CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE

Revised June 27, 2016

S. 2848
Water Resources Development Act of 2016

As ordered reported by the Senate Committee on Environment and Public Works on April 28, 2016

SUMMARY

S. 2848 would authorize the U.S. Army Corps of Engineers (Corps) to construct projects to mitigate storm and hurricane damage, to improve navigation and flood management, and to assist state and local governments with safety programs for dams and levees. The bill also would authorize the Environmental Protection Agency (EPA) to provide grants and loans to state and local governments, public water systems, and nonprofit organizations to support a wide range of water quality projects and programs.

CBO estimates, that implementing this legislation would cost about $4.8 billion over the next five years and $10.6 billion over the 2017-2026 period, assuming appropriation of the authorized and necessary amounts.

In addition, CBO estimates that enacting the bill would reduce direct spending by $59 million over the 2017-2026 period and the staff of the Joint Committee on Taxation (JCT) estimates that enacting the bill would reduce revenues by $53 million over that same period. Because enacting S. 2848 would affect direct spending and revenues, pay-as-you-go procedures apply. CBO estimates that enacting the bill would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2027.

S. 2848 would impose intergovernmental and private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA). Because the number of affected entities and the cost of compliance would probably be small, CBO expects that the costs of the mandates would fall below the annual thresholds established in UMRA for intergovernmental and private-sector mandates ($77 million and $154 million in 2016, respectively, adjusted annually for inflation).

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary effects of S. 2848 are shown in Table 1. The costs of this legislation fall within budget function 300 (natural resources and environment).

TABLE 1. ESTIMATED BUDGETARY EFFECTS OF S. 2848, THE WATER RESOURCES DEVELOPMENT ACT OF 2016

	By Fiscal Year, in Millions of Dollars												
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2016-2021	2016-2026
INCREASES IN SPENDING SUBJECT TO APPROPRIATION													
Estimated Authorization Level	0	1,262	1,405	1,591	1,724	1,901	635	707	767	734	775	7,883	11,501
Estimated Outlays	0	395	591	942	1,245	1,666	1,574	1,308	1,132	896	869	4,838	10,618
INCREASES OR DECREASES (-) IN DIRECT SPENDING													
Estimated Budget Authority	-31	269	*	*	*	*	*	*	*	*	*	238	238
Estimated Outlays	-31	44	90	69	21	-42	-42	-42	-42	-42	-42	152	-59
DECREASES IN REVENUES													
Estimated Revenues	0	-1	-1	-2	-3	-4	-6	-7	-8	-10	-11	-11	-53
NET INCREASE OR DECREASE (-) IN DEFICITS FROM CHANGES IN DIRECT SPENDING AND REVENUES													
Estimated Effect on the Deficit	-31	45	91	71	24	-38	-36	-35	-34	-32	-31	163	-6

Note: Amounts may not sum to totals because of rounding; * = between zero and $500,000.

BASIS OF ESTIMATE

For this estimate, CBO assumes that S. 2848 will be enacted near the end of fiscal year 2016 and that the authorized and necessary amounts will be appropriated for each fiscal year. Estimates of amounts necessary to implement the bill are based on information from the Corps, EPA, and other agencies; estimated outlays are based on historical spending patterns for similar projects and programs. Major components of the estimated costs are described below.

Spending Subject to Appropriation

CBO estimates that S. 2848 would authorize appropriations totaling about $11.5 billion over the 2017-2026 period for water infrastructure projects and grant programs administered by the Corps and EPA. We estimate that implementing those provisions would cost $10.6 billion over the 2017-2026 period (see Table 2).

TABLE 2. ESTIMATED EFFECTS ON SPENDING SUBJECT TO APPROPRIATION OF S. 2848, THE WATER RESOURCES DEVELOPMENT ACT OF 2016

	By Fiscal Year, in Millions of Dollars											
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2017-2021	2017-2026
INCREASES IN SPENDING SUBJECT TO APPROPRIATION												
Title VII: Safe Drinking Water and Clean Water Infrastructure												
Estimated Authorization Level	1,042	1,162	1,212	1,262	1,362	92	92	92	92	92	6,038	6,495
Estimated Outlays	272	395	672	892	1,242	1,105	791	552	295	240	3,473	6,456
Title VI: Water Resources Infrastructure												
Estimated Authorization Level	70	98	196	236	290	335	426	488	497	541	890	3,177
Estimated Outlays	28	60	118	175	226	276	338	402	443	481	607	2,548
Title II: Navigation												
Estimated Authorization Level	54	56	72	80	89	95	74	71	66	68	351	725
Estimated Outlays	38	55	67	77	87	93	81	72	68	67	324	705
Title III: Dam and Levee Safety												
Estimated Authorization Level	21	21	41	57	77	78	78	78	60	60	217	571
Estimated Outlays	11	17	20	25	34	46	58	69	62	59	108	401
Title IV: River Basins, Watersheds, and Coastal Areas												
Estimated Authorization Level	37	30	31	50	52	20	21	21	4	4	200	269
Estimated Outlays	20	29	28	38	45	32	24	22	13	8	160	259
Other Provisions												
Estimated Authorization Level	39	39	39	39	31	16	16	16	17	11	187	263
Estimated Outlays	25	34	37	38	32	21	17	16	16	14	166	249
Total Costs												
Estimated Authorization Level	1,262	1,405	1,591	1,724	1,901	635	707	767	734	775	7,883	11,501
Estimated Outlays	395	591	942	1,245	1,666	1,574	1,308	1,132	896	869	4,838	10,618

Note: Amounts may not sum to totals because of rounding.

Title VII: Safe Drinking Water and Clean Water Infrastructure. CBO estimates that implementing title VII would cost about $6.5 billion over the 2017-2026 period, assuming appropriation of the necessary amounts. The legislation would authorize the appropriation of the following amounts for water infrastructure and conservation programs, with the bulk authorized for 2017 through 2021:

- $1.8 billion for EPA to make grants to help municipalities address the cost of controlling sewer overflows and stormwater discharges;

- $1.5 billion for EPA to support the Great Lakes Restoration Initiative;

- $1.43 billion for EPA to make grants to assist small and disadvantaged communities with the cost of complying with drinking water regulations.

- $500 million for EPA to make grants to public water systems and other entities to develop innovative water technologies;

- $415 million for several federal agencies to perform ecological restoration activities in the Lake Tahoe Basin;

- $325 million to support conservation and research activities for Long Island Sound;

- $300 million for EPA to make grants to public water systems to fund projects, such as replacing service lines, that reduce lead in drinking water;

- $125 million for EPA to provide technical assistance grants to small and medium water treatment works; and

- $100 million for EPA to make grants to fund lead testing programs in schools and child care centers.

Title VI: Water Resources Infrastructure. CBO estimates that implementing title VI would cost about $2.5 billion over the 2017-2026 period, assuming appropriation of estimated amounts and accounting for anticipated inflation. This title would authorize the Corps to construct 27 new projects and would modify the existing authorization of another five projects; those projects would aim to improve the nation's navigation system, strengthen flood-risk management, and restore the environment. Based on information from the Corps, CBO estimates that the total cost to complete those projects would be $10.5 billion over the next 15 years and beyond. S. 2848 would authorize the appropriation of $5.8 billion to cover the federal share of those costs and nonfederal entities would be responsible for the remaining share, totaling an estimated $4.7 billion.

To estimate the federal costs of those projects, CBO used information from the Corps about when construction for each project would begin, how long it would take to complete each project, and what funding would be necessary to complete each project over the anticipated construction period. Because of the size and complexity of some Corps projects, larger projects can take several years to commence and more than ten years to complete. CBO estimates that the federal share of the projects and modifications authorized by this title would require the appropriation of about $3.2 billion over the 2017-2026 period; the remainder of the federal share to complete the projects would be needed after 2026.

The estimated cost of the five largest projects authorized by S. 2848 totals $6.9 billion; the federal share would total about $3.5 billion. Those projects are:

- The Central Everglades Planning Project to restore the Everglades in central and southern Florida ($1 billion);

- The American River Watershed Common Features project to reduce the risk of floods along the American and Sacramento Rivers near Sacramento, California ($880 million);

- The West Sacramento project to reduce the risk of floods in the City of West Sacramento, California ($780 million);

- The West Shore Lake Pontchartrain project to reduce the risk of hurricane and storm damages in St. Charles, St. John the Baptist and St. James Parishes in Louisiana ($480 million); and

- The Los Angeles River Ecosystem Restoration project to restore ecosystems along the Los Angeles River in Los Angeles County, California ($380 million).

Assuming appropriation of the necessary amounts, CBO estimates that about $1.1 billion of those costs would be incurred over the 2017-2026 period. Based on information from the Corps, CBO estimates that construction costs for the other 22 projects and 5 modifications authorized by the bill would total about $1.4 billion over the next 10 years.

Title II: Navigation. CBO estimates that implementing title II would cost $705 million over the 2017-2026 period, assuming appropriation of the necessary amounts.

Title II would increase from 50 percent to 75 percent the federal share of project costs for dredging coastal and inland harbors to depths between 45 feet and 50 feet. Under current law, the federal share of the cost for dredging to depths between 20 feet to 45 feet is 75 percent and for dredging beyond 45 feet, 50 percent. Under the bill, the federal cost share for the portion of dredging between 45 feet to 50 feet would increase to 75 percent. Based on information from the Corps, eight dredging projects would be affected by this provision. The total estimated cost for those projects is $3.7 billion. Under the bill, the federal share of those costs would increase by about $430 million over the 2017-2026 period, including adjustments for anticipated inflation. (Nonfederal costs for those projects would decrease by a corresponding amount.)

Title II also would authorize the appropriation of $25 million each year for dredging along the lower half of Mississippi River at shallow draft ports that require depths of 14 feet or less to operate. Finally, this title would direct the Corps to prepare a report on potential transportation savings that would result from maintaining harbors at their required width and depth for each Corps project. CBO estimates that implementing those provisions would cost $275 million over the 2017-2026 period.

Title III – Dam and Levee Safety. CBO estimates that implementing title III would cost about $400 million over the 2017-2026 period, assuming appropriation of the necessary amounts.

S. 2848 would authorize the appropriation of $435 million over 10 years for a new program within the Federal Emergency Management Agency (FEMA) to provide grants to states to rehabilitate dams that would pose unacceptable risks to the public. Based on information provided by FEMA, CBO estimates that implementing that provision would cost $265 million over the 2017-2026 period.

The bill also would authorize the appropriation of $125 million for mitigating hurricane and storm damage by restoring levees at certain facilities to address subsiding land and rising sea levels. Under current law, the Corps' authority to perform those activities expires in 2024; CBO assumes that the authorized mounts would be provided before 2024 in equal amounts over the next eight years. Accounting for anticipated inflation, CBO estimates that restoring eligible levees would cost $136 million over the 2017-2026 period.

Title IV – River Basins, Watersheds, and Coastal Areas. CBO estimates that implementing title IV would cost about $260 million over the 2017-2026 period, assuming appropriation of the necessary amounts and accounting for anticipated inflation.

S. 2848 would authorize the appropriation of $172 million for several activities including restoring ecosystems along the Columbia River in Oregon and Washington; mitigating flood damage arising from ice jams in the Upper Missouri River Basin; restoring fish and oyster habitat in the Chesapeake Bay tributaries of Virginia and Maryland; rehabilitating fish and wildlife habitat along the Rio Grande in Colorado, New Mexico, and Texas; and developing a plan for oyster bed recovery in Alabama, Florida, Louisiana, Mississippi, and Texas. Based on information from the Corps, CBO estimates that those activities would cost $178 million over the 2017-2026 period.

Title IV also would authorize the Corps to assess coastal regions in the United States for the risks of flooding and erosion areas. According to information from the Corps, there are five coastal regions in the United States that would qualify for such an assessment. CBO estimates that each assessment would cost $8 million. Assuming appropriation of the necessary amounts and accounting for anticipated inflation, CBO estimates that implementing this provision would cost $42 million over the 2017-2026 period.

This title also would authorize the Corps to provide assistance to Indian families displaced by construction of the Bonneville Dam that have not already received assistance. Based on information from the Corps, CBO estimates that there are at least 40 families that would qualify for assistance. Assistance provided to Indian families a few years ago in a similar situation totaled about $750,000 per family. Assuming a similar level of assistance, and accounting for anticipated inflation, CBO estimates that implementing the provision would cost $31 million over the 2017-2026 period.

Finally, the bill would authorize the Corps to conduct studies and develop plans to:

- Assess the number of tribal families displaced by the John Day Dam on the border of Oregon and Washington;

- Assess the feasibility of including navigation as an authorized purpose for the Columbia and lower Willamette Rivers in Washington and Oregon;

- Develop a plan in collaboration with the Bureau of Reclamation to manage sediment removal at reservoirs along the Missouri River; and

- Assess the feasibility of carrying out projects to reduce the risk of flooding in the Upper Mississippi and Illinois River Basins.

Based on information from the Corps, CBO estimates that completing those studies would cost $9 million over the 2017-2026 period.

Other Provisions. CBO estimates that implementing the remaining provisions in the bill would cost about $250 million over the 2017-2026 period, assuming the appropriation of authorized and estimated amounts. Those provisions would:

- Reauthorize the Water Resources Research Act, which allows federal agencies to provide grants to colleges and universities to support research to improve water supply, address water problems, and train researchers;

- Reauthorize the Water Desalination Act of 1986, which supports the research and development of technologies to reduce the cost of water desalination;

- Require federal agencies to produce a variety of studies and reports on water-related issues;

- Increase the authorization of appropriations by an estimated $95 million for an ongoing project to expand the wastewater infrastructure in Desoto County, Mississippi; and

- Direct the Corps to develop a system to monitor the condition of infrastructure it maintains.

Changes in Direct Spending

On net, CBO estimates that enacting S. 2848 would decrease direct spending by $59 million over the 2017-2026 period (see Table 3).

Several provisions, taken together, would increase direct spending by $270 million over the 2017-2026 period because they would appropriate to EPA and other agencies:

- $100 million to provide grants through EPA's State Revolving Fund program to assist states with drinking water emergencies;

- $70 million to subsidize loans to eligible entities under the Water Infrastructure Finance and Innovation Act (WIFIA) for water infrastructure projects;

- $50 million to provide grants to help small and disadvantaged communities comply with drinking water standards, address combined sewer overflows, and develop innovative water technologies;

- $30 million to provide grants through several programs to reduce lead exposure among children; and

- $20 million to develop a national lead exposure registry.

Another provision would reduce direct spending by $300 million over the 10-year period by permanently prohibiting, after 2020, the Department of Energy from obligating existing balances available to cover the subsidy costs of loans issued through the Advanced Technology Vehicle Manufacturing (ATVM) program.[1]

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1. Funding for the ATVM program was provided in Public Law 110-329, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act of 2009, and was designated as emergency spending by the Congress.

TABLE 3. ESTIMATED EFFECT ON DIRECT SPENDING AND REVENUES OF S. 2848, THE WATER RESOURCES DEVELOPMENT ACT OF 2016

	By Fiscal Year, in Millions of Dollars												
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2016-2021	2016-2026
INCREASES OR DECREASES (-) IN DIRECT SPENDING													
SRF Capitalization Grants													
Estimated Budget Authority	0	100	0	0	0	0	0	0	0	0	0	100	100
Estimated Outlays	0	10	50	40	0	0	0	0	0	0	0	100	100
WIFA Loan Credit Subsidy													
Estimated Budget Authority	0	70	0	0	0	0	0	0	0	0	0	70	70
Estimated Outlays	0	5	6	7	7	8	8	8	8	8	8	33	70
Community Grants													
Estimated Budget Authority	0	50	0	0	0	0	0	0	0	0	0	50	50
Estimated Outlays	0	6	14	16	14	0	0	0	0	0	0	50	50
Childhood Lead Exposure Prevention Programs													
Estimated Budget Authority	0	30	0	0	0	0	0	0	0	0	0	30	30
Estimated Outlays	0	11	15	4	0	0	0	0	0	0	0	30	30
National Lead Exposure Registry													
Estimated Budget Authority	0	20	0	0	0	0	0	0	0	0	0	20	20
Estimated Outlays	0	13	5	2	0	0	0	0	0	0	0	20	20
Advanced Technology Vehicle Manufacturing Program													
Estimated Budget Authority	0	0	0	0	0	0	0	0	0	0	0	0	0
Estimated Outlays	0	0	0	0	0	-50	-50	-50	-50	-50	-50	-50	-300
Other Provisions													
Estimated Budget Authority	-31	-1	*	*	*	*	*	*	*	*	*	-31	-28
Estimated Outlays	-31	-1	*	*	*	*	*	*	*	*	*	-31	-29
Total Change in Direct Spending													
Estimated Budget Authority	-31	269	*	*	*	*	*	*	*	*	*	239	242
Estimated Outlays	-31	44	90	69	21	-42	-42	-42	-42	-42	-42	152	-59
DECREASES IN REVENUES													
Estimated Revenues	0	-1	-1	-2	-3	-4	-6	-7	-8	-10	-11	-11	-53
NET INCREASE OR DECREASE (-) IN DEFICITS FROM CHANGES IN DIRECT SPENDING AND REVENUES													
Estimated Effect on the Deficit	-31	45	91	71	24	-38	-36	-35	-34	-32	-31	163	-6

Notes: Amounts may not sum to totals because of rounding; SRF = State Revolving Fund; WIFIA = Water Infrastructure Finance and Innovation Act; * = between zero and $500,000.

Finally, based on information from the Corps, CBO estimates that enacting three other provisions in the bill would decrease net direct spending by $29 million over the 2017-2026 period. Those provisions would:

- Require the Trinity River Authority in Texas to repay $31 million owed to the federal government in a lump sum by the end of fiscal year 2016;

- Direct the Corps to enter into agreements with nonfederal entities to jointly manage parks and recreational facilities and allow those entities to collect fees that the Corps currently remits to the Treasury (totaling about $4 million) and to spend those fees for operation and maintenance expenses at those sites; and

- Direct the Corps to transfer land adjacent to Sardis Lake in Mississippi to a nonfederal entity in exchange for the market value of the land, which has an estimated value of $1 million.

Revenues

JCT expects that some of the funds authorized and appropriated in S. 2848 for grants to capitalize State Revolving Funds and direct loans under the WIFIA program would be used by state and local governments to leverage additional funds by issuing tax-exempt bonds. JCT estimates that the issuance of additional tax-exempt bonds would reduce federal revenues by $53 million over the 2017-2026 period, as shown in Table 3.

PAY-AS-YOU-GO CONSIDERATIONS

The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays and revenues that are subject to those pay-as-you-go procedures are shown in Table 4.

The law that established statutory pay-as-you-go procedures excludes from such calculations any budgetary effects designated as an emergency requirement. Consequently, the reduction in spending for the ATVM program under S. 2848 which was designated as emergency spending in Public Law 110-329, is not included for the purposes of estimating the pay-as-you-go cost of the legislation. CBO estimates that for pay-as-you-go purposes, S. 2848 would increase budget deficits by $294 million over the 2016-2026 period.

TABLE 4. CBO ESTIMATE OF PAY-AS-YOU-GO EFFECTS OF S. 2848, THE WATER RESOURCES DEVELOPMENT ACT OF 2016, AS ORDERED REPORTED BY THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS ON APRIL 28, 2016

	By Fiscal Year, in Millions of Dollars												
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2016-2021	2016-2026
NET INCREASE OR DECREASE (-) IN THE DEFICIT													
Total Changes	-31	45	91	71	24	-38	-36	-35	-34	-32	-31	163	-6
Less:													
Changes in Spending Designated as Emergency Requirements [a]	0	0	0	0	0	-50	-50	-50	-50	-50	-50	-50	-300
Statutory Pay-As-You-Go Impact	-31	45	91	71	24	12	14	15	16	18	19	213	294
Memorandum:													
Changes in Outlays	-31	44	90	69	21	-42	-42	-42	-42	-42	-42	152	-59
Changes in Revenues	0	-1	-1	-2	-3	-4	-6	-7	-8	-10	-11	-11	-53

Sources: Congressional Budget Office and staff of the Joint Committee on Taxation.

Note: Components may not sum to totals because of rounding.

a. Section 7701 of S. 2848 would prohibit the Department of Energy from obligating budget authority for the ATVM program that was originally designated as an emergency requirement under Public Law 110-329, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009. Pursuant to section 4(g) of the Statutory Pay-As-You-Go Act of 2010, such amounts are excluded from estimates of direct spending and revenue effects for purposes of that act.

INCREASE IN LONG-TERM NET DIRECT SPENDING AND DEFICITS

CBO estimates that enacting the bill would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2027.

INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

The bill would impose intergovernmental and private-sector mandates as defined in UMRA; however, CBO estimates that the aggregate costs of the mandates would fall below the annual thresholds established in UMRA for intergovernmental and private-sector mandates ($77 million and $154 million in 2016, respectively, adjusted annually for inflation). The bill also would authorize federal grant, technical assistance, and loan programs that would benefit state, local, and tribal governments.

Mandates That Apply to Both Public and Private Entities

The bill would impose a mandate on owners and operators of public water systems by requiring those entities to notify the public when measurements of lead in drinking water exceed safe levels prescribed by federal regulations under the Safe Drinking Water Act. Information from public water systems, state agencies, and EPA indicates that most public water systems currently provide notices to the public when levels of lead and other regulated contaminants exceed allowable levels. Therefore, CBO estimates that the incremental cost of making the notifications required by the bill would be small.

The bill also would impose a mandate on owners and operators of watercraft launched in the waters of the Lake Tahoe Basin. The bill would require those owners and operators to submit their watercraft for inspection before launching in waters of the Lake Tahoe Basin. Because the Tahoe Regional Planning Agency currently subjects watercraft to inspection requirements, most owners and operators would already be in compliance with the bill's requirements. Therefore, CBO estimates that the cost to comply with the inspection requirements under the bill would be negligible.

Other Effects on Public Entities

The bill would benefit state, local, and tribal governments by authorizing federal grant and loan programs to improve water infrastructure and reduce contaminants such as lead in drinking water systems. The bill also would benefit those governments by providing greater flexibility in the administration and financing of water infrastructure projects supported by EPA and the Corps through State Revolving Funds and other federal programs. Any costs incurred by those entities, including matching contributions for federal grants and loan repayments, would be incurred voluntarily.

The bill would benefit state, local, and tribal governments, as well as public institutions of higher education, that participate in federal conservation programs for the Great Lakes and Long Island Sound. The bill also would benefit state, local and tribal governments in California and Nevada by authorizing federal grants and technical assistance for fire prevention, forest management activities, and environmental improvement projects located in the Lake Tahoe Basin. Finally, the bill would authorize conveyances of federal land to California and Nevada. Any costs to those entities, including matching contributions, would be incurred voluntarily.

PREVIOUS CBO ESTIMATE

This revised cost estimate for S. 2848 supersedes a CBO cost estimate transmitted on June 17, 2016, for the bill as ordered reported by the Senate Committee on Environment and Public Works on April 28, 2016. The law that established statutory pay-as-you-go procedures excludes from such calculations any budgetary effects designated as an emergency requirement.

Section 7701 would prohibit the Department of Energy from obligating balances of budget authority for the ATVM program. Those amounts were originally provided and designated as an emergency requirement under Public Law 110-329, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009. In the earlier cost estimate for S. 2848 CBO did not account for this emergency designation when estimating the cost of the legislation for purposes of the Statutory Pay-As-You-Go Act.

ESTIMATE PREPARED BY:

Federal Spending: Aurora Swanson and Jon Sperl
Federal Revenues: Staff of the Joint Committee on Taxation
Impact on State, Local, and Tribal Governments: Jon Sperl
Impact on the Private Sector: Amy Petz

ESTIMATE APPROVED BY:

H. Samuel Papenfuss
Deputy Assistant Director for Budget Analysis