



Delivering Faster Restoration with Bipartisan Infrastructure Law (BIL) Funding

The need for agile procurement strategies
and innovative solutions for speed



ENVIRONMENTAL POLICY
INNOVATION
CENTER

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The Restoration Economy Center works to speed up the pace and scale of restoration in the United States to meet the need for carbon-storing offsets created by climate policies, increase our resilience to the effects of climate change, and offset new or previous impacts. We are housed in the national nonprofit, the Environmental Policy Innovation Center (EPIC).

The mission of EPIC is to build policies that deliver spectacular improvement in the speed and scale of conservation. We focus on a narrow set of strategies:

- Improving policies that allow private sector funding or stewardship to expand or supplant public or charitable conservation work
- Transforming government policies to focus on what matters— outcomes
- Eliminating the organizational barriers that prevent public agencies from adapting to 21st century solutions

We believe that innovation and speed are central to broadening efforts to conserve wildlife, to restore special natural places, and to deliver to people and nature the clean water they need to thrive. To achieve those goals, conservation programs must evolve to accommodate our modern understanding of human behavior and incentives and the challenges posed by humanity's expanding footprint. We embrace experimentation with novel ideas in conservation policy to learn quickly from mistakes and iteratively design effective approaches to be even more successful.

EPIC is a fiscally sponsored project of Sand County Foundation. Sand County Foundation is a non-profit conservation organization dedicated to working with private landowners across North America to advance ethical and scientifically sound land management practices that benefit the environment.

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Executive Summary

The Infrastructure Investment and Jobs Act (IIJA), also referred to as the BIL, will send as much as \$9.8 billion flowing toward ecological restoration through projects like dam removals, abandoned mine remediation, salmon recovery, and stormwater management over just five years. Overall, the BIL authorizes over \$1 trillion in funding, of which \$550 billion is new spending. This money will be distributed across federal agencies, trickling down through a variety of processes throughout the United States. While the BIL presents a funding influx that alleviates a major barrier to restoration efforts; the long and complicated traditional government procurement approaches will not be sufficient to spend these funds at the speed and scale this act, and the climate, clean water and endangered species crises, necessitate. We need innovative strategies to deliver these outcomes.

We believe the following straightforward procurement and financing tools will help ensure funds are allocated appropriately, and quicker than standard procurement approaches:

- **Pay for Success** contracting is a procurement strategy that defines desired outcomes and invites the private sector to deliver those in advance of payment, ensuring outcomes are achieved before payment is provided. They help create positive economic pressure, allowing the private sector to take on the risk of achieving project outcomes and spend funding efficiently. The bidding process, contracts, and payments are then based on delivery of those outcomes.
- **Public-private partnerships**, also known as P3s, are contractual arrangements that are formed between public and private-sector partners. These arrangements typically involve a government agency contracting with a private partner to renovate, construct, operate, maintain, and/or manage a facility or system, in whole or in part, that provides a public service. P3s can effectively target disadvantaged communities, overcome application and administration barriers that municipalities face, and speed the immediate deployment of capital to start restoration projects now.

Both of these finance methodologies have the potential to dramatically improve the speed and scale of conservation efforts while generating return for investors, saving money for taxpayers, and de-risking government investments in conservation.

With the concerted emphasis on restoration work embodied in the BIL, there is a move toward the codification of nature as infrastructure. Ecological restoration provides immense benefits and is necessary in the midst of the environmental crises in which we find ourselves. This report outlines the aforementioned innovative strategies that will promote the appropriate allocation of the \$9.8 billion of funds available to restoration, speed up project timelines to respond to the 5-year timeline of the BIL, and lower the barriers inherent in traditional approaches to procurement.



Introduction

Recognizing the state of the planet's climate, water, and biodiversity crises, the United Nations recently declared this decade to be the UN Decade on Restoration, with the goal of preventing, halting, and reversing the degradation of ecosystems worldwide. In 2021 with this global initiative underway, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) with significant funding dedicated to restoration activity throughout the United States, created the America the Beautiful Initiative, and signed Executive Order 14008 which 'tackles the climate crisis at home and abroad'. The size of these environmental issues is enormous. Throughout the country, it is estimated that over 15,000 of the 90,000 dams are considered high-hazard potential, there are half a million abandoned mines in need of remediation, and we are losing upwards of 80,000 acres of coastal wetlands per year. Regions throughout the country are leading the response to their most pertinent environmental issues by making restoration a part of the solution. For example, the Chesapeake Bay's phosphorus and nitrogen loads have been modestly reduced in the last decade, largely due to estuarine management. While these regional and state efforts are commendable, in order to meet the scale of the problems at hand, broader efforts supported by federal agencies will be needed. BIL funds can be used to address these issues, and represent a continued commitment to existing ecosystem restoration initiatives as well as an increased investment across the board.

These BIL funds are broken down into different categories of objectives and priorities and are spread across various government agencies. Priorities include endangered species, aquatic ecosystems, clean water, and storm protection including flood risk. Governing agencies responsible for distributing funds include the Environmental Protection Agency (EPA), US Fish and Wildlife Service (USFWS), Army Corps of Engineers (USACE), and National Oceanographic and Atmospheric Administration (NOAA).

Restoration not only provides benefits to the environment, but also our economy. It is estimated that for every dollar spent on restoring degraded lands, we gain between \$7 and \$30 in economic benefits including food production, water quality, recreation, etc. Recent research established a causal link between wetland loss and flood damages, estimating that the US incurred \$600 million per year in flooding damages from the roughly 800,000 acres of wetlands lost between 2001 and 2016. On the flip side, intact marshlands prevented over \$8 million in damages from Hurricane Sandy. As storms are projected to increase in strength and frequency, resilient coastlines and storm protection will become increasingly important infrastructure. The BIL codifies nature as infrastructure; this act recognizes restoration and green infrastructure as outcomes that achieve cost-saving benefits to the United States.

Simply put, we need innovative solutions for speed.

While this investment commitment is critical, the regulatory and procurement barriers that are in place make spending this money in the time allotted difficult. In 2016, the United Nations Environmental Programme met to develop a 'short-term' implementation plan for ecosystem restoration. This expedited process had a timeline of 3-6 years to project completion. The 5-year investment timeline BIL presents seems daunting in the face of traditional restoration schedules.

EPIC's Restoration Economy Center recommends the following:

- Implement 'Pay for Success' strategies coupled with clear success metrics
- Utilize public-private partnerships (P3)



Influx of Available Funding

Low funding levels have historically been a barrier to proper restoration. With the onslaught of natural disasters, species extinction, and failing infrastructure, new funding for American infrastructure and restoration is long overdue.

A recent analysis of the size and impact of the restoration economy estimates that restoration generates \$9.5 billion in economic output

annually in the United States. Restoration is an economic asset, not a sunk cost.

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The BIL provides roughly \$9.8 billion that can be spent on restoration initiatives over the course of the next five years. This money will be distributed across federal agencies, and will then trickle down through a variety of processes to implement projects throughout the United States. This funding represents both a recommitment (with large funding increases) to existing programs, and the development of new ones.

At a high level, these funds span different project categories, many of which are interdisciplinary:

1. **General Restoration:** the BIL does not list project specifics
2. **Endangered Species Conservation:** projects focusing on ESA protected species
3. **Disaster Preparedness:** building resiliency and preparedness of communities in the face of natural disasters, with specific funding allocated to storm risk management, flood prevention and coastal community management.
4. **Water Quality, Watersheds, & Aquatic Ecosystems:** projects focused on restoring water quality and aquatic ecosystem health
5. **Fish Passage & Dam Removal:** projects dedicated to removing dams and/or creating safe fish passage
6. **Estuary Restoration:** projects focused on estuarine systems
7. **Navigable Waterways:** please see the Army Corps of Engineers definition.
8. **Revegetation:** projects focused on process of replanting vegetation and rebuilding the soil of disturbed land
9. **Mined Land Restoration:** projects focused on modifying land that has been mined to ecologically functional or economically usable state.

While much of this funding is applicable country wide, some of these programs specify geographic locations in which the funds need to be spent. For example, much of the NOAA funding is limited to coastal communities, with a focus on community resiliency and coastal protection. Learn more about the availability and accessibility of BIL funding here.

These project categories span six different funding pathways, most of which will likely use some form of a Request for Proposal (RFP) process, although most are currently unspecified. Each federal agency will have oversight in how these funds are distributed and the criteria by which they fund proposals.

1. US Forest Service through a joint effort of the Department of Interior and Department of Agriculture
2. Bureau of Reclamation through the Department of Interior
3. NOAA
4. USACE
5. USFWS through the Department of Interior
6. EPA

Figure 1. Breakdown of eligible restoration funding by agency and type

	General Restoration	Endangered Species	Disaster Preparedness	Flooding	Coastal Community Management/Restoration	Storm Risk Management	Water Quality/Aquatic Ecosystems/Watersheds	Fish Passage/Dam Removal	Estuary Restoration	Navigable Waterways	Revegetation	Mined Lands Restoration
US Forest Service (Dept. of Interior and Dept. of Agriculture)	\$500 million						\$80 million				\$200 million	\$200 million
Bureau of Reclamation (Dept of Interior)		\$50 million					\$350 million					
NOAA					\$1.238 billion (\$400 million dedicated to fish passage, \$77 million dedicated to estuary restoration)							
ACOE			\$3.001 billion (with an additional 3.308 billion specifically for flooding)				2.015 billion			\$160 million		
USFWS (Dept of Interior)	\$162 million							\$200 million				
EPA	\$1.702 billion								\$15 million			

Note: Certain buckets of funding do specify geographic location and eligible receiving organizations

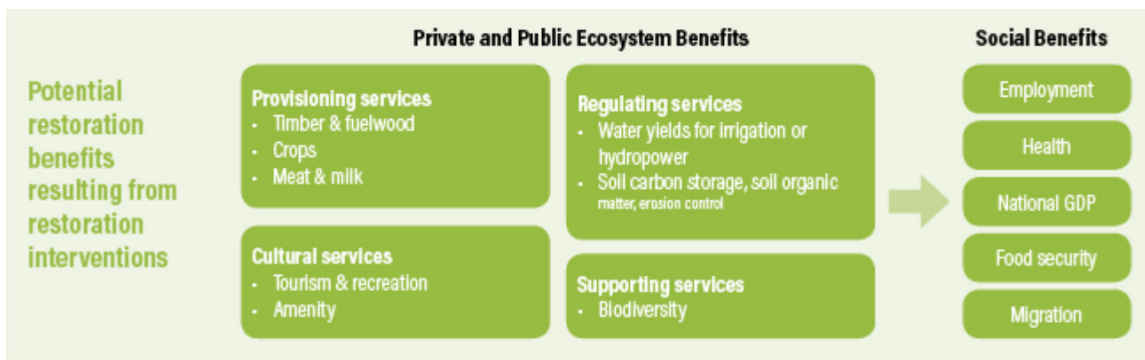


The Need for Agility

As previously stated, BIL funds must be spent within the next five years. Traditional procurement methods risk slowing down project implementation to a point that threatens success. Our planet is deteriorating at a rate that can't wait for drawn out permitting processes. Over the last decade, we have experienced a rapid increase in natural disasters, species extinction, and infrastructure failure in the face of the climate crisis. We simply do not have time to waste.

The BIL presents a funding influx that alleviates a major barrier to restoration efforts; however, the long and complicated permitting processes typical of federal agencies will slow down results. Funding for restoration has the potential to do good, both for our environment and economy. Restoration lessens storm damage, protects endangered species, sequesters carbon, and increases water quality. Not only that, but it can provide jobs to communities in need, create spaces for recreation, and build healthier communities.

Figure 2. Co-benefits of ecological restoration projects



Source: WRI authors, based on restoration opportunities defined in IUCN and WRI 2014 and ecosystem service typology defined in Millennium Ecosystem Assessment 2005.



Image credit: World Resources Institute

Currently, most government procurement works by issuing separate contracts to designers, builders, maintenance, etc. This puts the government employees in the role of project managers, where they hire out and oversee all contractors, using a significant amount of staff time ensuring projects move forward. We know that these under-staffed and under resourced departments are struggling to keep up with this work, which often causes delays.

Not only are these government agencies overworked, there is a lack of clear success measures which creates additional barriers to permitting. There is a plethora of published restoration metrics, including the Society for Ecological Restoration and the USGS Database of Biodiversity and Habitat Quantification Tools. The issue is the implementation of these tools. Two meta analyses¹ of restoration projects found extreme inconsistency in the methodology and goals of determining project success, especially co-benefits like socioeconomic and health aspects.

1 Ruiz-Jaen et al. (2005) and Wortley et al. (2013)

Additionally, once funded, there are no guarantees that projects will succeed with traditional procurement methods. Current systems fund projects throughout their development rather than upon delivery of successful outcomes. This increases risk to taxpayers and keeps the majority of the responsibility for project implementation and success on the government.

The culmination of these issues is exacerbated by the government silos that exist between agencies and states. Individual agencies have control over procurement methods, timelines, etc. For example, there is variation in funding match requirements among federal agencies. For certain programs, federal dollars cannot be matched with other federal dollars, but in other instances it can. This can create confusion for partners. That being said, this independence in oversight could provide more flexibility in the opportunity to innovate, breaking down existing timeline and success barriers.

The time it takes from project proposal to implementation is far too long, and does not guarantee an efficient use of funds. These barriers will prevent a timely response to the BIL, as well as the climate, water, and endangered species crises.





Innovative Solutions for Speed

Understandably, government agencies tend to be risk-averse – Congress, governors, and state legislators tend to punish failure rather than looking at it as experience from which to learn. Unfortunately, this can translate into slow execution of public programs or a resistance to trying new approaches. Pay for Success contracts, as well as the other methods explained below help overcome this delay, fostering innovation.

Pay for Success, also known as Pay for Performance, contracting is one procurement tool that could be used to speed the deployment of BIL funding for restoration. Pay for Success is a way of binding government agencies and providers together to improve service delivery around a problem whose solution has identifiable metrics. For example, in 2016, the State of California issued an RFP for a large-scale coastal marsh habitat creation project and awarded \$12 million in contracts to carry out the work. The contract was structured such that the contractors would be paid as they successfully delivered on various milestones established by the state around the success of restoration, with 50 percent of payments reserved for after construction is complete and ecological success criteria are met. This approach helped California avoid costs and risks associated with using multiple contracts to pay up front before evidence of successes.

Not only do these contracts guarantee success and reduce the risk to taxpayers, there is evidence that Pay for Success procurement takes significantly less time. In Florida, traditional procurement has taken up to three phases funded over 16 years, compared to a new Pay for Success contract that is shaving off a decade from the process. Not only are they faster, they can also be cheaper.

The BIL has the proper foundation for adopting Pay for Success: funds have been delegated, outcome categories are clearly defined, and emphasis is put on high impact projects. It is not a large leap to transition from the current processes to Pay for Success contracting.

RFPs in Maryland show pay for success contracts costing one third of past procurement.

Figure 3. Differences between traditional procurement and Pay for Success contracting

Traditional Procurement	Pay for Success
Government pays as the project progresses, no need to hold onto large sums of money	Government needs to retain a large portion of project funds until project is complete
Project success is not guaranteed	Project success is guaranteed
Applicant does not need to fund the project up-front	Applicant needs to fund the project until complete
Project cost based on time, labor, resources, etc.	Project cost based on an outcome unit price (i.e. acre of stream)

Public private partnerships (P3s) have demonstrated their effectiveness in simultaneously achieving environmental and public health co-benefits while driving economies of scale and cost efficiencies, streamlining implementation, and enabling the public entity to transfer as much of the financial and performance risk to the private partner as desired. P3s exist in many forms, but most involve a negotiated mix of financial and project management roles and responsibilities and stronger incentives to achieve outcomes. Traditional methods might take a public agency anywhere from 60 to 180 days to pay contractor invoices – a delay that can be crippling.

For example, in 2015 Corvias entered a partnership with Prince George’s County, Maryland “to improve the stormwater infrastructure and make a commitment to impact the local economy through ‘local’ targeted disadvantaged subcontractor development and utilization.” This partnership, aptly named the Clean Water Partnership, contracts with local businesses to bolster economic development and produce significant improvement to stormwater infrastructure. To date, this partnership has exceeded its goals in terms of socioeconomic class participation, county resident participation, and local business participation.

Coupling Pay for Success contracting with P3s creates a particularly efficient model. Private corporations take the brunt of the risk, are agile compared to government agencies, and can leverage private funds to front project costs.

How does this work in practice? North Carolina has been spearheading Pay for Success restoration contracts throughout the state. Private or public entities come to the Division of Mitigation Services (DMS) with restoration projects that have met success measures and pay for that restoration work through a crediting system. This shifts the financial risk to corporations and creates faster project timelines.

Another innovative strategy could be the implementation of regulatory sandboxes, which create a controlled pocket existing outside of government permitting regulation, licensing, and/or approvals in order to encourage testing of new products and ideas that benefit consumers. Sandboxes aim to clear regulatory barriers that prevent new approaches from being tested and pave the way for cheaper, more effective products to reach the market. Sandboxes fund cohorts of projects, all with a short timeline and clear exit strategy. At the end of the project period, successful projects move through the traditional processes and failed projects end.

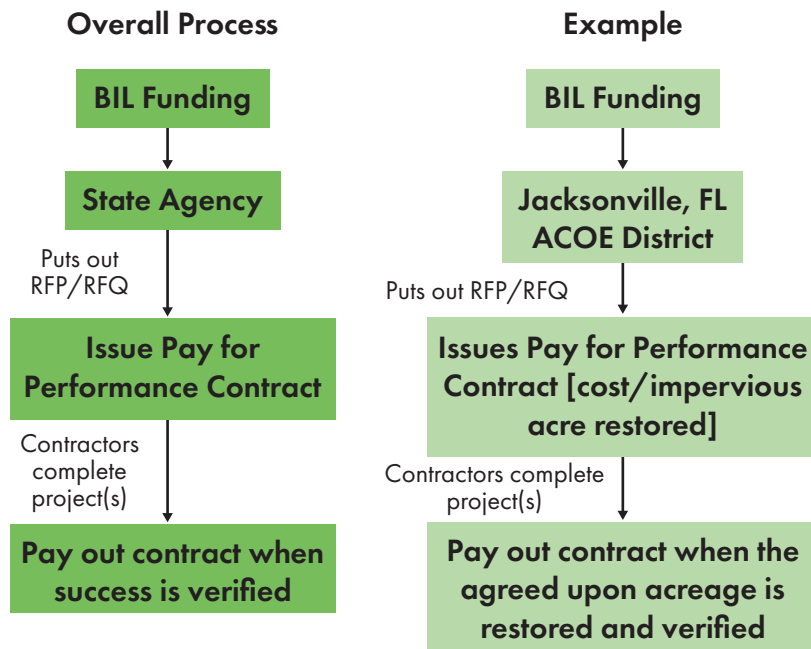
Applying the sandbox approach to restoration would create a pathway to circumvent the lengthy processes currently in place. This would create a safe space for innovation, whereby new technologies could be tested and brought to the restoration space sooner.



An Example

Some agencies and project types are set up better for Pay for Success contracting than others. For example, many USACE projects like creating safe fish passage, or restoring streams have clear outcomes that can be quantified. On the other end of this spectrum, projects like mine remediation that have high levels of contracting liability may not be the right fit. USACE already does issue Pay for Success contracts in many districts throughout the country, but use across districts is not consistent.

Figure 4. Flow of money for Pay for Success contracts.



For example, the Biden-Harris administration has allocated over \$1 billion of BIL funding to Everglades restoration aimed at reducing flood risk, removing nutrient pollution, and building more resilient communities. Projects like this could utilize nutrient reduction credit systems. USACE already has experience with credit determination and quantification methods; these practices are used throughout the Corps when permitting mitigation banks. As the Everglades USACE district, Jacksonville USACE would issue a full-delivery RFP for a nutrient reduction project, outlining the price per credit and amount of credits desired. Restoration firms would then bid on the RFP, with a winner chosen to execute the work. They would receive payment (the cost per acre already determined) upon completion and verification of success.



Conclusion

Traditional government procurement approaches will not be sufficient to spend these funds at the speed and scale of this act- and the climate, clean water and endangered species crises- necessitate. We need innovative strategies like Pay for Success contracting and P3s to deliver these outcomes. The BIL presents a funding influx that alleviates a major barrier to restoration efforts; however, the long and complicated permitting processes typical of federal agencies will slow down results. Funding for restoration has the potential to do good, both for our environment and economy.

The funding from the Infrastructure Investment and Jobs Act (IIJA) is an important step towards creating a restoration economy. It's time to rework our procurement barriers in place.

