



## Bipartisan Infrastructure Law projects in three programs support an average of 17,669 jobs and \$2.0 billion to the economy in Fiscal Years 2022 and 2023

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### Quick Take

- The **Bipartisan Infrastructure Law (BIL)** provided direction and funding for government-wide investment in infrastructure and competitiveness.
- As part of carrying out the BIL, the **U.S. Department of the Interior is addressing legacy pollution and water resource needs.**
- The Fiscal Year 2022 and 2023 BIL expenditures related to **three programs**— Abandoned Mine Land; Orphaned Well Plugging, Remediation, and Reclamation; and Water Resources— were **estimated to support, on average across the two years, up to 17,669 jobs and generate \$2.0 billion to the U.S. economy annually.**

The Bipartisan Infrastructure Law (BIL) of 2021<sup>1</sup> directed investment in U.S. infrastructure to over 350 distinct programs across more than a dozen Federal departments and agencies. Of the Department of the Interior (DOI) activities under BIL, three programs are directed to address legacy pollution and critical water resource issues.

- **Abandoned Mine Land (AML):** The law provides \$11.3 billion in AML funding over 15 years which will help communities clean up dangerous environmental conditions and pollution caused by past coal mining. This funding is expected to enable reclamation of the majority of currently abandoned mine lands in this country.
- **Orphaned Well Plugging, Remediation and Reclamation (Orphaned Wells):** The law provides \$4.7 billion for orphaned well site plugging, remediation, and restoration activities on Federal, Tribal, state, and public lands. This investment will reduce methane and other greenhouse gas emissions from orphaned wells, help clean up water contamination, restore native habitat, and benefits disproportionately impacted communities.
- **Water Resources:** The law provides \$8.3 billion for investments in critical water infrastructure for stakeholders, Tribal nations, and communities in the 17 western states.

This report provides estimates of the economic contributions of DOI's Fiscal Year 2022 and 2023 expenditures for BIL AML, Orphaned Wells, and Water Resources. These three BIL programs were selected for initial research given the economic intent within the legislation. Total economic contributions equal the sum of direct, indirect, and induced effects, defined as follows.

- *Direct Effect:* Known economic change that occurs because of the DOI's expenditures in Fiscal Years 2022 and 2023. This includes the activity that results from the businesses which receive BIL funds (i.e., DOI expenditures). These direct businesses are represented in the industry sectors listed in each of the Program Area descriptions in Appendix A.
- *Indirect Effect:* Business-to-business transactions in the supply chain in response to DOI's original expenditures. This includes inputs that suppliers must purchase from other industries and provide to the direct business (see Table A.1) in order for the direct business to produce its goods and services.

- *Induced Effect*: Household spending on goods and services because of changes to people’s income related to their work in businesses that satisfy both the direct and indirect effects of the DOI activity.

Indirect and induced effects of spending are considered secondary effects, capturing how the direct effect of DOI expenditures “ripples” through the U.S. economy as the money (e.g., federal expenditures) is re-spent.

The economic contributions from the DOI’s Fiscal Year 2022 and 2023 AML, Orphaned Wells, and Water Resources expenditures are measured as follows:

- *Supported Jobs*: The total number of jobs supported by DOI Fiscal Year 2022 and 2023 AML, Orphaned Wells, and Water Resources activities. Here, supported jobs are defined as the total number of annualized full-, part- and temporary-time jobs accumulated over the duration of Fiscal Year 2022 and Fiscal Year 2023. These jobs supported are a measure of the quantity of employment supported by BIL expenditures and are not the measure of the number of workers. For example, if a construction project using Fiscal Year 2022 expenditures employs a worker for 18 months, this worker would be counted as 1.5 supported jobs in this estimate – that is, the jobs supported capture the jobs supported by this amount of Fiscal Year 2022 expenditures regardless of whether this expenditure, or the worker’s term of employment, extend beyond Fiscal Year 2022.
- *Value Added*: The total estimated contribution of the DOI’s Fiscal Year 2022 and 2023 expenditures of the AML, Orphaned Wells, and Water Resources programs to the Gross Domestic Product (GDP) of the National economy.

For purposes of these estimates Fiscal Year expenditures are defined as the amount obligated by DOI offices and bureaus in each fiscal year as reported by the series Master Data Governance from DOI’s Financial and Business Management System as of October 04, 2023. These obligations may not match amounts allotted in DOI budget documents or reflect when funds are spent in (i.e., enter) the economy.

## Results

In Fiscal Year 2022 the total DOI expenditures for these three BIL programs were \$1.1 billion, which supported 12,534 jobs and contributed \$1.5 billion to the economy. In Fiscal Year 2023 total DOI expenditures were \$1.7 billion, which supported 22,805 jobs and contributed \$2.5 billion to the economy. These economic contributions associated to the DOI Fiscal Year 2022 and 2023 expenditures can be broken down by BIL program (Table 1 and Table 2) and by type of activity (Table 3).

## Methods

IMPLAN<sup>a</sup> input-output models (<https://IMPLAN.com>) were used to estimate the economic contributions of each of the BIL programs. This methodology is described in more detail in Appendix A.

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<sup>a</sup> IMPLAN refers to economic modeling and analytics software for economic impact analysis.

**Table 1. Bipartisan Infrastructure Law Fiscal Year 2022 expenditures and estimated Economic Contributions.**

	Expenditures <sup>b</sup>	Jobs Supported	Contributions to GDP
<b>Abandoned Mine Land</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>
<b>Orphaned Well</b>	<b>\$574,142,000</b>	<b>6,373</b>	<b>\$827,981,453</b>
Federal	\$14,142,000	148	\$20,777,235
State Initial	\$560,000,000	6,225	\$807,204,218
Tribal	\$0	0	\$0
<b>Water Resources</b>	<b>\$477,901,419</b>	<b>6,160</b>	<b>\$672,430,315</b>
Safety of Dams	\$100,000,000	1,145	\$133,414,013
Rural Water	\$237,344,000	3,278	\$341,196,231
Aging Infrastructure	\$114,288,000	1,382	\$158,977,765
Water Storage/Convey	\$269,419	4	\$390,568
Drought Contingency Colorado River	\$0	0	\$0
Watershed Management	\$0	0	\$0
Endangered species - Colorado River	\$8,500,000	126	\$13,982,180
Water Recycling & Reuse (Title XVI)	\$0	0	\$0
WaterSMART Grants	\$17,500,000	226	\$24,469,557
WaterSMART Public Lands	\$0	0	\$0
<b>TOTAL</b>	<b>\$1,052,043,419</b>	<b>12,534</b>	<b>\$1,500,411,768</b>

### Peer Review

This report was peer reviewed for technical merit by Office of Policy Analysis economists. The Director of the Office of Policy Analysis and the Director of the BIL Project Management Office (Policy, Management, and Budget, Office of the Secretary) reviewed the report for overall framing and presentation. Additionally, bureau program areas and economists reviewed for accuracy in IMPLAN methodology and project characterization.

### Disclaimer

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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### References

1. U.S. Congress. *Infrastructure Investment and Jobs Act*. 1–1039 (2021).

<sup>b</sup> For purposes of these estimates Fiscal Year expenditures are defined as DOI obligations and may not match amounts allotted in DOI budget documents or when funds are spent in (e.g., enter) the economy.

**Table 2. Bipartisan Infrastructure Law Fiscal Year 2023 expenditures and estimated economic contributions.**

	<b>Expenditures<sup>3</sup></b>	<b>Jobs Supported</b>	<b>Contributions to GDP</b>
<b>Abandoned Mine Land</b>	<b>\$728,677,000</b>	<b>9,128</b>	<b>\$1,033,059,035</b>
<b>Orphaned Well</b>	<b>\$46,940,216</b>	<b>\$548</b>	<b>\$68,695,522</b>
Federal	\$7,559,216	81	\$10,984,910
State Grants, Initial	\$0	0	\$0
Tribal	\$39,381,000	467	\$57,710,612
<b>Water Resources</b>	<b>\$972,563,000</b>	<b>13,128</b>	<b>\$1,392,582,333</b>
Safety of Dams	\$0	0	\$0
Rural Water	\$352,383,000	4,845	\$506,453,731
Aging Infrastructure	\$29,484,000	355	\$41,018,330
Water Storage/Convey	\$90,577,000	1,259	\$132,953,959
Drought Contingency Colorado River	\$77,114,000	970	\$106,848,694
Watershed Management	\$3,769,000	56	\$6,203,264
Endangered species - Colorado River	\$10,663,000	158	\$17,549,856
Water Recycling & Reuse (Title XVI)	\$258,093,000	3,549	\$370,937,766
WaterSMART Grants	\$149,480,000	1,922	\$208,970,868
WaterSMART Public Lands	\$0	0	\$0
Aquatic Ecosystem Restoration and Protection	\$1,000,000	15	\$1,645,865
<b>TOTAL</b>	<b>\$1,748,180,216</b>	<b>22,805</b>	<b>\$2,494,336,889</b>

**Table 3. Bipartisan Infrastructure Law Fiscal Year 2022 and 2023 activities and estimated economic contributions.**

Industry Sector	Jobs Supported		Contributions to GDP	
	Fiscal Year 2022	Fiscal Year 2023	Fiscal Year 2022	Fiscal Year 2023
Construction of other new nonresidential structures	3,431	15,080	\$357,153,606	\$1,576,202,912
Support activities for oil and gas operations	3,332	226	\$467,781,240	\$31,850,536
Maintenance and repair construction of nonresidential structures	2,255	1,823	\$262,742,249	\$213,265,100
Waste management and remediation services	1,822	3,521	\$224,805,182	\$435,502,134
Employment and payroll of state government, other	746	503	\$79,510,472	\$53,834,126
State Institutional Spending, Other	432	0	\$49,870,216	\$0
Architectural, engineering, and related services	348	705	\$38,549,685	\$78,287,370
Environmental and other technical consulting services	135	854	\$14,961,912	\$94,891,654
Employment and payroll of federal government	32	36	\$5,037,205	\$5,731,789
Office Administrative Services	0	47	\$0	\$3,563,127
Management Consulting Services	0	11	\$0	\$1,162,971
Computer Systems Design Support	0	0	\$0	\$45,169
<b>TOTAL</b>	<b>12,534</b>	<b>22,805</b>	<b>\$1,500,411,768</b>	<b>\$2,494,336,889</b>

## Appendix A

Additional details of the methods used in this report are provided in the subsections below.

### *Fiscal Year 2022 and 2023 Expenditures*

In this report, Federal Fiscal Year 2022 and 2023 expenditures are equal to the amount obligated by DOI offices and bureaus in each fiscal year as reported by the series Master Data Governance (MDG) from DOI's Financial and Business Management System (FBMS) as of October 04, 2023.<sup>a</sup> Note, obligations may not match amounts allotted in DOI budget documents or reflect when monies are spent in (e.g., enter) the economy.

### *Scope*

These estimates capture the economic contributions associated to the BIL expenditures on work phase activities such construction, remediation, well plugging, etc. They do not capture the long run economic contributions that occur from the operational phase outcomes of the BIL funding such as recreation, water access, etc.

### *IMPLAN Input-Output Models*

The economic contributions are estimated using IMPLAN, an economic analysis software application that is designed to estimate the impacts or "ripple" effects of a given economic activity through the implementation of its input-output modeling. The economic data underlying IMPLAN reflect data collected by the U.S. Department of Commerce's Bureau of Economic Analysis, the U.S. Department of Labor's Bureau of Labor Statistics, and other Federal and state government agencies.

### *Data Year*

Given the economic contribution estimates reflect BIL activities that do not yet have a full set of economic data, assumptions must be made about the economic structure and supply chains for Fiscal Year 2022 and 2023. For purposes of this research, it is assumed that the structure of the economy in Fiscal Year 2022 and 2023 is similar to Calendar Year 2021, the year with the most recently available full set of economic data in the IMPLAN software.

### *Dollar Year*

The IMPLAN models use dollar years equal to the respective Fiscal Year 2022 and 2023 in order to best capture estimates of inflation.

### *Region*

The IMPLAN models use a National region. This assumes that the BIL activities being performed rely on contracted work and supply chains are not specific to the place of performance. The methodology also assumes all supply chain requirements are satisfied by U.S. based businesses.

### *IMPLAN Impact Type*

**Industry Output:** An IMPLAN *Industry Output* impact type is used for all estimates except for a portion of the expenditures related to the Orphaned Well Initial State Grants.<sup>b</sup> In these *Industry Output* impacts BIL expenditures are bridged to industry sectors based on the *nature of the work* being performed not who is *performing the work*. For example, when a Federal employee is performing a specialized activity, such as dam safety, the activity is bridged to a comparable industry of dam safety rather than the *Federal Nonmilitary Employment and Payroll* industry.

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<sup>a</sup> Fiscal Year obligations are not equal to the Fiscal Year fund amount awarded, transferred from parent account to Bureau account, pulled down from the recipient, or spent in the economy.

<sup>b</sup> IMLAN commodity and Institutional Spending Pattern impact types were also examined but determined not to have comparable detail to capture the specific BIL activities.

In each *Industry Output* impact, the best fit industry sectors were identified in a three-step process. The first step distributed Fiscal Year expenditures proportionally to the eligible activities being performed based on information from the BIL Program Areas. Next, each eligible activity was bridged to a North American Industry Classification System (NAICS) industry by using keyword searches to identify the best fit industry for the type of work. The last step bridged each NAICS industry to a comparable IMPLAN industry sector using the 2022 NAICS to IMPLAN 546 Industries conversion bridge.<sup>c</sup>

**Institutional Spending:** In one exception—the portion of the Orphaned Wells Initial State Grants that states expended on administration and support activities— an IMPLAN *Institutional Spending Pattern* impact type was used in place of an *Industry Output* impact to best reflect the economic “ripple” effect of the expenditure. Here, the commodity distribution of the *State/Local Government, Other* specification was modified to exclude the percentage of commodity spending (33.47%) assigned to the employment and payroll of local governments, given the BIL expenditures were specific to states.

#### Response Coefficients

The methodology employs activity-level response coefficients to derive economic multipliers. The response coefficients estimate the multipliers for every \$1 million of activity-level expenditures.

#### Administrative Expenses

The portion of BIL expenditures related to BIL Program Area administrative and support activities are excluded from these estimates under the assumption that these employees would be performing DOI work, and thus economic activity, at the same level regardless of the BIL expenditure level.

#### Abandoned Mine Land

In Fiscal Year 2023 the BIL AML program expended \$728.7 million.<sup>d</sup> These expenditures are estimated to support 9,128 jobs and contribute \$1.0 billion to the economy. The AML *Industry Output* impact relied on distributing Fiscal Year expenditures proportionally to eligible activities using available DOI Office of Surface Mining Reclamation and Enforcement (OSMRE) budget data.<sup>e</sup> Table A.1 shows the distribution of AML expenditures across IMPLAN industry sectors for each Fiscal Year.

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<sup>c</sup> <https://support.implan.com/hc/en-us/articles/15398463942683-U-S-546-Industries-Conversions-Bridges>

<sup>d</sup> The AML program had \$0 expenditures in Fiscal Year 2022.

<sup>e</sup> Budget information provided the best available distribution detail at the time of estimation; however, it may differ in some ways from the actual distribution of obligations.

**Table A.1: Distribution of Abandoned Mine Land expenditures across IMPLAN industry sectors, by year.**

Industry Sectors	Distribution of FY 2022\$ (%)	Distribution of FY 2023\$ (%)
56 - Construction of other new nonresidential structures	0%	38%
60 - Maintenance and repair construction of nonresidential structures	0%	6%
541 - Employment and payroll of state government, other	0%	4%
546 - Employment and payroll of federal government	0%	0%
457 - Architectural, engineering, and related services	0%	4%
463 - Environmental and other technical consulting services	0%	4%
479 - Waste management and remediation services	0%	42%

### Orphaned Well

In Fiscal Year 2022 the BIL Orphaned Well Program expended \$574.1 million. The activities funded by these expenditures are estimated to support 6,373 jobs and contribute \$828.0 million to the economy. In Fiscal Year 2023 the program expended \$46.9 million, which is estimated to support 548 jobs and contribute \$69.0 million to the economy.

The *Industry Output* impacts, used for all expenditures, excluding expenditures used for state initial grants related to administrative and support activities, relied on distributing Fiscal Year expenditures proportionally to eligible activities using the following information from the Orphaned Well Program Office (OWPO):

- Federal Program (2022, 2023): Available budget information from each receiving Federal entity (e.g., the Bureau of Land Management, Bureau of Safety and Environmental Enforcement, U.S. Fish and Wildlife Service, National Park Service).<sup>f</sup>
- State Initial Grants (2022): A state programmatic and a state administrative proxy, based on a review of the distribution of expenditures provided in the budget documents submitted by states as part of the application process.
- Tribal Grants (2023): A tribal implementation and a tribal programmatic proxy, based on a review of the distribution of expenditures provided in the budget documents submitted by tribes as part of the application process.

The *Institutional Spending Pattern* impact used a “state and local government, other” event type to capture the administrative portion of state initial grants. The underlying commodity spending pattern of this event type was adjusted to exclude the local government commodities spending (34%) to accurately reflect the state recipient of these expenditures.

Table A.2 shows the distribution of Orphaned Well expenditures across IMPLAN industry sectors for the Federal program, state initial grants and tribal grants.

<sup>f</sup> Budget information provided the best available distribution detail at the time of estimation; however, it may differ in some ways from the actual distribution of obligations.



**Table A.2: Distribution of Orphaned Well expenditures across IMPLAN industry sectors, by year.**

Industry Sector	Distribution of FY 2022\$ (%)	Distribution of FY 2023\$ (%)
<b>Federal Program</b>		
36 - Support activities for oil and gas operations	59%	52%
457 - Architectural, engineering, and related services	0%	5%
463 - Environmental and other technical consulting services	4%	2%
479 - Waste management and remediation services	14%	25%
546 - Employment and payroll of federal government	23%	15%
<b>State Grant Program, Initial</b>		
36 - Support activities for oil and gas operations	56%	0%
479 - Waste management and remediation services	30%	0%
541 - Employment and payroll of state government, other	8%	0%
12001 - Institutional Spending Pattern, S&L Government Other	6%	0%
<b>Tribal Grants, Development</b>		
463 - Environmental and other technical consulting services	0%	26%
457 - Architectural, engineering, and related services	0%	26%
462 - Management Consulting Services	0%	14%
470 - Office Admin Services	0%	35%
<b>Tribal Grants, Implementation</b>		
36 - Support activities for oil and gas operations	0%	52%
457 - Architectural, engineering, and related services	0%	6%
460 - Computer Systems Design Services	0%	0%
463 - Environmental and other technical consulting services	0%	1%
479 - Waste management and remediation services	0%	41%

In October 2022 the Office of Policy Analysis produced estimates of jobs supported by Fiscal Year 2022 expenditures as part of an annual reporting requirement to Congress. These estimates differ from the Fiscal Year 2022 estimates in this report for two methodological reasons. First, the October 2022 estimates used a 2019 IMPLAN data year compared to the 2021 data year used in this report. Additionally, in this report expenditures are equivalent to obligations as reported in FBMS, whereas in the October 2022 report expenditures were equivalent to Federal funds moved from the Energy Communities Revitalization Program account to bureau accounts. This newer estimate the BIL Orphaned Wells Fiscal Year 2022 economic contributions is the feature estimate given its consistency with other BIL programs.

### Water Resources

In Fiscal Year 2022 the BIL Water Resources Program expended \$477.9 million. The activities funded by these expenditures are estimated to support 6,625 jobs and contribute \$692.8 million to the economy. In Fiscal Year 2023 the program expended \$971.6 million, which is estimated to support 13,113 jobs and contribute \$1.4 billion to the economy. The DOI U.S. Bureau of Reclamation (USBR) provided information on the distribution of Fiscal Year expenditures to eligible activities using available budget material. Table A.3 show the distribution of Water Resources expenditures across IMPLAN industry sectors.

**Table A.3: Distribution of Water Resources expenditures across IMPLAN industry sectors, by year.**

<b>BIL Program and Industry Sector</b>	<b>Distribution of FY22\$ (%)</b>	<b>Distribution of FY23\$ (%)</b>
<b>Safety of Dams</b>		
60 - Maintenance and repair construction of nonresidential structures	21%	0%
<b>Rural Water</b>		
56 - Construction of other new nonresidential structures	50%	36%
<b>Aging Infrastructure</b>		
60 - Maintenance and repair construction of nonresidential structures	19%	2%
457 - Architectural, engineering, and related services	5%	1%
<b>Water Storage &amp; Conveyance</b>		
56 - Construction of other new nonresidential structures	0%	8%
457 - Architectural, engineering, and related services	0%	1%
463 - Environmental and other technical consulting services	0%	1%
<b>Drought Contingency Colorado River</b>		
56 - Construction of other new nonresidential structures	0%	4%
60 - Maintenance and repair construction of nonresidential structures	0%	4%
<b>Watershed Management</b>		
463 - Environmental and other technical consulting services	0%	0%
<b>Endangered Species Recovery and Conservation</b>		
463 - Environmental and other technical consulting services	2%	1%
<b>Water Recycling &amp; Reuse (Title XVI)</b>		
56 - Construction of other new nonresidential structures	0%	27%
<b>WaterSMART Grants</b>		
56 - Construction of other new nonresidential structures	2%	10%
60 - Maintenance and repair construction of nonresidential structures	1%	6%
<b>WaterSMART Public Lands</b>		
463 - Environmental and other technical consulting services	0%	0%
<b>Aquatic Ecosystem Restoration</b>		
463 - Environmental and other technical consulting services	0%	0%

This report acknowledges that the USBR authorization is specific to 17 western states, and as such, the National model used above may make assumptions about economic patterns that differ from the patterns within the specific 17 western state region. The report uses the National model on an assumption of National supply chains, and for consistency in methodology across BIL programs. However, USBR may expand this analysis to a regional specific model in the future to capture industry to industry and industry to household patterns that are unique to this region of 17 western states.