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H.R. 1317 Coastal Community Adaptation Act

Improving the Resilience of Coastal Communities

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Final Report

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Executive Summary

America is a nation bordered by oceans. Stretching along a total length of 12,383 miles (US Census, 2010), the US coastal region houses 126 million people and generates 45% of the nation's economic output (NOAA, 2015).

In a nation that is dependent on its coastal regions to the extent the US is, the increased vulnerability of these regions to changes in the climate is sharply felt. Coastal communities have suffered in the wake of extreme weather events, such as Hurricane Michael, Hurricane Harvey, and Hurricane Sandy, disasters of an increased severity that has been attributed to climate change. Stronger winds, enabled by warming oceans and higher sea levels have combined to create the perfect storm of wind and wave action which puts communities that were previously assumed safe at risk, and exposes those historically in the line of fire to significantly greater risk.

Addressing the threat faced by America's coastal populations and the built environment they depend on is paramount, and demands immediate legislative action. One legislative response to the pressing need to insulate the US coastal heartland that has emerged is the Coastal Communities Adaptation Act (CCAA) which puts at its central mission to "improve the resilience of the built and natural environment to natural disasters and climate change" (US Congress, 2019).

Structured in the CCAA are the 5 following actionable provisions designed to tackle the risk coastal communities face from climate change.

1) Research Programs focuses on updating building codes
2) "Built to Last" Stamp generates funding
3) Prize competitions innovate novel adaptation measures
4) Information Clearing House catalog existing infrastructures
5) Coastal States Resilience Program provides federal funding

This report is the result of a management simulation during which a program design was created to outline how the CCAA could be enacted if the bill were to pass both chambers of Congress. The Coastal States Resilience Program is the most substantial of the bills 5 provisions, and thus receives the most attention throughout this management simulation regarding the particulars necessary for its implementation. The Coastal States Resilience Program will award capitalization grants to each coastal state for the purpose of establishing a resilience fund to protect their communities against climate change enhanced natural disasters and sea-level rise. Per the program design, the Coastal States Resilience Program would be implemented under the National Oceanic and Atmospheric Administration (NOAA),

primarily under the auspices of the Office for Coastal Management (OCM), requiring the hiring of 35 new staff members to effectively implement the program.

This report outlines how coastal states that enter into a grant agreement will be able to delegate funds to subordinate levels of government municipalities or agency levels, leaving the direction of their use to decision-makers closer to the ground (US Congress, 2019). The annual budget for the Coastal States Resilience Program will be $351 million, based on FEMA's 2019 annual budget for disaster relief because the CCAA also addresses natural disasters, but in the mitigation and prevention stage as opposed to the relief and recovery stage. As such, the disaster relief budget was determined to be a reasonable reference.

Federal funding from the larger budget would consist of a baseline amount of $2 million per coastal state, with additional funds distributed based on combining a Vulnerability Index and a Population & Coastline Index. The adoption of these indices would seek to make the most efficient use of funding by serving the largest number of people in at risk communities with the greatest need for assistance. Through the implementation of the Coastal States Resilience Program, coastal communities would be able to update building codes, construct new resilient infrastructure and improve the physical protection of the coastal communities in a large scale, allowing them to thrive in the face of intensifying natural disasters and climate change.

The Coastal States Resilience Program and the larger Coastal Community Adaptation Act are crucial in addressing coastal climate risk by encouraging proactive action by spending money on resilience, which will offset greater costs for coastal states associated with disaster recovery in the long run.

Issue

Challenges and Solutions for Coastal Communities

Coastal communities in the United States have been suffering in the wake of extreme weather events like Hurricane Sandy, Hurricane Harvey, and Hurricane Irma - disasters whose severity has been linked to climate change. It has become imperative to increase the resilience of US coastal communities and associated infrastructure to protect them against future climate change and natural disasters.

The Outer Banks, North Carolina, is the site of the nation's first national seashore. Known for its long stretches of beautiful beaches and hospitable people, the Outer Banks is a prime vacation destination. However, communities in the Outer Banks are already facing the adverse effects of climate change as shown in Figure 1. Sea level rise and coastal storms are damaging homes, disrupting transportation, and eroding beaches (Seekamp, Jurjonas, & Bitsura-Meszaros, 2019). Such natural disasters, however, are only part of the issue facing coastal communities. Sea level rise, mainly caused by climate change, can be even more threatening. Projections show that by the end of the century, sea levels could rise by approximately 39 inches, flooding homes in this community. In Dare County, the Outer Banks region's largest jurisdiction, nearly $1.4 billion in property damage has been estimated as a result of this potential sea-level rise. (Montgomery, 2014).

Figure 1. A fight against the sea-level rise in Outer Banks

Another town in the Outer Banks called Nags Head is already holding community workshops to help residents better understand how their community will be affected by climate change and to brainstorm solutions to potential coastal hazards (Spiegler, White, Dorton, & Whitehead, 2019). Though members of the Outer Banks community are being proactive and developing resilience measures, additional funding and research are necessary to preserve the beauty, history, and culture of the Outer Banks.

The Need for Legislation

The Outer Banks is only one example of countless coastal communities in the United States whose future is uncertain. Coasts are risk-prone and face inundation of floodwater, sea-level rise, erosion and storms. The 30 coastal states in the United States are home to 126 million people and provide $8.3 trillion worth of goods of services annually as well as 56 million jobs (NOAA, 2015). That equates to 40% of the national population and 46% of the national gross domestic product (NOAA, 2015). The combination of more intense natural disasters and accelerating sea-level rise is undoubtedly a huge threat to the coastal communities. Hurricane Sandy in 2012, for example, caused $79 billion in damages, while Hurricane Katrina in 2005 cost approximately $161 billion (NOAA, n.d.). Climate change leads to sea-level rise and the erosion of beaches and wetlands. Scientists generally agree that in the coming decades, climate change will worsen and coastal storms will intensify, putting coastal communities at higher risk.

Many state governments have passed legislation or implemented programs designed to increase community resilience in the face of climate change (North Carolina Department of Environmental Quality, 2019) (Governor's Office of Planning and Research State of California, 2019). There is a serious need for federal financial support to provide preventative aid to coastal communities who are projected to grapple with, or already grappling with, challenges of rising seas to their infrastructure and property. Bill H.R.1317, or the Coastal Communities Adaptation Act, is designed in the spirit of these state initiatives to provide an overarching national framework for developing coastal resilience in response to climate change.

Legislation

The Purpose of the Bill

The Coastal States Adaptation Act was introduced by Congressman Harley Rouda, Representative of California's 48th Congressional District, in February 2019. It aims to improve the resilience of the coastal states' built and natural environment against natural disasters and climate change by providing coastal states with funding, research, and technical support. The CCAA requires intergovernmental-agency cooperation and federal government oversight, which will enhance the efforts of the bill. To prepare coastal communities for these upcoming environmental challenges, the Coastal Community Adaptation Act was designed with five key provisions:

- Update building codes on coastal resilience through the Research Program
- Create "Built to Last Stamp" to generate funding
- Hold Prize Competitions to spark innovative adaptation measures
- Catalog existing protective infrastructure within cities
- Carry a systematic funding source and implement the Coastal States Resilience Program

Responsibility for implementing the required programs will largely fall on the Office for Coastal Management (OCM) within the National Oceanic and Atmospheric Administration (NOAA), which is chosen as the administrator for the programs. All of the provisions, shown in Figure 2, are based on existing federal agency frameworks.

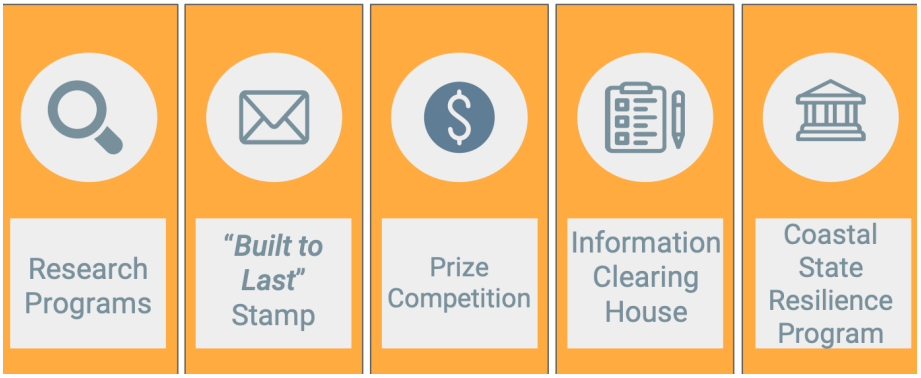

Figure 2. Outline of CCAA provisions

Overview of Provisions

Research Program

The Research Program is an inter-agency effort among the National Science Foundation, the Department of Housing and Urban Development and the National Institute of Standards and Technology. The goal is primarily to updating building codes in coastal states to create an infrastructure that can withstand the impact of natural disasters. Because this program will be implemented utilizing existing federal departments, it will not require the hiring of new staff members or consultants; the group will simply expand its scope to more specifically address mitigation of natural disasters and climate change for all structures, in addition to buildings. Following the research and development innovations, HUD will be expected to include storm preparedness and mitigation measures into the building codes for HUD-manufactured units (US Congress, 2019).

As the lead agency, the National Institute for Standards and Technology will be in charge of incorporating the new aspects of the scope of study and ensuring that at least one member of HUD is included in the interagency working group. This is expected to be completed within the first year of the CCAA being enacted. The Secretary of HUD will appoint a key member of the staff to act on behalf of their department in the interagency working group.

Case Study: Hurricane Michael

Natural Disasters wreak havoc on coastal communities, destroying homes and businesses. With the proper investment, communities can better withstand high-speed winds and storm surges imposed upon them. Hurricane Michael touched ground in Mexico Beach, Florida on October 10th, 2018, causing an estimated $15 billion in damage and killing 45 people (Masters, 2018). Observed wind speeds were as high as 155 miles per hour and the storm surge in Mexico Beach was nearly 16 feet (Masters, 2018). Mexico Beach is a typical small beach-front community, home to more than 1,000 residents and many visitors (World Population Review, n.d.). As shown in Figure 3, the quaint town was completely decimated by Hurricane Michael.

Figure 3. Mexico Beach, FL after Hurricane Michael

Improved building codes are particularly effective at preserving structures in the face of natural disasters, as shown in Figure 4. The home shown below made it through Hurricane Michael relatively unscathed because the owners built it to more stringent standards than current codes required; it was raised up on pilings and had blow-away walls designed for flooding, which allows storm surges to wash safely below the building without damaging the structure's support (Carr, 2018). If every home in Mexico Beach had been required to build to those more resilient standards, then the photos of the aftermath of the Hurricane Michael would be very different. This demonstrates that although making investments in coastal resilience may have a high initial cost, doing so saves money and lives in the long term.

Figure 4. A lone house survived Hurricane Michael.

Short-Term Provisions

Short-term provisions include the "Built to Last" Stamp, the Prize Competition, and the Information Clearing House. The "Built to Last" Stamp, which is a new funding stream proposed in the bill, will be implemented through the United States Postal Service's (USPS) existing semipostal program (Figure 5). No more than five stamp designs can be issued in ten years, and a stamp can only be sold for a maximum of two years (USPS, 2019). The funds raised from the sale of the stamp will be placed into the Built to Last Stamp Fund, under the Department of Treasury. Funds will then be available to the Secretary of Commerce and NOAA to finance both the catalog of research and the Prize Competition awardees. The CCAA streamlines the funding raised from the Built to Last Stamp towards the Prize Competitions and Information Clearing House until the funds run out (US Congress, 2019). Therefore, funding for these programs is dependent on the revenue raised by the Built to Last Stamp.

Figure 5. Examples of USPS Semi Postal stamps 1998-2019

The administrative responsibilities of the Built to Last Stamp provision will be shared between the USPS and NOAA: USPS will distribute the stamp and NOAA will have administrative control over the Built to Last Stamp Fund. The Built to Last Stamp provision has the potential to raise significant funding for the Prize Competitions and Information Clearing House, but the timeline is limited: it is mandated by law that the stamp can only be circulated for a maximum of two years (USPS, 2019). NOAA will hire a consultant to design the stamp, and then the stamp design will be approved by USPS. After the Built to Last Stamp raises funds, prize competitions will be implemented by section 24 of the Stevenson-Wydler Technology Innovation Act of 1980. Contractors will be hired 9 months into the first year to begin designing and executing the Prize Competition program.

Meanwhile, the CCAA requires the Secretary of Commerce to identify and evaluate all research activities conducted by Federal agencies related to coastal risk reduction and resilience measures, including natural features, nature-based features, and nonstructural measures. Applicable research will be cataloged in the Information Clearing House, managed by NOAA. Contractors will be hired 9 months into the first year to begin cataloging the research.

Coastal States Resilience Program

The Coastal States Resilience Program functions independently of the other four provisions. Although the first four provisions make valuable contributions to the CCAA's objective of improving coastal resilience, the Coastal States Resilience program is the most substantial provision in the bill. The program is a long-term funding mechanism for coastal states to enhance resilience in the face of natural disasters and coastal storms; it has no time limitation and is provided by the federal government to all willing coastal states. As a result, the majority of the program design and this report focuses on the final provision. It presents the opportunity to create a permanent program that will be utilized for decades to come.

"NOAA shall award capitalization grants to each coastal state for the purpose of establishing a community resilience revolving fund."
— U.S. Congress

Through this provision, NOAA "shall award capitalization grants to each coastal state for the purpose of establishing a community resilience revolving fund" (US Congress, 2019). Coastal states are defined as any US state or territory that borders the Atlantic Ocean, Pacific Ocean, Arctic Ocean, Gulf of Mexico, Long Island Sound, or one of the Great Lakes. Once a coastal state has entered into the capitalization grant agreement with NOAA, the state is able to distribute the monies from the revolving fund to a municipality or state agency (US Congress, 2019). This requirement is modeled after the capitalization grants program administered by the Environmental Protection Agency (EPA) through the 1987 amendments to the Clean Water Act, designed to improve drinking water infrastructure (EPA, n.d.). The CCAA dictates that each coastal state will contribute the equivalent of 20% of the total federal investment to its state resilience fund. States are also required to spend the grant funding within a year of receiving it and submit annual reports to NOAA, in accordance with accepted government accounting standards. The Coastal States Resilience Program will be implemented by NOAA, who will work on distributing funds, collecting data, and evaluating the program through a performance measurement system (further discussed below).

Steps Toward Solutions

The Coastal States Resilience Program will require continuous oversight once implemented, to adapt to changing community needs over time and to continue to manage the success of the program. The Office of Coastal Management will be responsible for the implementation and oversight of this program. This office will draft a one-year plan to set milestones for the new program and to organize successful implementation through actionable, smaller steps. This first year plan also describes how the overall budget will be allocated and distributed.

The Funding

Each year, a total of $351 million in grant money will be distributed among the thirty coastal states in quarterly payments (FEMA, 2019). The funding distribution starts in the third quarter of the first year. The last two distributions for the first round of funding will be allocated in the first and second quarters of the second year. During the third quarter of the first fiscal year, each state will receive initial funding of $2 million dollars. The remaining $291 million will be divided among the next three quarters (*see Appendix 1.3*) based on the combination of the two indices.

$351 Million
Available annually
to coastal states

Indices Determining Funding Distribution

The Office of Coastal Management is responsible for implementing the Coastal States Resilience Program through its existing grant management framework. The agency will establish an internal team to perform assessments for the initial distribution of capitalization grants, manage grant agreements with states, review annual reports submitted by states, and provide technical assistance. To better distribute the funds to each coastal state, the Office of Coastal Management will utilize a combination of two indices: **(1) Population & Coastline Need Index and (2) Vulnerable Populations Index.** The combined use of these two indices ensures the funds will be distributed in the most reasonable manner (Figure 6).

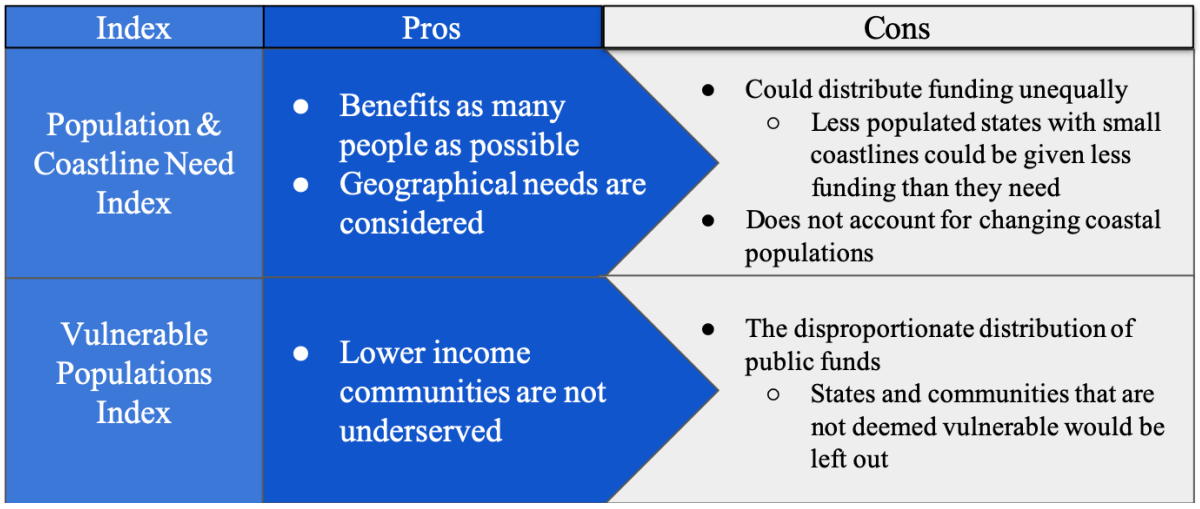

Figure 6. Comparison of Program Options

Staffing Plan

35 new staff
Hires in total

The Office of Coastal Management contains six existing divisions that all engage in coastal management (*see Appendix 3)* and implement the Coastal States Resilience Program. Each division within the OCM has an existing Division Chief; there will be no hiring changes at this level or above. Within each division are a variety of programs that manage a different function of making the coastline more resilient. It is within these programs that there will be hiring needs.

Out of the six divisions in the OCM, the Policy, Planning, and Communication Division will hire the most people. Three full-time General Schedule staff will be hired and grouped into three categories: Stakeholder & Communication Manager, Vulnerability Guidelines Manager, and Grant Manager (see Figure 7). The Stakeholder & Communication Manager will work within the existing Communications Program, the Vulnerability Guidelines Manager will be hired in the existing Policy Program and finally, the Grant Manager will be hired within the existing Planning & Performance Management Program. Under these three managers, six staff members per program will work full time to cover each of the six regions of coastal states designated within the Office for Coastal Management (NOAA, 2019). This will account for a total of twenty-one new staff members within the Policy, Planning, and Communications Division.

The remaining 5 divisions consist of:

1) Stewardship Division
    a) This division has 3 sub programs
    b) There will be two new staff members hired per program
2) Learning Services Division
    a) This division has 2 sub programs

   b) There will be two new staff members hired per program
3) Science and Geospatial Service Division
   a) This division has 2 sub programs
   b) There will be two new staff members hired per program
4) Business Operations Division
   a) This division has 2 sub programs
   b) This division will not require new staff to manage the program
5) Integrated Information Products & Services Division
   a) This division has 2 sub programs
   b) This division will not require new staff to manage the program

In addition to the 21 people hired in the Policy, Planning & Communication division there will be 14 new staff hired in various capacities among the other 5 divisions. Across the 6 divisions within the Office for Coastal Management a total of 35 new staff members will be hired.

In order to budget for these new staff members, each new hire will be paid a salary commensurable with their experience. Assuming fringe benefits are 35% of the employee's salary, the total personal services cost is approximately $2.3 million *(see Appendix 1.1)*. Other than the employee's salary, facilities funds will be used to support rent, communications, utilities, and general operating costs. The office will also need to hire contractors for the Research Program and Short-term provisions. In total, the other costs will sum to $920,000 (*see Appendix 1.2*).

Reporting and Feedback System

To better evaluate the efficiency of the Coastal States Resilience Program and how well it helps coastal communities adapt to rising seas and flooding, the general staff, Program Managers, Division Chiefs, and the Director of the Office of Coastal Management will build a system more preemptive and responsive to the resilience needs of coastal communities (Figure 7).

General Staff delivers monthly reports to Program Managers on monthly meetings to update information and refine the program as it progresses through the results. Program Managers summarize the quarterly performance in memo format to Division Chiefs on the quarterly meetings, who will give feedback to Program Managers on how the interaction between state-level authorities can be improved. Division Chiefs will relay a summary of performance information in a strategic annual report to the Director of the Office of Coastal Management to describe metrics that are met, and tasks need to be completed.

Figure 7. Iterative feedback process with General Staff, Program Managers, Division Chiefs, and Director

First-Year Milestones

The master calendar (*see Appendix 2*) contains a schedule of actions and goals that need to be completed and achieved in the first calendar year, as well as delineation of the organizational units responsible for specific tasks. Contractors will be hired to manage the "Built to Last" Stamp, Prize Competitions, and Information Clearing House since these are short-term provisions.

The first-year plan of the CCAA is divided into four quarters. Quarter one and quarter two will be dedicated to hiring, finalizing vulnerability guidelines, calculating indices, and signing agreements between the federal government and coastal states. The funding distribution will start in quarter three. It presents key assignments for internal managers and tracks the progress of the overall project. The first-year calendar does not include a complete distribution of funds, but it does illustrate two-quarters of funding distribution. The funds are allocated quarterly, starting in the third quarter. The last two allocations will occur in the first and second quarters of the second calendar year.

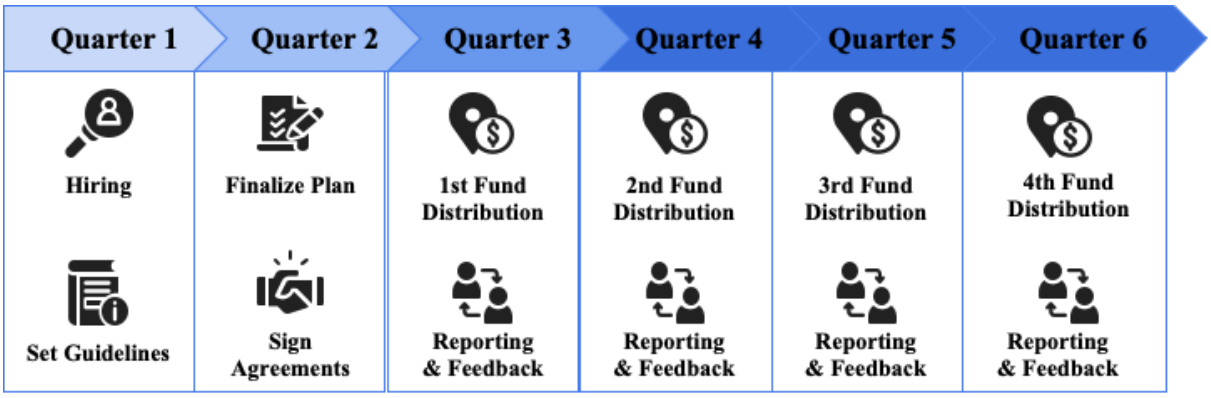

Figure 8. Coastal States Resilience Program Timeline

Conclusion

The CCAA was designed to implement physical and behavioral methods of improving coastal communities' resilience against natural disasters and climate change. Severe natural disasters, such as Hurricane Michael, have caused billions of dollars in economic damage and taken the lives of many. As natural disasters destroy cities and sea level rises swallows up the coast, coastal communities have to take action and prepare in advance to protect properties and people.

To develop the resilience measures of coastal communities in the United States, the CCAA has proposed five key provisions to assist the coastal states in enhancing resilience: the Research Program conducts research to design more resilient coastal building codes; the "Built to Last" Stamp will generate funding for two years to support the implementation of the Prize Competition and Information Clearing House; the most important and long term provision is the Coastal States Resilience Program, which will provide funding and mitigation resources to the thirty coastal states.

Without taking additional measures to protect the United States coastal communities, important communities like the Outer Banks in North Carolina, will be damaged and possibly destroyed as they continue to be threatened by storms and coastal erosion. Stronger measures need to be taken to make these communities as resilient as the single house that survived Hurricane Michael blew through Mexico Beach, Florida. These communities represent American lives and livelihoods that need help to survive. Government action is crucial; national funding and resources will provide the support that cannot be achieved at the state level alone. Strategic implementation of the Coastal Communities Adaptation Act will ensure that the communities and people living along the coast will be strong enough to last into the future as they fight natural disasters and climate change.

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Appendix 1: Budget Plan

Appendix 1.1 Personal Services Budget

			Q1		Q2		Q3		Q4		
Personal Services	**Total FTE**	**Annualized Salary**	**# of FTE**	**Cost**	**# of FTE**	**Cost**	**# of FTE**	**Cost**	**# of FTE**	**Cost**	**Total Cost**
Salaries + Fringe Benefits (35%)											
-Stewardship Division Staff	3	$82,649.70	0	$0.00	0	$0.00	1.5	$123,974.55	1.5	$123,974.55	$247,949.10
-Learning Services Division Staff	1	$82,649.70	0	$0.00	0	$0.00	0	$0.00	1	$82,649.70	$82,649.70
-Science & Geospatial Services Division Staff	1	$100,924.65	0	$0.00	0	$0.00	0	$0.00	1	$100,924.65	$100,924.65
-Policy, Planning and Communication Division Staff											
--Communications Program											
---Stakeholder & Communication Manager	1	$122,122.35	0.25	$30,530.59	0.25	$30,530.59	0.25	$30,530.59	0.25	$30,530.59	$122,122.35
---Other Staff	6	$82,649.70	1.5	$123,974.55	1.5	$123,974.55	1.5	$123,974.55	1.5	$123,974.55	$495,898.20
--Policy Program											
---Vulnerability Guidelines Manager	1	$122,122.35	0.25	$30,530.59	0.25	$30,530.59	0.25	$30,530.59	0.25	$30,530.59	$122,122.35
---Other Staff	6	$82,649.70	1.5	$123,974.55	1.5	$123,974.55	1.5	$123,974.55	1.5	$123,974.55	$495,898.20
--Planning & Performance Management Program											
---Grant Manager	1	$122,122.35	0.25	$30,530.59	0.25	$30,530.59	0.25	$30,530.59	0.25	$30,530.59	$122,122.35
---Other Staff	6	$82,649.70	1.5	$123,974.55	1.5	$123,974.55	1.5	$123,974.55	1.5	$123,974.55	$495,898.20
Total Personal Services	26	$87,907.12	5.25	$463,515.41	5.25	$463,515.41	6.75	$587,489.96	8.75	$771,064.31	**$2,285,585.10**

Appendix 1.2 Other Than Personal Services Budget

				Q1		Q2		Q3		Q4		
OTPS	**Total Units**	**Rate ($/hr)**	**Unit Price**	**Units**	**Cost**	**Units**	**Cost**	**Units**	**Cost**	**Units**	**Cost**	**Total Cost**
Facilities	1		$541,650.28	0.25	$135,412.57	0.25	$135,412.57	0.25	$135,412.57	0.25	$135,412.57	$541,650.28
Supplies and Materials	1		$91,172.02	0.25	$22,793.01	0.25	$22,793.01	0.25	$22,793.01	0.25	$22,793.01	$91,172.02
Travel	30		$941.00	0	$0.00	0	$0.00	15	$14,115.00	15	$14,115.00	$28,230.00
Contracting												
-Stamp & Prize Competition	1	$397.08	$794,160.00	0	$0.00	0	$0.00	0	$0.00	0.25	$198,540.00	$198,540.00
-Cataloging	1	$120.84	$241,680.00	0	$0.00	0	$0.00	0	$0.00	0.25	$60,420.00	$60,420.00
Total OTPS					$158,205.58		$158,205.58		$172,320.58		$431,280.58	**$920,012.31**

Appendix 1.3 Grant Budget

			Q1		Q2		Q3		Q4		
Grants	**Total Units**	**Unit Price**	**Units**	**Cost**	**Units**	**Cost**	**Units**	**Cost**	**Units**	**Cost**	**Total Cost**
Coastal States	1	$351,000,000.00	0	$0.00	0	$0.00	0.17	$60,000,000.00	0.28	$97,000,000.00	$157,000,000.00
Total Grants	1	$351,000,000.00	0	$0.00	0	$0.00	0.17	$60,000,000.00	0.28	$97,000,000.00	**$157,000,000.00**

Appendix 1.4 Program Budget

	Q1	Q2	Q3	Q4	Total
Built to Last Stamp	$0.00	$0.00	$0.00	$99,270.00	$99,270.00
Prize Competition	$0.00	$0.00	$0.00	$99,270.00	$99,270.00
Cataloguing	$0.00	$0.00	$0.00	$60,420.00	$60,420.00
Grants	$0.00	$0.00	$60,000,000.00	$97,000,000.00	$157,000,000.00
Other Than Personal Services (not including contracting)	$158,205.58	$158,205.58	$172,320.58	$172,320.58	$661,052.31
Personal Services	$463,515.41	$463,515.41	$587,489.96	$771,064.31	$2,285,585.10
Total FY2020 Budget Request	$621,720.99	$621,720.99	$60,759,810.54	$98,202,344.89	**$160,205,597.41**

Appendix 2: Master Calendar

Quarter	Responsible Role	Task	1	2	3	4	5	6	7	8	9	10	11	12	13
Q1: Guidelines setting and index calculating	Division Chiefs	Post positions and get job application													
	Division Chiefs	Start interviewing applicants													
	Division Chiefs	Borrow resources from across NOAA to get the program started													
	Communication Program General Staff	Start communicating with coastal states on the bill and relevant requirements they need to reach													
	Policy Program General Staff	List performance guiding questions													
	Policy Program General Staff	Define which performance measurement metrics need to be collected													
	Policy Program General Staff	Schedule reporting plan													
	Vulnerability Guildelines Manager (VGM)	Send the draft preliminary vulnerability guidelines for review and approval													
	Policy Program General Staff	Collect census data to determine capitalization amount													
	Policy Program General Staff	Calculate results based on indexes													
	Vulnerability Guildelines Manager	Send the results to VGM for review and approval													

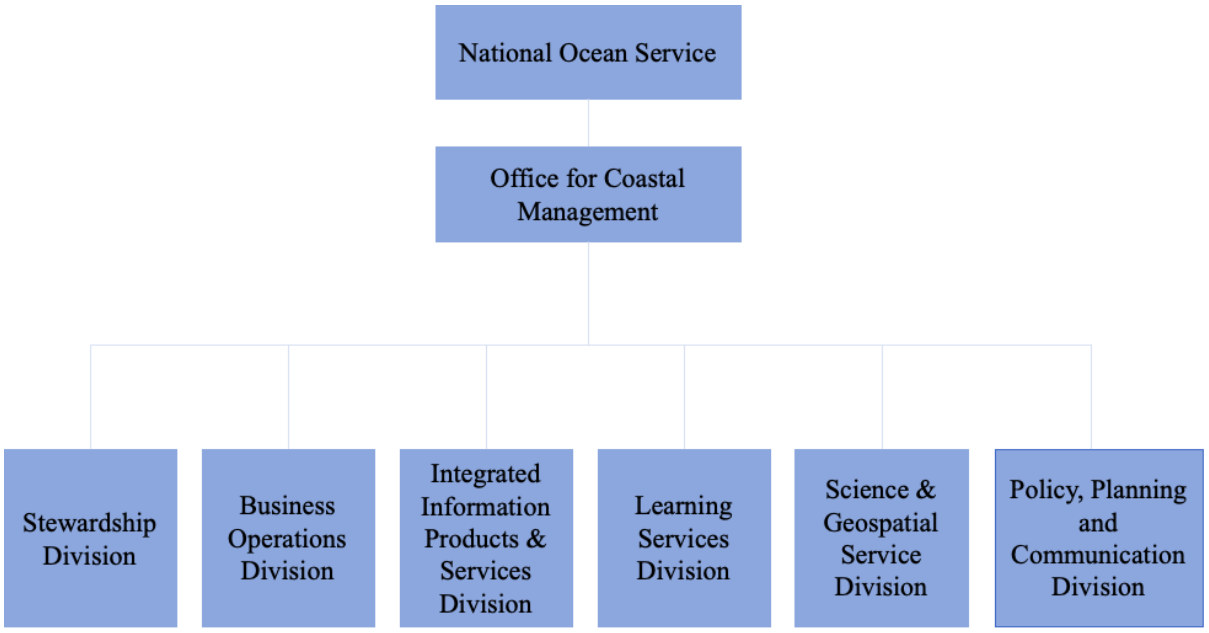
Quarter	Responsible Role	Task	14	15	16	17	18	19	20	21	22	23	24	25	26
Q2: Distribution plan preparing and agreements signing	Division Chiefs	Continue interviewing applicants to fill all the positions													
	Planning & Performance Mgmt Program General Staff	Draft a distribution plan based on results from the two indexes													
	Grant Manager	Send the plan to review and approval													
	Planning & Performance Mgmt Program General Staff	Draft a Coastal State Resilience Program agreement													
	Communication Program General Staff	Communicate with coastal states about the agreement													
	Stakeholder & Communication Manager	Sign the agreements													

Quarter	Responsible Role	Task	27	28	29	30	31	32	33	34	35	36	37	38	39
Q3: Funding distribution and reporting	Planning & Performance Mgmt Program General Staff	Allocate the first set of funds													
	Planning & Performance Mgmt Program General Staff	Collect determined and relevant data from each state													
	Planning & Performance Mgmt Program General Staff and Grant Manager	Update information and deliver monthly reports on the monthly meeting													
	Grant Manager and Division Chief	Summarize quarterly performance in a detailed quarterly report on the quarterly meeting													

Quarter	Responsible Role	Task	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Q4: Second funding distribution and annual summary	Planning & Performance Mgmt Program General Staff	Allocate the second set of funds														
	Planning & Performance Mgmt Program General Staff	Collect determined and relevant data from each state														
	Planning & Performance Mgmt Program General Staff and Grant Manager	Update information and deliver monthly reports on the monthly meeting														
	Grant Manager and Division Chief	Summarize quarterly performance in a detailed quarterly report on the quarterly meeting														
	Division Chief and Director of OCM	Relay a strategic annual report for a final review of progress														

Appendix 3: Organization Chart

NOAA Office for Coastal Management Organizational Chart



Appendix 4: Performance Management

Appendix 4.1 Performance Measurement Guiding Questions for the Five Policy Actions

CCAA Policy Actions	Goal	Guiding Questions
Research Programs	*Research coastal resilience*	Interagency Working Group: Managed by the National Science Foundation and the National Institute of Standards
Built to Last Stamp	*Generate funding*	Contracted out When will the creation of the stamp be finalized? How many post offices will the stamp reach? How much will the stamp cost? What is the estimated amount of funding? How many stamps were sold? How much money was raised?
Prize Competitions	*Foster innovative technologies*	Contracted out How many participants/applicants? How many competitions held or research programs formed? How much money will give to the programs and winners?
Catalog of Existing Coastal Resiliency Infrastructure	*Evaluate the effectiveness of all applicable coastal risk reduction and resilience measures*	Contracted out How many coastal resiliency projects are in place? Did all coastal states report to NOAA on existing projects? What are the strengths and weaknesses of each project? Do some projects work better in certain geographies? How many coastal communities are unaccounted for?
Coastal State Resilience Program	*Allow coastal communities to carry out resiliency projects*	How much money is allocated to each coastal state? Did states match the funding by 20%? How many communities have received funding from the states? What percent of coastlines are accounted for? How many contractors do states hire to complete coastal resiliency projects? Is funding enough to build projects? Did staff members report to the Program Managers within each division every week? Were quarterly meetings held to discuss high-level updates to the Directors? Which states have not created a plan to use the grant funding?

Appendix 4.2 Performance Measurement Metrics for the Coastal State Resilience Program

CCAA Policy Action	Metrics		
	Inputs (1st Year)	Outputs (2nd-4th Year)	Outcomes (5th Year +)
Coastal State Resilience Funds	Were 30 Coastal State Resilience formed? Did NOAA allocate the funds correctly using the $2M baseline funding and vulnerability index (including the remainder of the $351M)? Did each state match the total funding by 20%? Did the general staff report to Program Managers once a month? Did Program Managers report to Division Chief quarterly? Did Division Chief summarize the information to the Director and create a Strategic Annual Report?	Did the coastal states allocate the funding to contractors within the first year of receiving it? Is the money used for coastline resiliency projects (as defined by the CCAA)? Is proper allocation given to vulnerable communities? Are the resiliency projects fully funded (using external sources if necessary)? Are the resiliency projects built in a timely manner?	Do the resiliency projects protect coastal communities against sea-level rise, flooding and coastal storms? How much financial savings occur with respect to infrastructure (versus money spent on the projects)? How many lives are at less risk (e.g., review evacuation areas)? How much less coastline is eroded?