Environmental and Energy Study Institute

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Fact Sheet

How Can Revolving Loan Funds Make Our Coasts More Resilient?

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A revolving loan fund (RLF) is a self-replenishing financing mechanism that can be used to fund a variety of programs, ranging from small business development to clean water infrastructure. For example, U.S. Environmental Protection Agency (EPA) revolving loans have for years helped states fund clean-water and drinking-water infrastructure projects. Though RLFs can vary greatly depending on their mission and scope, they all share the same basic structure. RLFs start with a base level of capital, often consisting of private investment or grants from the federal government or state. This capital is then loaned out to several borrowers. Over time, as these borrowers make repayments and pay interest on their loans, the capital is replenished. When enough repayments are made, the fund uses its reaccumulated capital to issue new loans.[1]

RLFs are often employed by states, municipalities, and nonprofits as a means for property owners to overcome financial barriers to undertaking environmental improvements. The self-sustaining nature of RLFs allows them to operate for decades with little to no additional investment if designed correctly. By providing low-interest loans with long repayment periods, RLFs can help those who may not have funds available to pay for improvements up front. In this way, RLFs can be used as a tool for building community resilience to environmental hazards.

> ***Revolving loan funds (RLFs)*** *help remove the barrier of paying the full cost of the program up front. Many RLFs require borrowers to meet some level of credit-worthiness to ensure that funds are repaid and made available for the next project.[1] While these requirements might be a barrier to access for some, because RLFs replenish with loan repayments, they can help many more participants than could a grant program with the same base-level funding.*

RLFs have been used for decades for a variety of environmental programs. Two of the most well-known environmental RLFs are the U.S. EPA Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF), established by Congress in 1987 and 1996, respectively.[2,3] There are 51 of each of these RLFs in the United States, which are used by states to fund water supply improvements, wastewater facility construction, and other water-related investments. RLFs are also commonly used to fund clean energy improvements.[4] The LoanSTAR program in Texas, for example, has provided $250 million in loans to finance energy efficiency improvements in public buildings.[5] Nebraska's Dollar and Energy Savings Program has financed almost 30,000 energy efficiency projects since 1990.[6]

Many communities are beginning to feel the effects of climate change and are seeking to prepare themselves for the changes ahead. The concept of resilience, whereby communities are able to withstand and adapt to shocks such as floods, droughts, or wildfires, is informing state, local, and federal policy and programmatic decisions.[7]

Federal policy makers have signaled that revolving loan funds are a national priority. On January 1, 2021, the *Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act* (P.L. 116-284), introduced by Sens. Gary Peters (D-Mich.), Ron Johnson (R-Wisc.), Debbie Stabenow (D-Mich.), and James Lankford (R-Okla.), was passed into law. The bill would allow the Federal Emergency Management Agency (FEMA) to distribute funds to states and tribal governments to establish RLFs, with the explicit purpose of "provid[ing] hazard mitigation assistance to reduce risks from disasters and natural hazards, and other related environmental harm."

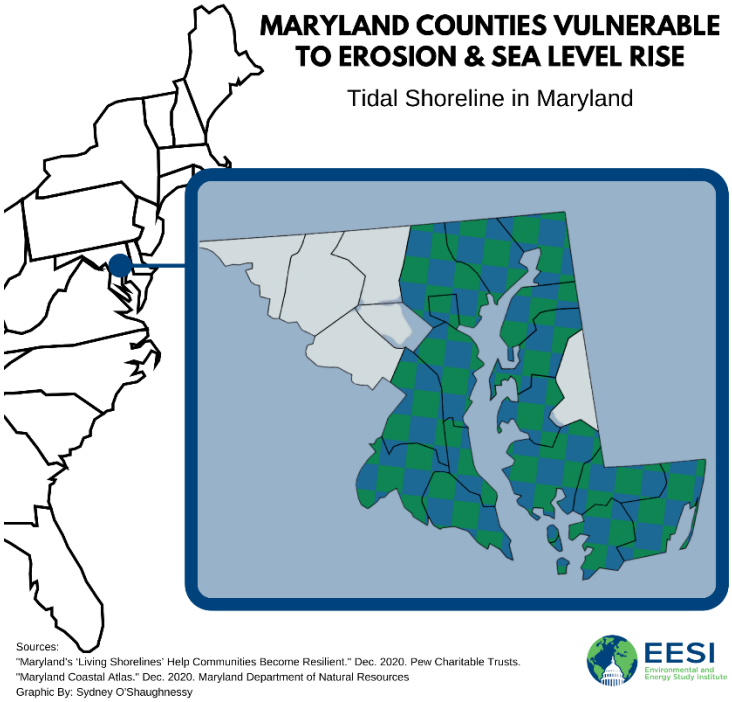
The 2020 majority staff report from the House Select Committee on the Climate Crisis also included a recommendation to create a Natural Infrastructure Resilient Communities Revolving Loan Fund. This RLF would provide funding to municipalities seeking to use natural solutions to protect themselves from the effects of climate change, such as sea level rise and the increasingly destructive storms that coastal communities face.[8]

To better understand the role RLFs can play in resilience, and the work that goes into establishing them, this fact sheet will examine two RLFs that focus on shoreline resilience. The feasibility of one is being assessed in Puget Sound, Washington, and the other has been helping communities in Maryland for several decades and has inspired many subsequent programs.

The Maryland Shore Erosion Control Revolving Loan Fund (1970)

Background

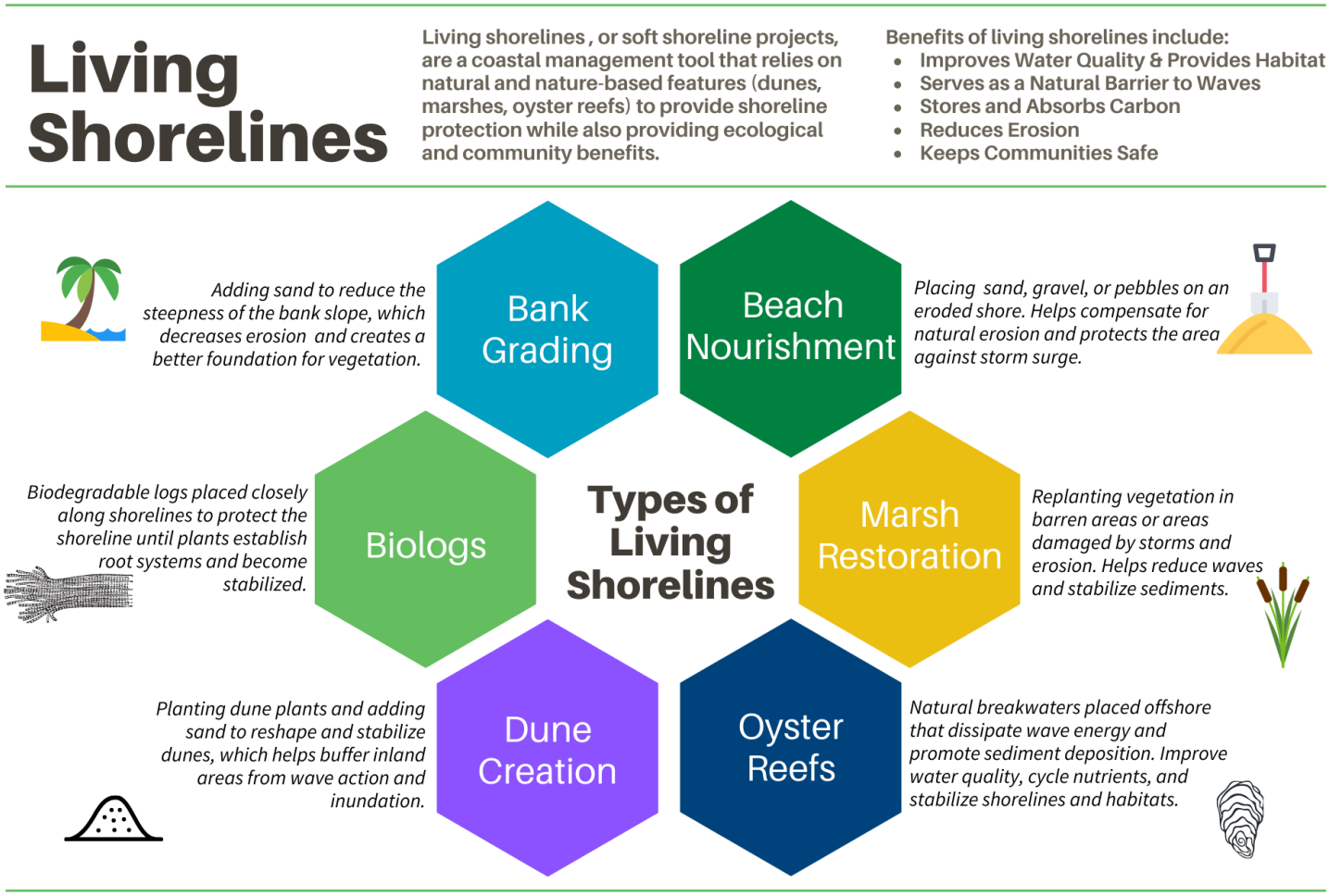
The state of Maryland has over 7,000 miles of tidal shoreline, over 85 percent of which is on private property.[9,10] About 70 percent of this shoreline is eroding.[11] Maryland is also facing the dual issue of land subsidence and sea level rise, which have combined to cause a 10-inch increase in sea level in some parts of Maryland since 1950.[12] Without global action to reduce greenhouse gas emissions, Maryland will likely experience between two to four feet of sea level rise over the course of the 21st century.[13]



In 1964, Maryland's General Assembly passed the *Shore Erosion Control (SEC) Law*, which began the process of creating a public program to protect Maryland's shorelines. The law required the program to provide financial assistance to shoreline property owners who wanted help controlling erosion,[14] and so the SEC Revolving Loan Fund, run by the Maryland Department of Natural Resources, was created in 1970.[15]

The SEC program was originally designed to fund all types of erosion prevention measures, including bulkheads—retaining walls placed at the edge of a shoreline—and other man-made forms of "hard armor."[16] However, in the 1970s and 80s, research from the U.S. Army Corps of Engineers showed that natural shoreline solutions could be just as—or more—effective in preventing erosion than hard armor for a much lower cost. Following this realization, the SEC program shifted its focus towards funding these nature-based, or "living shoreline," projects.[17]

The Maryland legislature formalized this shift in 2008, when it passed the Living Shoreline Protection Act. This Act requires shoreline property owners to use "non-structural shoreline stabilization measures," unless they can prove that these measures would not be feasible or appropriate for their property.[18] Now, the SEC revolving loan fund only provides loans for living shoreline projects.



Source:
"Restore and protect natural shorelines: Use living shoreline techniques." Dec. 2020. Massachusetts Wildlife Climate Action Tool.
Graphic By: Sydney O'Shaughnessy

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Program Details

The Shore Erosion Control Revolving Loan Fund provides zero-interest loans to shoreline property owners, including households, businesses, and municipalities, seeking to decrease shore erosion through natural solutions. Loan repayments are made over five-, 15-, or 20-year terms.[19] The program also provides technical assistance to interested participants, offering site evaluations and issue assessments.[20]

When providing loans to households, the program either works directly with individual households or with groups of multiple households. When providing loans to the latter, the program works with the local city or county government to establish a tax district encompassing the homes. The revenue from this tax district serves to repay the initial loan and can only be used to finance shore erosion control.[21]

The program today is very different from its original design. The SEC law itself has been amended 11 times since its creation in 1964.[22] One change was the implementation of a "loan formula." Designed to make the most of the RLF's base capital, this formula determines the percentage of projects that are eligible for financial assistance. When a

loan exceeds $60,000, additional project costs are financed partially through a loan and partially from the property owner. This formula is only applied to loans for businesses and households; nonprofits, service organizations, and public land projects are all fully financed regardless of program cost.[23]

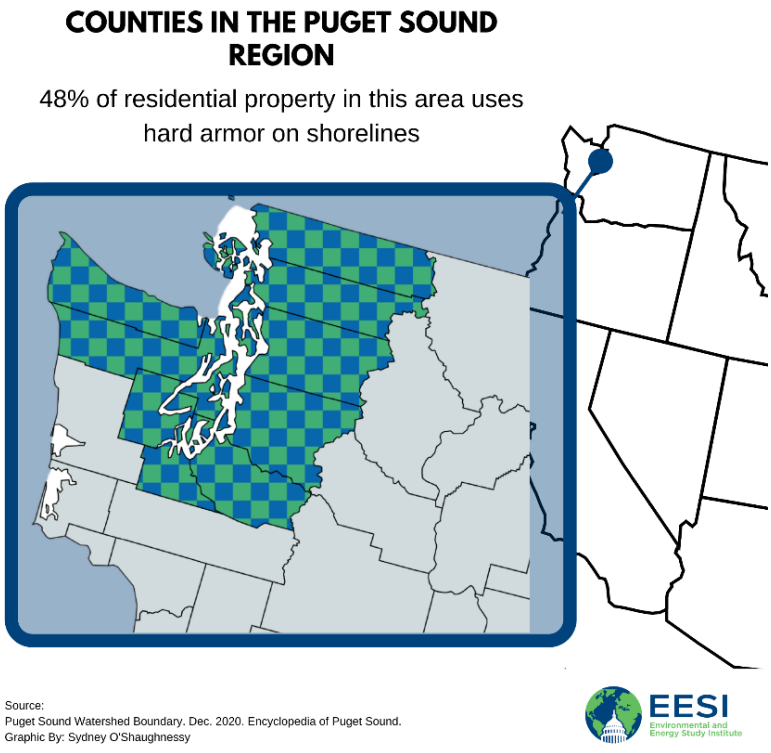
The fund was originally created with an allocation of $1.5 million, and received an additional $650,000 in the 1970s.[24] Since then, the RLF has relied solely on loan repayments to operate, which amount to about $600,000 to $700,000 each year. About 85 percent of these repayments go back into the RLF, and the rest are used to cover administrative costs.[25] The fund currently issues between 15 and 20 loans each year.[26] Since its creation 52 years ago, the fund has provided about 700 loans.[27]

A Revolving Loan Fund Feasibility Study in Puget Sound, Washington

Background

Puget Sound is an estuary in northwestern Washington state. The Puget Sound region includes 13 counties and several major cities, including Olympia and Seattle.[28] It is the second largest estuary in the United States, with 2,500 miles of shoreline.[29,30] Puget Sound supports hundreds of species of sea birds and fish, several different whale species, and over 3,000 species of invertebrates.[31]

Fifty-seven percent of Puget Sound's shoreline is part of residential properties. Of these properties, 48 percent have bulkheads or other hard armor.[32] In some areas of Puget Sound, wave action, and attendant erosion, is typically not strong enough to justify bulkheads; in fact, bulkheads can increase wave strength by providing a hard surface off of which waves can reflect, thereby accelerating erosion. Bulkheads also destroy natural habitats such as bird nesting grounds and fish nurseries. In total, 29 percent of Puget Sound's shorelines have some form of armor.[33]



Source:
Puget Sound Watershed Boundary. Dec. 2020. Encyclopedia of Puget Sound.
Graphic By: Sydney O'Shaughnessy

Though hard armor negatively impacts Puget Sound's marine ecosystem and can accelerate erosion, there is little the government can do to remove bulkheads on private property. This dilemma led to the creation of Shore Friendly, a brand and program. Shore Friendly's purpose is to encourage homeowners to replace hard armor with natural solutions to erosion, or "soft shore protection," such as gravel, logs, plants, or other proven nature-based methods of erosion control. Shore Friendly is supported by the Washington Department of Fish and Wildlife and the Washington Department of Natural Resources, with funding from the National Estuary Program.[34] Because removing bulkheads is voluntary, Shore Friendly educates residents on the harms of hard armor and helps with the permitting, design, and construction of armor removal and natural shoreline restoration if residents choose to remove the hard armor on their property.

Puget Sound property with hard armor (left) and with hard armor removed and a soft shoreline installed (right). Courtesy of: Christopher Dunagan, Puget Sound Institute / Shore Friendly Kitsap

However, as with most environmental improvements, one major barrier to removing hard armor is cost. Though nine Puget Sound counties offer property tax reductions to residents who "preserve open space" on their private properties, the initial financial burden of the project can be enough to discourage even the most interested.[35] Establishing a revolving loan fund was proposed by the Puget Sound National Estuary Program regional policy board (Ecosystem Coordination Board) as a potential solution to this issue.[36] The RLF would provide low-interest loans to households that want to make changes to their shoreline but do not have the means or are otherwise reluctant to pay the costs up front. The RLF would likely offer loans for four types of projects: armor removal, soft shore protection, structure relocation, and structure elevation.[37]

Feasibility Study

The Puget Sound Institute, Coastal Geologic Services, and Northern Economics are conducting a feasibility study to determine the efficacy of the proposed revolving loan fund.[38] This study, expected to finish in early 2021, is being supported by the Habitat Strategic Initiative (a part of the Puget Sound Partnership, a state agency leading regional efforts to restore the Puget Sound) with funding from the National Estuary Program.

The goal of this study is to analyze the market in Puget Sound for low-interest shoreline restoration loans, to gauge how many households would likely want to participate in such a loan program.[39] Researchers primarily relied on results from a 2014 survey on Puget Sound residents' interest in potential restoration projects, which asked how many thought a low-interest loan would be "somewhat" or "very" useful in carrying out these projects.[40]

The research team will use the survey results to estimate how much money would need to be loaned out over the RLF's lifespan in order to provide a loan to every household in Puget Sound that wanted one. With this figure, the team can determine how much will be needed in base-level funding to establish the RLF.[41] The study will also identify potential sources of funding. This could be a challenge because federal grant programs are typically aimed at funding habitat restoration or hazard mitigation. Few funding sources focus on both goals for projects on private property.

Potential Program Components

Armor removal and soft shore protection, two of the four projects that the proposed revolving loan fund would potentially cover, would both help to rebuild Puget Sound's marine ecosystems, as well as ensure that shorelines are naturally protected from erosion. The two other project options—structure elevation and relocation—would help address concerns among Puget Sound residents about the growing threat of coastal flooding and landslides

associated with sea level rise.[42] By providing households with low-interest loans to make these changes, an RLF would help build community resilience to these environmental hazards exacerbated by climate change.

The RLF designers are speaking with local stakeholders and working with economic models to determine how many of each type of project the program should fund initially, and how it can grow year after year. Potential project costs vary widely. Removing armor from a shoreline, for example, can cost between $10,000 and $20,000. Moving a house away from the shoreline, however, can cost upwards of $200,000. Given this range, the relative number of each type of project will greatly influence how funds are distributed. The RLF designers must also decide how much of the capital base should be raised before launching the program, i.e., whether the RLF should start with the majority of its capital base already raised, or whether the RLF should accumulate the capital base over several years after starting the program.[43]

There will also be several options to consider in regard to administering the loans, including the length of repayment periods, the interest percentage on loans, and eligibility requirements for potential borrowers. Loans would likely be administered through a not-for-profit community development financial institution, such as Craft3, which has experience running a similar RLF that finances the replacement of failing septic systems in Oregon and Washington state.[44,45]

Conclusion

Communities around the country are looking for ways to become resilient to natural disasters exacerbated by a changing climate. However, households and municipalities alike can struggle to justify the high upfront cost of resilience measures, even with the long-term benefits such measures would provide. Revolving loan funds can help mitigate this issue, accelerating the adoption of resilient practices via an affordable financing mechanism.

A key aspect of resilience is creating institutions within communities that can adapt to hazards beyond their control. RLFs themselves can thus be resilient; when designed and managed correctly, they can require very little outside support, work closely with their participants, and shift in purpose as the needs of communities evolve. As climate change increases uncertainty and instability across the United States, revolving loan funds can play an integral role in helping communities prepare for a changing planet.

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This fact sheet is available electronically (with hyperlinks and endnotes) at *www.eesi.org/papers*.

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