 USD

Table 2. Federal tax revenues generated by federal SRF spending, Millions, 2016 USD

This table presents the direct tax revenues associated with SRF spending. It shows that the $30.67 billion (2016 USD) in federal allocations would generate $6.55 billion in federal tax revenues. Thus, every dollar of federal spending results in $0.21 returned in federal taxes.

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Corporate Profits Tax					$833,250,299
Personal Tax: Income Tax				$2,351,139,140	
Social Ins Tax- Employee Contribution	$1,446,015,898	$216,313,818			
Social Ins Tax- Employer Contribution	$1,423,912,866				
Tax on Production and Imports: Custom Duty			$71,454,817		
Tax on Production and Imports: Excise Taxes			$192,525,724		
Tax on Production and Imports: Fed Non-Taxes			$20,306,195		
Total Federal Tax, by category	$2,869,928,764	$216,313,818	$284,286,737	$2,351,139,140	$833,250,299
Total Federal Tax					$ 6,554,918,758

Table 3. Federal tax revenues generated by federal SRF allocations and state-leveraged funding, adjusted to account for inflation (nominal USD)

This table presents federal tax revenues generated by both federal and state SRF spending. Results are shown in nominal dollars, meaning they are re-inflated to represent actual results in a given year. The third column shows that the $34.7 billion (nominal) that the federal government has allocated to SRF will generate federal tax revenues from federal and state spending of approximately $32.3 billion. Thus, for every dollar that the federal government spends, they receive $0.93 back in federal tax revenues. This assumes that the state SRF funds would not otherwise be spent in the U.S. economy.

Year	Federal tax revenues generated by federal spending	Federal tax revenues generated by federal spending and state leveraged funds -
2017	$90,883,055	$395,143,719
2018	$340,322,764	$1,479,664,191
2019	$668,219,111	$2,905,300,483
2020	$948,018,834	$4,121,821,017
2021	$1,232,630,570	$5,359,263,348
2022	$1,470,389,711	$6,392,998,744
2023	$1,297,800,622	$5,642,611,399
2024	$803,522,855	$3,493,577,629
2025	$389,077,167	$1,691,639,858
2026	$190,874,408	$829,888,728
Total tax impact	**$7,431,739,097**	**$32,311,909,117**

Economic impacts per 1 million dollars of SRF spending

Tables 4 through 6 present the economic impacts associated with $1 million of SRF spending, as follows:

- Table 4 presents the employment, labor income, value added, and output generated per $1 million in direct SRF spending
- Table 5 shows the federal tax revenues associated with this additional economic activity.
- Table 6 shows the federal tax revenues generated in each year that SRF spending occurs, including taxes generated by federal spending, as well as the taxes generated by leveraged state funds.

Table 4. Economic impacts per $1 million of SRF spending, 2016 USD[a]

This table shows model results per $1 million of SRF spending. There are not inflation effects in these results because we have normalized the results to reflect impact per $1 million

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	6.3	$ 407,648	$ 474,460	$ 1,000,000
Indirect Effect	4.3	$ 273,347	$ 437,859	$ 962,445
Induced Effect	5.9	$ 307,525	$ 539,643	$ 990,372
Total Effect	16.5	$ 988,520	$ 1,451,962	$2,952,817

Table 5. Federal tax revenues generated by $1 million of SRF spending, 2016 USD

This table presents the direct tax revenues associated with $1 million in SRF spending. It shows that every million dollars in federal or state SRF spending generates $213,758 in direct federal tax revenues.

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Corporate Profits Tax					$27,173
Personal Tax: Income Tax				$ 76,671	
Social Ins Tax- Employee Contribution	$ 47,155	$ 7,054			
Social Ins Tax- Employer Contribution	$46,434				
Tax on Production and Imports: Custom Duty			$ 2,330		
Tax on Production and Imports: Excise Taxes			$ 6,278		
Tax on Production and Imports: Fed Non-Taxes			$ 662		
Total Federal Tax, by category	$ 93,589	$ 7,054	$ 9,271	$76,671	$27,173
Total Federal Tax					$ 213,758

Table 6. Federal tax revenues generated by $1 million in federal SRF spending and corresponding state-leveraged funds

Federal SRF allocations account for 23% of total SRF spending, while state matching funds and funds from state program loan repayments account for 77%. Thus, the proposed $34.7 billion federal allocation will leverage an additional $116.2 billion in state spending ($151 billion total). Together, the proposed federal allocations and state SRF program funds will result in $32.3 billion in Federal tax revenue. Thus, as shown below, when leveraged state program funds are taken into account, every million dollars of federal SRF spending returns $929,382 in tax revenue to the federal government.

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Corporate Profits Tax					$118,141
Personal Tax: Income Tax				$333,354	
Social Ins Tax- Employee Contribution	$205,022	$30,670			
Social Ins Tax- Employer Contribution	$201,888				
Tax on Production and Imports: Custom Duty			$ 10,131		
Tax on Production and Imports: Excise Taxes			$ 27,297		
Tax on Production and Imports: Fed Non-Taxes			$ 2,879		
Total Federal Tax, by category	$ 406,910	$ 30,670	$ 40,307	$ 333,354	$ 118,141
Total Federal Tax					$ 929,382

For more information, please contact Steve Dye at **sdye@wef.org**, or at (202) 246-1070, Ian Wolf at **iwolf@watereuse.org**, or at (571) 445-5504, or Claudio Ternieden at **cternieden@wef.org**, or at (703) 684-2416.

Prepared in participation with:

The Water Environment Federation (WEF) is a not-for-profit technical and educational organization of 33,000 individual members and 75 affiliated Member Associations representing water quality professional around the world. Since 1928 WEF and its members have protected public health and the environment. As a global water sector leader, WEF's mission is to connect water professionals; enrich the expertise of water professionals; increase the awareness of the impact and value of water; and provide a platform for water sector innovation.

The WateReuse Association is a not-for-profit organization that educates the public on the importance of water reuse and advocates for policy, laws and funding to increase alternative water supply development in communities across the United States. Our membership of water utilities, businesses, government agencies and not-for-profit organizations is dedicated to recycling water to ensure communities have a safe, reliable and cost-effective supply of water, which is necessary to sustain a high standard of living and robust economy.