



Building Resilient Infrastructure and Communities Natural Infrastructure Projects for FY 2021

September 18, 2023

Fiscal Year 2023 Report to Congress



**Homeland
Security**

Federal Emergency Management Agency

Message from the FEMA Administrator

September 18, 2023

I am pleased to present “Building Resilient Infrastructure and Communities Natural Infrastructure Projects for FY 2021,” prepared by the Federal Emergency Management Agency (FEMA).



This document was compiled pursuant to direction in the Joint Explanatory Statement, accompanying the Fiscal Year (FY) 2023 Department of Homeland Security Appropriations Act (P.L. 117-328).

The Building Resilient Infrastructure and Communities (BRIC) grant program makes federal funds available to states, U.S. territories, federally recognized tribal governments, and local governments for hazard mitigation activities. FY 2021 was the second year of the BRIC program; this report contains a data comparison between FY 2020 and FY 2021. In FY 2021, FEMA made available \$1 billion in the Notice of Funding Opportunity for BRIC. The BRIC program prioritizes nature-based solutions and incentivizes the “incorporation of nature-based solutions” by including this as a program priority and a Technical Evaluation Criteria.

The following are highlights of the FY 2021 BRIC Program:

- FEMA received over \$4.1 billion in requests to fund projects, including over \$1.3 billion for projects that incorporated nature-based solutions.
- FEMA selected all four subapplications that included nature-based solutions submitted in the state and territory allocations and Tribal Set-Aside funding categories.
- In total, 53 projects were selected in the BRIC National Competition; 31 of the 53 projects, or 58 percent, of selected projects included nature-based solutions.
- From FY 2020 to FY 2021, selected subapplications with nature-based solutions increased from 29 selected subapplications to 35 selected subapplications.

Pursuant to congressional requirements, this report is being provided to the following members of Congress:

The Honorable David Joyce
Chairman, House Appropriations Subcommittee on Homeland Security

The Honorable Henry Cuellar
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable Chris Murphy
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Katie Britt

Ranking Member, Senate Appropriations Subcommittee on Homeland Security

Inquiries relating to this report may be directed to FEMA's Office of External Affairs,
Congressional Affairs Division at (202) 646-4500.

Sincerely,

A handwritten signature in cursive script that reads "Deanne Criswell".

Deanne Criswell
Administrator
Federal Emergency Management Agency

Executive Summary

Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. § 5133) authorizes the BRIC program to make federal funds available to states, U.S. territories, federally recognized tribal governments, and local governments for pre-disaster hazard mitigation activities. It does so with a recognition of the growing hazards associated with climate change and of the need for natural hazard risk mitigation activities that promote climate adaptation and resilience with respect to those hazards. These include extreme weather events that have been observed and that are expected to increase in intensity and frequency in the future.

This report includes subapplications (numbers and dollars) that were submitted to BRIC’s three funding categories: the state or territory allocation, the Tribal Set-Aside, and the annual BRIC National Competition. The report is focused on subapplications to the BRIC Program for the FY 2021 funding cycle that included nature-based solutions.¹

For the purposes of this report, FEMA uses the term “nature-based solution” to determine if a subapplication is a “natural infrastructure project” as articulated by Congress.

The following are comparison highlights between FY 2020 and FY 2021. Additional comparisons are included in Section IV Analysis.

- In FY 2020, \$500 million was available and, in FY 2021, \$1 billion was available. In both years, the subapplications submitted for BRIC funding were oversubscribed. In FY 2020, \$3.6 billion was requested and in FY 2021, \$4.1 billion was requested (**Figure 1**). Of those requests, nature-based solution projects accounted for \$1.1 billion of FY 2020 subapplications and \$1.3 billion of FY 2021 subapplications (**Figure 3**).
- In FY 2021, more subapplications with nature-based solutions were selected than in FY 2020, 35² and 29 respectively; and not selected or ineligible nature-based solutions subapplications decreased by about 50 percent (**Figure 2**).
- Submitted and selected subapplications including nature-based solutions increased between FY 2020 and FY 2021. This increase is most significant in selected subapplications, increasing from \$312 million in FY 2020 to \$525 million in FY 2021 selections (**Figure 3**).
- In both years, selected projects with nature-based solutions accounted for over half of the available BRIC dollars.
- The most requested project types were consistent in FY 2020 and FY 2021: floodplain restoration projects and acquisitions. In FY 2021, greenways and rainwater harvesting were also popular nature-based solutions project types (**Table 4**).

¹ FEMA defines “nature-based solutions” as sustainable planning, design, environmental management, and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience. Source: <https://www.fema.gov/emergency-managers/risk-management/nature-based-solutions>.

² Project counts reflect initial selection and may not reflect subapplications that were withdrawn after selection.



Building Resilient Infrastructure and Communities Natural Infrastructure Projects for FY 2021

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I. Legislative Language

This document was compiled pursuant to the legislative language set forth in the Joint Explanatory Statement, accompanying the Fiscal Year (FY) 2023 Department of Homeland Security Appropriations Act (P.L. 117-328) includes the following direction:

Natural Infrastructure Activities.—Within 180 days of the date of enactment of this Act, FEMA shall provide the Committees a report on the number, total requested funding, and percentage of fiscal year 2021 BRIC applications for natural infrastructure projects, and a comparison of these numbers to the fiscal year 2020 grant cycle. The report shall be disaggregated by successful and unsuccessful applications and describe the types of natural infrastructure activities funded.

II. Background

For FY 2021, the Building Resilient Infrastructure and Communities (BRIC) Program priorities were to incentivize natural hazard risk reduction activities that mitigate risk to public infrastructure and disadvantaged communities, as referenced in Executive Order 14008, Tackling the Climate Crisis at Home and Abroad; mitigate risk to one or more community lifelines; incorporate nature-based solutions; enhance climate resilience and adaptation; and to increase funding to applicants that facilitate the adoption and enforcement of the latest published editions of building codes. To reinforce the priority of mitigating risks to disadvantaged communities, BRIC has been a program covered by the [Justice40 Initiative](#) since 2021.

The program's \$1 billion in funding was available through three categories: 1) the State/Territory Allocation, 2) the Tribal Set-Aside, and 3) the National Competition. The Federal Emergency Management Agency (FEMA) received a total of 789 subapplications, from 56 states and territories and 36 federally recognized tribal governments, accounting for over \$4 billion in requested federal cost share.³ Of this amount, over \$1.3 billion in federal cost share was requested for projects incorporating nature-based solutions.

The FY 2021 BRIC application period opened on September 30, 2021, and closed on January 28, 2022. On May 19, 2022, FEMA announced the BRIC initial selections for the Tribal Set-Aside and the State and Territory Allocations. On August 1, 2022, FEMA announced the 53 mitigation projects selected from the subapplications submitted to the National Competition.⁴ Nature-based solutions were included in over \$525 million of the total dollars in selected projects, or 53 percent of selections overall.

Common factors of unsuccessful subapplications in any category include incomplete scope of work, unclear conformance with program requirements, insufficient documentation, application inconsistencies, cost estimate issues, incorrect benefit-cost analysis approach, issues with recurrence intervals, and unclear basis for estimating damages.

State/Territory Allocation and Tribal Set-Aside

In FY 2021, the State/Territory Allocation and the Tribal Set-Aside made \$1 million available to each state, territory, the District of Columbia, or a federally recognized tribal government for:

- Capability- and capacity-building activities, including project scoping, building codes, partnerships, mitigation planning (up to \$500,000), and other planning-related activities;
- Mitigation projects; and,
- 10 percent of any subapplication for information dissemination.

³ FEMA amended one FY 2021 Tribe's management costs in FY 2021.

⁴ FEMA selected 53 subapplications in FY 2021; one of which withdrew.

Most requests in this funding category were for capability- and capacity-building, mitigation planning, or information dissemination. Nature-based solutions are typically construction based, and because the State/Territory Allocation and Tribal Set-Aside are able to fund activities that are not exclusively construction of mitigation projects, it is typical that nature-based solutions are not frequently requested in these funding categories. However, four requests did include nature-based solutions and all four of these subapplications were selected. See the “Section III, Data Report” section of this report for more details.

National Competition

The National Competition’s intent is to competitively fund mitigation projects that meet the program priorities each fiscal year, with awards up to \$50 million per project. In FY 2021, \$919 million of BRIC funds were made available within the National Competition, representing approximately 92 percent of the total BRIC funding. The remainder of the BRIC funding was covered by the State/Territory Allocation and Tribal Set-Aside. Subapplications submitted to the National Competition that passed the program’s eligibility and completeness review were then scored with technical evaluation criteria and qualitative evaluation criteria.

To incentivize elements valued by FEMA, a set of technical evaluation criteria was used to evaluate eligible subapplications. Nature-based solutions was one of 8 technical evaluation criteria and continued to be a technical evaluation criterion in FY 2022. Eligible subapplications that included nature-based solutions were awarded points in the National Competition. Of the selections, 58 percent in the National Competition (or 31 out of 53 subapplications) included nature-based solutions. See the next section, Data Report, for more details.

III. Data Report

Table 1 details dollars available per funding category and dollars, count, and status of subapplications received.

Table 1: FY 2021 BRIC Subapplications Overall						
FY 2021 BRIC Subapplications Overall		Subapplications Submitted		Subapplications Selected		% Selected (by Subapplication Count)
Funding Category	Total Amount Available (\$)	Dollars (\$)	Count	Dollars (\$)	Count	
State/Territory Allocation + Tribal Set-Aside	\$81,000,000	\$120,941,459	324	\$60,000,678	255	79%
National Competition	\$919,000,000	\$3,725,962,445	393	\$795,897,692	53	13%
Management Costs	Variable, up to 10% per subapplication	\$313,816,610	72	\$138,199,816	63	88%
Total	\$1,000,000,000	\$4,160,720,514	789	\$994,098,186⁵	371	47%

Table 2 details subapplications per funding category, dollars, count, and status.

Table 2: FY 2021 BRIC Subapplications with Nature-Based Solutions						
FY 2021 BRIC Subapplications with Nature-Based Solutions	Submitted Subapplications with Nature-Based Solutions		Selected Subapplications with Nature-Based Solutions		Not Selected or Ineligible Subapplications with Nature-Based Solutions	
	Dollars (\$)	Count	Dollars (\$)	Count	Dollars (\$)	Count
State/Territory Allocation + Tribal Set-Aside	\$8,176,663	4	\$8,176,663	4	\$0	0
National Competition	\$1,318,712,294	113	\$516,921,511	31	\$801,790,783	82
Total	\$1,326,888,957	117	\$525,098,174	35	\$801,790,783	82

⁵ By program design, the program selects subapplications up to the amount available, but without going over. This allows for a small amount of funds to be left over to cover additional funding needs for example from appeals.

Table 3 displays selected nature-based solutions subapplications as a percentage of all selected BRIC subapplications and as a percentage of all submitted nature-based solutions subapplications, by both dollars requested and subapplication count.

Table 3: Selected FY 2021 BRIC Subapplications with Nature-Based Solutions				
FY 2021 Selected BRIC Subapplications with Nature-Based Solutions	Nature-Based Solutions Subapplications Selected Compared to all Subapplications Selected		Nature-Based Solutions Subapplications Selected Compared to Nature-Based Solutions Subapplications Submitted	
	% of Dollars (\$)	% of Subapplications	% of Dollars (\$)	% of Subapplications
State/Territory Allocation + Tribal Set-Aside	14%	2%	100%	100%
National Competition	65%	58%	39%	27%

Table 4 describes the types of nature-based solutions strategies incorporated in funded nature-based solutions projects, including those for living shoreline projects. This information is presented in a matrix because many projects incorporate multiple types of nature-based solutions, ranging from vegetation management to floodplain restoration.

Type of Nature-Based Solutions	Table 4: FY 2021 BRIC Selected Subapplications with Nature-Based Solutions																																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	TOTALS			
Acquisition			x					x		x			x																						x			x	6
Aquifer Storage and Recovery															x																							1	
Bioretention system																												x										1	
Coastal Wetlands																		x	x																			2	
Dunes												x								x																		2	
Fire Mitigation through vegetation management																					x															x		2	
Floodplain restoration	x	x	x		x	x	x				x		x			x		x				x	x			x	x			x			x	x				17	
Green Streets							x																															2	
Greenways					x				x	x			x											x														6	
Habitat restoration/enhancements																x																						1	
Living shoreline											x									x																		2	
Low Impact Development (LID)																																				x		1	
Permeable Pavement								x																	x													3	
Rain Gardens																													x									1	
Rainwater Harvesting																		x					x				x	x										4	
Tree Canopy																																							1
Tree Trenches																																							1
Urban Greenspace																										x													2
Vegetated Swales				x				x																															3
Waterfront Parks												x																											1
Wetland Restoration and Protection																																							3

IV. Analysis

As in FY 2020, FY 2021 BRIC’s State/Territory Allocation and Tribal Set-Aside funding categories prioritized capability- and capacity-building activities. However, eligible projects of all types submitted through this category were 100 percent successful, including those with nature-based solutions components. Of the four nature-based solutions projects submitted through this category, all were selected.

The highly competitive National Competition selected approximately 13 percent of all subapplications for projects of all types. It is notable that 58 percent of selected subapplications included nature-based solutions, or 31 of the 53 selections.

As demonstrated in Table 4, floodplain restoration, acquisition, greenways, and rainwater harvesting are the most frequently incorporated nature-based solutions in selected projects in FY 2021.

This analysis compares FY 2021 data to the FY 2020 data detailed in the *Building Resilient Infrastructure and Communities Natural Infrastructure Projects for FY 2020* Report to Congress. Conclusions based on only 2 years of data is limited. Additional data from future fiscal years of the BRIC program will strengthen the observation of trends.

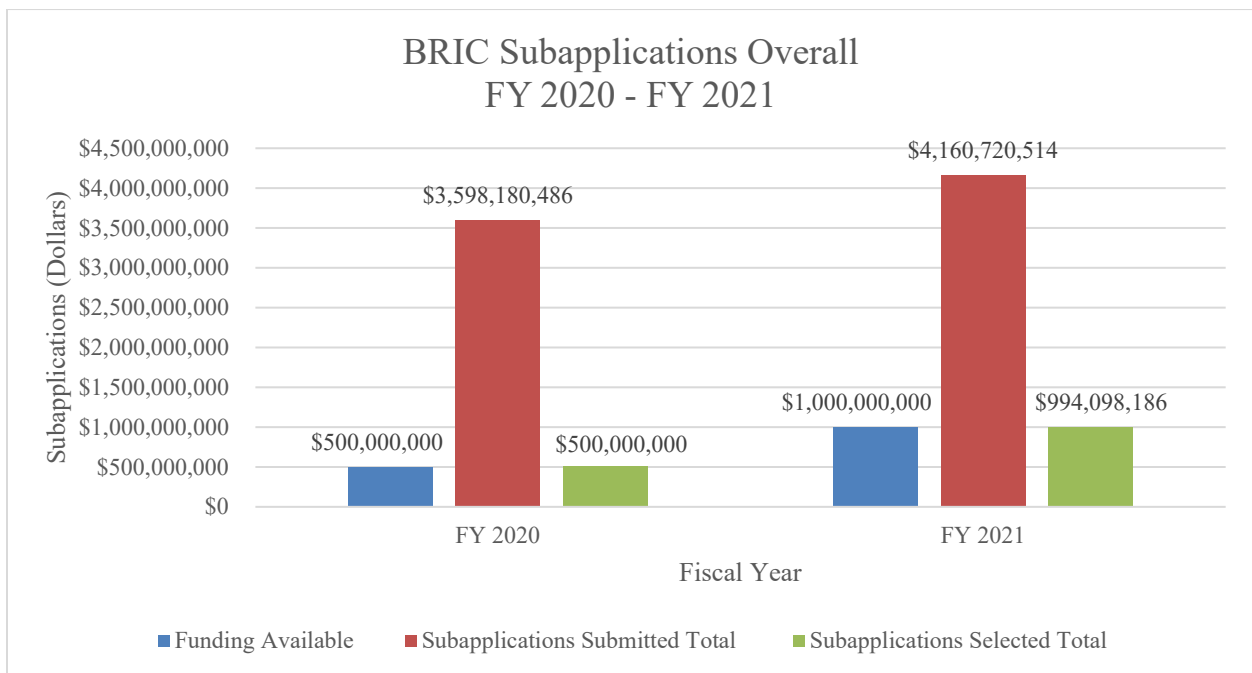


Figure 1

Figure 1 details the federal share dollars available, subapplications submitted, and subapplications selected for all funding categories combined.

BRIC Subapplications with Nature-Based Solutions in FY 2020 and FY 2021

The following compares FY 2020 and FY 2021 subapplications with nature-based solutions in the whole program, versus the three funding categories: State/Territory Allocation, Tribal Set-Aside, and National Competition.

Between FY 2020 and FY 2021, subapplications including nature-based solutions decreased from 186 to 117. However, more subapplications and a larger federal cost share of subapplications with nature-based solutions were selected. Nearly 15 percent of nature-based solutions subapplications submitted in FY 2020 were selected, while about 30 percent of nature-based solutions subapplications submitted in FY 2021 were selected (Figure 2).

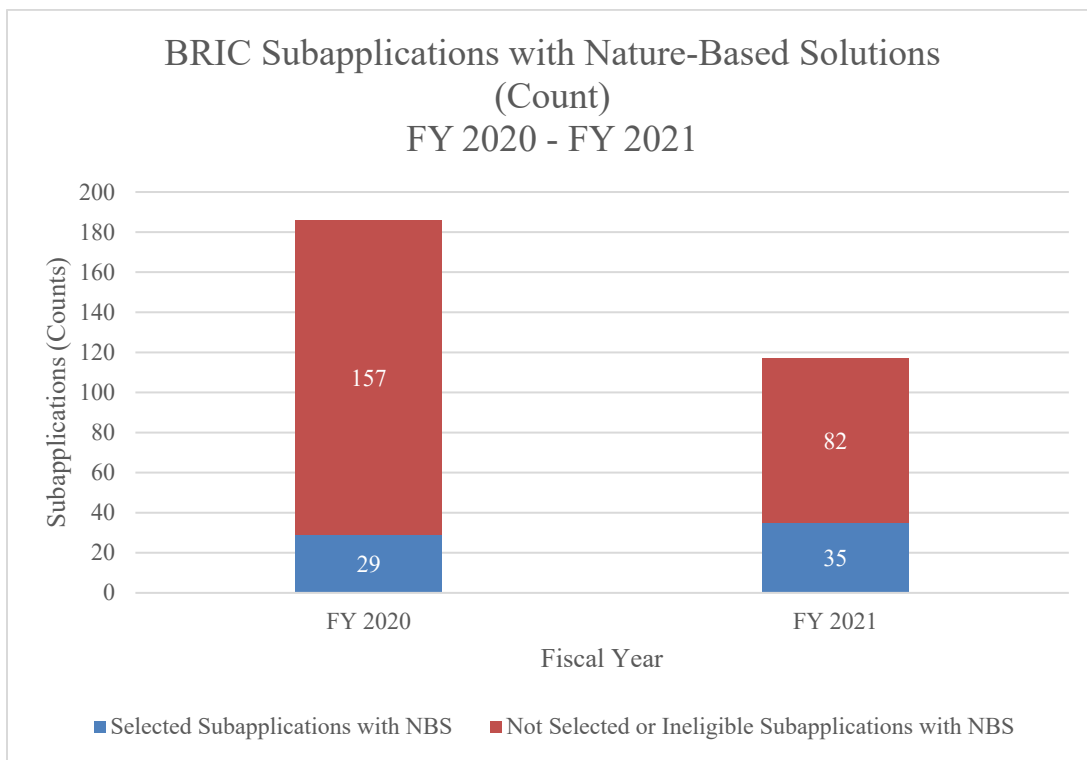


Figure 2

Figure 2 details the number of selected and not selected or ineligible subapplications with nature-based solutions. Further analysis of not selected or ineligible projects may be conducted in future cycles to determine if additional support could increase eligible projects.

Additionally, more federal cost share funds were both requested and ultimately selected in FY 2021 (Figure 3). However, fewer total nature-based solutions subapplications were submitted in FY 2021 than in FY 2020. This demonstrates that the average size, as demonstrated through federal cost share, of nature-based solutions subapplications increased in FY 2021. The average federal cost share requested for nature-based solutions projects submitted increased from \$5,888,505 in FY 2020 to \$11,340,495 in FY 2021. The average federal cost share requested for

nature-based solutions projects that were selected increased from \$10,748,673 in FY 2020 to \$15,002,805 in FY 2021.

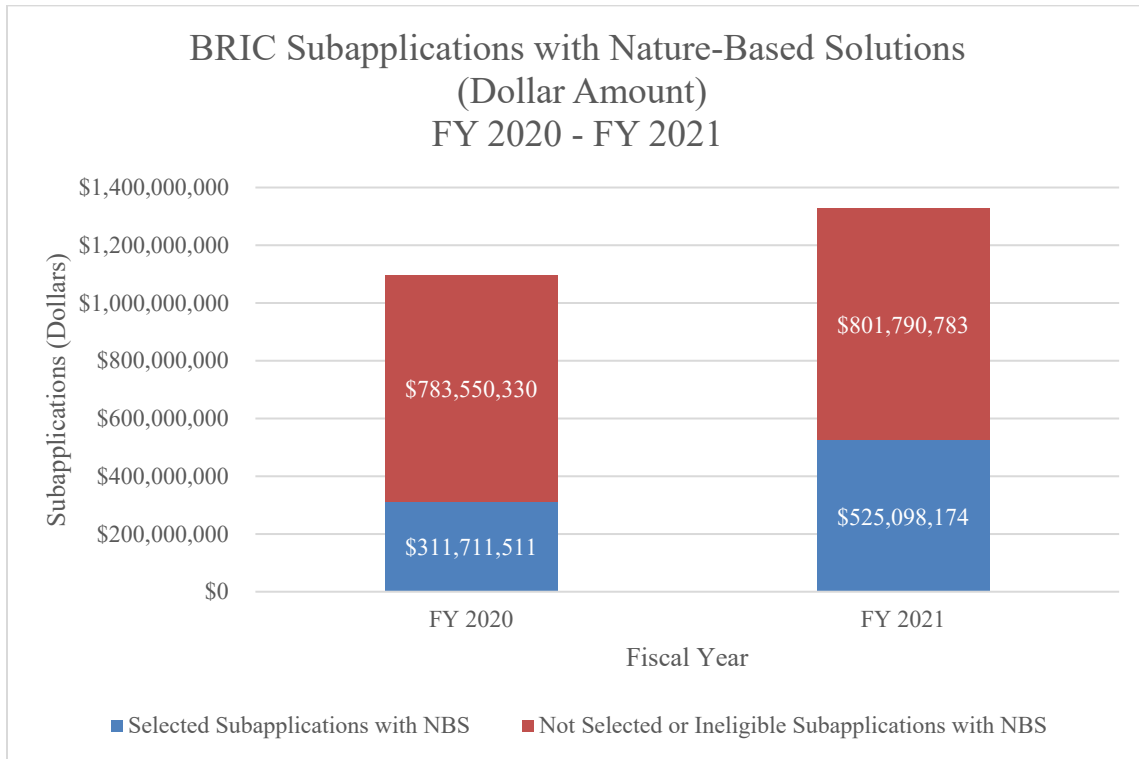


Figure 3

Figure 3 details federal cost share requested in selected and not selected or ineligible subapplications with nature-based solutions.

V. Conclusion

In FY 2021, the BRIC grant program funded 35 mitigation projects including nature-based solutions, accounting for more than \$525 million or 53 percent of total funds. Conclusions drawn from comparing BRIC nature-based solutions in FY 2020 to FY 2021 data are limited due to the sample size of only 2 years; points included in the analysis are observational. The reliability and utility of trend analysis in BRIC natural infrastructure projects Congressional Reports will strengthen as future BRIC fiscal year data is added and analyzed.

VI. Appendix: List of Abbreviations

Abbreviation	Definition
BRIC	Building Resilient Infrastructure and Communities
FEMA	Federal Emergency Management Agency
FY	Fiscal Year