

**INCENTIVIZING THE USE OF LIVING SHORELINES IN VIRGINIA THROUGH A REVOLVING LOAN FUND**



Stephanie Showalter Otts, J.D., M.S.E.L.  
Terra Bowling, J.D.

June 2013

NSGLC-13-04-04

## TABLE OF CONTENTS

<b>Executive Summary</b> .....	<b>2</b>
<b>I. Introduction</b> .....	<b>3</b>
<b>II. Federally Funded RLF Programs</b> .....	<b>4</b>
A. Clean Water State Revolving Fund Program .....	4
B. Drinking Water State Revolving Funds .....	6
C. Brownfields Revolving Loan Funds .....	7
D. Energy Efficiency and Conservation Revolving Loan Funds .....	7
<b>III. Virginia RLF Programs</b> .....	<b>8</b>
A. Virginia Airports Revolving Fund .....	8
B. Virginia Dam Safety, Flood Prevention and Protection Fund .....	9
C. Virginia Fish Passage Grant and Revolving Loan Fund .....	9
D. Preservation Virginia Revolving Loan Fund .....	10
<b>IV. Other States</b> .....	<b>11</b>
A. Lake Erie Coastal Erosion Loan .....	11
B. Maryland Shore Erosion Control Construction Loan Fund .....	12
C. NC Hurricane Flood Protection and Beach Erosion Control Project Revolving Fund .....	13
<b>V. Non-governmental Revolving Loan Funds</b> .....	<b>13</b>
A. Great Lakes Revolving Fund .....	13
B. University Green Funds .....	14
<b>VI. Conclusion</b> .....	<b>14</b>

*The Middle Peninsula Planning District Commission commissioned this white paper to assist the MPPDC in its efforts to assess the feasibility of developing a living shoreline revolving loan program. This research was funded by a grant from the Virginia Coastal Zone Management Program with additional support provided by the National Sea Grant Law Center under award number NA09OAR4170200 from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of NOAA or the U.S. Department of Commerce.*



## Executive Summary

In April 2011, the Virginia Legislature directed the Virginia Marine Resource Commission, in cooperation with the Virginia Department of Conservation and Recreation and with technical assistance from the Virginia Institute of Marine Science, to “establish and implement a general permit regulation that authorizes and encourages the use of living shorelines as the preferred alternative for establishing tidal shorelines in the Commonwealth.”<sup>1</sup> The identification of living shorelines as the preferred alternative is an important policy signal which should guide permitting decisions and increase the use of living shoreline structures in the state. But, even with an improved permitting process, coastal property owners may be reluctant to install living shorelines due to the cost of such projects.

In 2013, the Middle Peninsula Planning District Commission (MPPDC) received funding to assess the feasibility of incentivizing the use of living shorelines through a revolving loan fund (RLF). Once capitalized, revolving loan funds are a self-replenishing pool of money, where principal and interest payments from old loans are used to issue new ones. Publicly funded revolving loan programs usually issue loans with more favorable terms for borrowers, such as below market interest rates, than private lenders.

To gain an understanding of existing programs that could serve as models, the MPPDC partnered with the National Sea Grant Law Center to review national and state examples of revolving loan programs to promote living shorelines or similar coastal erosion control methods. The National Sea Grant Law Center examined four federally funded revolving loan funds; seven state-funded programs, including four in the state of Virginia; and two non-governmental programs. The Law Center reviewed each program’s legal structure and financial details, such as number of loans, where publically available. Personal interviews with program managers were also conducted to obtain additional information of the operation and use of the revolving loan funds.

Revolving loan funds, when structured properly and implemented effectively, can reduce borrowing costs and provide financial assistance to borrowers who may not have access to other capital. If high borrowing costs are identified as a significant barrier to the installation of living shoreline structures in Virginia, a Living Shorelines Revolving Loan Fund could potentially help interested landowners choose living shorelines over other shoreline stabilization options. Of the RLF programs examined, Maryland’s Shore Erosion Control Construction Loan Program is the most promising model. In addition to focusing on nonstructural erosion control, which includes living shoreline-type programs, the RLF has been operating for more than 40 years with steady demand for financing assistance. In Virginia, the most promising model is the Agricultural Best Management Practices Loan Program. This RLF facilitates a significant number of projects by providing financial assistance to individual property owners and many of the eligible BMPs, like streambank stabilization, are similar to living shoreline projects.

---

<sup>1</sup> 2011 Virginia Laws Ch. 885 (S.B. 964), codified in part at VA. CODE ANN. § 28.2-104.1.

## I. Introduction

In April 2011, the Virginia Legislature directed the Virginia Marine Resource Commission, in cooperation with the Virginia Department of Conservation and Recreation and with technical assistance from the Virginia Institute of Marine Science, to “establish and implement a general permit regulation that authorizes and encourages the use of living shorelines as the preferred alternative for establishing tidal shorelines in the Commonwealth.”<sup>2</sup> As defined in Virginia, a living shoreline is “a shoreline management practice that provides erosion control and water quality benefits; protects, restores, or enhances natural shoreline habitat; and maintains coastal processes through the strategic placement of plants, stone, sand fill, and other structural and organic materials.”<sup>3</sup> In many geographic areas, living shorelines are preferable to harden structures, such as concrete seawalls, that can increase coastal erosion rates, interfere with natural shoreline processes, and eliminate habitat for estuarine species.

The identification of living shorelines as the preferred alternative is an important policy signal which should guide decision-making and increase their use in the state. But, even with an improved permitting process, coastal property owners may be reluctant to install living shorelines due to the cost of such projects. According to the Center for Coastal Resource Management, “non-structural methods cost an average \$50 - \$100 per foot, such as beach nourishment and planted marshes. Projects with sand fill and/or stone structures typically cost \$150 - \$500 per foot.”<sup>4</sup> For illustration purposes, a one-acre coastal lot if perfectly square would be a little more than 200 feet wide. The costs of a non-structural project in that scenario might range from \$10,000 - \$100,000.

Beginning in 2013, local governments in Virginia must include this new living shoreline policy and guidance prepared by VIMS regarding the appropriate selection of living shoreline management practices in their comprehensive plans. In addition to this guidance, VIMS recommends that local governments consider undertaking additional activities as part of a comprehensive approach to shoreline erosion control. One of those recommendations is that local governments “evaluate and consider cost share opportunities for construction of living shorelines.”<sup>5</sup>

One potential cost share mechanism is a revolving loan fund (RLF). Once capitalized, revolving loan funds are a self-replenishing pool of money, where principal and interest payments from old loans are used to issue new ones. Publicly funded revolving loan programs usually issue loans with more favorable terms for borrowers, such as below market interest rates, than private lenders. In 2013, the Middle Peninsula Planning District Commission (MPPDC) received funding to assess the feasibility of incentivizing the use of living shorelines through a revolving loan fund. MPPDC has over a decade of revolving loan administration experience. Currently, MPPDC administers a water quality improvement septic repair program funded by the Virginia Resource Authority and the Virginia Department of Environmental Quality. Additionally, MPPDC staff administers a housing repair revolving loan program and a small business revolving loan program.

---

<sup>2</sup> 2011 Virginia Laws Ch. 885 (S.B. 964), codified in part at VA. CODE ANN. § 28.2-104.1.

<sup>3</sup> VA. CODE ANN. § 28.2-104.1(A).

<sup>4</sup> Center for Coastal Resource Management, Living Shoreline – Frequently Asked Questions, <http://ccrm.vims.edu/livingshorelines/faq.html>.

<sup>5</sup> CENTER FOR COASTAL RESOURCE MANAGEMENT, COMPREHENSIVE COASTAL RESOURCE MANAGEMENT FOR TIDEWATER VIRGINIA LOCALITIES, available at [http://ccrm.vims.edu/ccrmp/Comp%20Plan%20Language/CRMP\\_Language\\_Short.pdf](http://ccrm.vims.edu/ccrmp/Comp%20Plan%20Language/CRMP_Language_Short.pdf).

To gain an understanding of existing programs that could serve as models, the MPPDC partnered with the National Sea Grant Law Center to review national and state examples of revolving loan fund programs to promote living shorelines or similar coastal erosion control methods. The National Sea Grant Law Center examined four federally funded revolving loan funds; seven state-funded programs, including four in the state of Virginia; and two non-governmental programs. The Law Center reviewed each program's legal structure and financial details, such as number of loans, where publicly available. Personal interviews with program managers were also conducted to obtain additional information on the operation and use of the RLF.

This white paper begins in Section II with an overview of four federally funded revolving loan programs: Clean Water State Revolving Funds, Drinking Water State Revolving Funds, Brownfields Revolving Loan Funds, and Energy Efficiency and Conservation Revolving Loan Funds. In Section III, four revolving loan funds established by the state of Virginia are examined. These programs are the Virginia Airports Revolving Fund; Virginia Dam Safety, Flood Prevention and Protection Fund; Virginia Fish Passage Grant and Revolving Loan Fund; and Preservation Virginia Revolving Loan Fund. Section IV discusses revolving loan programs established by other states to assist with shoreline erosion projects. These programs are Ohio's Lake Erie Coastal Erosion Loan Program, Maryland's Shore Erosion Control Construction Loan Fund, and North Carolina's Hurricane Flood Protection and Beach Erosion Control Project Revolving Fund. Section V briefly highlights two non-governmental revolving loan funds: the Great Lakes Revolving Fund and University Green Revolving Funds.

## **II. Federally Funded RLF Programs**

### *A. Clean Water State Revolving Fund Program*

In 1987, Congress authorized the Clean Water State Revolving Fund (CWSRF) through amendments to the Clean Water Act. The Environmental Protection Agency (EPA) distributes funds from the CWSRF to states, which in turn use the funds to provide low-cost financing for wastewater infrastructure, nonpoint source pollution, and estuary projects that will improve water quality. By 2009, the CWSRF Program had provided over \$74 billion in grant, loan, and refinancing assistance to communities, homeowners, and other eligible entities.<sup>6</sup>

The American Recovery and Reinvestment Act of 2009, commonly known as the stimulus bill, appropriated \$4 billion into the CWSRF as part of Congress's effort to create jobs by funding state and local "shovel ready" projects.<sup>7</sup> To increase the states' funding of "green" projects, Congress required that 20% of the ARRA capitalization funds be allocated "for projects to address green infrastructure, water or energy efficiency improvements or other environmentally innovative activities."<sup>8</sup> This mandate, referred to as the Green Project Reserve, has continued beyond the ARRA funding through its inclusion in the FY10, FY11, and FY12 CWSRF appropriations, although the requirement was reduced to 10% in FY12.<sup>9</sup>

---

<sup>6</sup> ENVIRONMENTAL PROTECTION AGENCY, CLEAN WATER STATE REVOLVING FUND PROGRAMS: 2009 ANNUAL REPORT 2-3 (2010).

<sup>7</sup> *Id.* at 4.

<sup>8</sup> *Id.* at 5.

<sup>9</sup> EPA, Green Project Reserve, [http://water.epa.gov/grants\\_funding/cwsrf/Green-Project-Reserve.cfm](http://water.epa.gov/grants_funding/cwsrf/Green-Project-Reserve.cfm).

## Maryland

Maryland decided to focus its Green Project Reserve funds to encourage the installation of living shorelines. According to the EPA, “green stormwater infrastructure includes a wide array of practices at multiple scales that manage wet weather and that maintain and restore natural hydrology by infiltrating, evapotranspiring and harvesting and using stormwater.”<sup>10</sup> Living shoreline projects that reduce nutrient pollution and sediment loads are potentially eligible for financing assistance through state CWSRF programs. The Maryland Department of Environment (MDE) has awarded over \$9 million for fifteen living shoreline projects in seven Maryland counties (Baltimore, Anne Arundel, Talbot, Dorchester, Howard, Kent, and Washington).<sup>11</sup>

These projects were not funded through loans, however. Although the CWSRF is commonly thought of as a revolving loan fund, funds may also be used for grants. In addition to mandating the Green Project Reserve, the ARRA also required states to use at least 50% of the ARRA funds to provide “additional subsidization” to loan recipients, which could take the form of grants, principal forgiveness, or negative interest rate loans.<sup>12</sup> The “additional subsidization” requirement enabled MDE to provide 100% of the funding for the selected projects through a combination of traditional grants and loan forgiveness.<sup>13</sup>

The Maryland CWSRF is not currently funding any shoreline projects. Unlike the Green Project Reserve mandate, the additional subsidization requirement did not continue at the same level in the fiscal years following the ARRA. Maryland therefore has less funding available for grants and loan forgiveness. This has decreased interest in the CWSRF as a funding source for shoreline projects as few applicants are interested in low-interest loans or have the ability to repay.<sup>14</sup>

## Virginia

The Virginia Clean Water Revolving Loan Fund was created in 1987 and is managed by the Virginia Department of Environmental Quality (VDEQ). The Fund is an umbrella funding source through which a number of loan programs are implemented, including a Wastewater Loan Program, Brownfield Loan Program (mentioned below), and Stormwater Management Loan Program. Virginia also funded a number of green infrastructure projects utilizing its ARRA Green Project Reserve, although none involved the installation of living shorelines. VDEQ awarded over \$11 million in funding for five stormwater projects and three land conservation projects.<sup>15</sup>

Most of the funding available under the Virginia Clean Water Revolving Loan Fund is limited to local governments or other eligible public entities. However, through the Agricultural BMPs Loan Program authorized in 1999, Virginia farmers can receive low-interest loans to assist with implementation of

---

<sup>10</sup> EPA, PROCEDURES FOR IMPLEMENTING CERTAIN PROVISIONS OF EPA’S FISCAL YEAR 2012 APPROPRIATIONS AFFECTING THE CLEAN WATER AND DRINKING WATER STATE REVOLVING FUND PROGRAMS 5 (2012), *available at* [http://water.epa.gov/grants\\_funding/cwsrf/upload/FY-2012-SRF-Procedures-and-Attachments.pdf](http://water.epa.gov/grants_funding/cwsrf/upload/FY-2012-SRF-Procedures-and-Attachments.pdf).

<sup>11</sup> Maryland Department of the Environment, ARRA – Maryland Shoreline Projects (on file with author).

<sup>12</sup> CWSRF 2009 ANNUAL REPORT, *supra* note 6, at 5.

<sup>13</sup> Email from Jag Khuman, Director, Maryland Water Quality Financing Administration, to author, April 19, 2013.

<sup>14</sup> *Id.*

<sup>15</sup> Clean Water Financing and the Green Project Reserve, Presentation by Walter Gills, Program Manager, Clean Water Financing and Assistance Program, Virginia Department of Environmental Quality, Slide 13 (May 17, 2012), *available at* [http://www.vwea.org/storage/documents/edcomm\\_12/Gills\\_VWEA\\_Presentation.pdf](http://www.vwea.org/storage/documents/edcomm_12/Gills_VWEA_Presentation.pdf).

specified Best Management Practices (BMP) designed to improve water quality in the state.<sup>16</sup> The Agricultural BMP Loan Program was initially capitalized by a \$5 million set-aside from the Virginia Clean Water Revolving Loan Fund in FY 2000, with \$10 million in additional capitalization authorized in later years.<sup>17</sup> As of June 2010, 409 farmers have received over \$34 million in low interest loans through this program.<sup>18</sup>

Any Virginia agricultural producer desiring to implement one of 22 structural BMP to reduce the amount of polluted agricultural runoff entering state waters is eligible to apply for financing assistance. Eligible BMPs include such activities as wetland restoration, streambank stabilization, and stormwater retention ponds. The minimum loan amount is \$5,000, and no maximum amount is specified.<sup>19</sup> Farmers may request loan assistance to finance the total costs of BMP implementation or, if the applicant is also receiving grant funding, just their portion of the implementation expenses.<sup>20</sup> Interest is charged at an effective rate of 3% per year with repayment periods generally ranging from 1 to 10 years.<sup>21</sup>

The VDEQ originates approximately 30-40 loans per year under the Agricultural BMP Loan Program. Almost all loan recipients are receiving other state and federal funding assistance. However, because grant funding is usually not disbursed until the project is complete (installed), farmers often need to finance the full cost of the project to cover upfront contractor and other costs. Any grant funding received is assigned to the VDEQ as partial repayment of the loan. The remaining long-term debt is usually the farmer's (local) cost-share portion of the project.<sup>22</sup>

#### *B. Drinking Water State Revolving Funds*

In 1996, Congress amended the Safe Drinking Water Act to establish the Drinking Water State Revolving Fund (DWSRF). The DWSRF's structure is very similar to the CWSRF's discussed above. Federal funds, distributed by the EPA, are used to capitalize state revolving loan funds which are used to provide financial assistance to public water systems to ensure safe drinking water.<sup>23</sup> DWSRF loans have repayment terms of up to 20 years and the interest rates range from zero percent to market rate.<sup>24</sup> As with the CWSRF, the ARRA provided additional capitalization funds to the DWSRF and imposed additional subsidization (50%) and green infrastructure (20%) mandates.<sup>25</sup>

Virginia's DWSRF is referred to as the Virginia Water Supply Revolving Fund, and is managed by the Virginia Resources Authority under the direction of the Virginia Department of Health.<sup>26</sup> The Fund is

---

<sup>16</sup> VA. CODE ANN. § 62.1-229.1.

<sup>17</sup> VIRGINIA STATE WATER CONTROL BOARD, VIRGINIA'S AGRICULTURAL BMP LOAN PROGRAM GUIDELINES 1 (2012), *available at* [http://www.deq.state.va.us/Portals/0/DEQ/Water/ConstructionAssistanceProgram/AG\\_BMP\\_5-9-2012\\_PDF\\_Guidelines\\_ALL.pdf](http://www.deq.state.va.us/Portals/0/DEQ/Water/ConstructionAssistanceProgram/AG_BMP_5-9-2012_PDF_Guidelines_ALL.pdf).

<sup>18</sup> Virginia DEQ, Low Interest Loans for Agricultural Best Management Practices, <http://www.deq.state.va.us/Programs/Water/CleanWaterFinancingAssistance/AgriculturalBMP.aspx>.

<sup>19</sup> BMP Loan Program Guidelines, *supra* note 17, at 2-3.

<sup>20</sup> *Id.* at 3.

<sup>21</sup> *Id.* at 4.

<sup>22</sup> Phone Interview with Walter Gills, Walter Gills, Program Manager, Clean Water Financing and Assistance Program, Virginia Department of Environmental Quality, April 19, 2013.

<sup>23</sup> *See* 42 U.S.C. § 300j.12.

<sup>24</sup> ENVIRONMENTAL PROTECTION AGENCY, DRINKING WATER STATE REVOLVING FUND: 2009 ANNUAL REPORT 4 (2010).

<sup>25</sup> *Id.*

<sup>26</sup> VA. CODE ANN. § 62.1-234.

used primarily to make loans or loans subsidies to local governments or other eligible entities, but grants are also authorized in some situations.<sup>27</sup> In issuing loans, the Legislature directed the VDH to give preference to projects “that will (i) utilize private industry in operation and maintenance of such projects where a material savings in cost can be shown over public operation and maintenance or (ii) serve two or more local governments or other entities to encourage regional cooperation or (iii) both.”<sup>28</sup>

### C. *Brownfields Revolving Loan Funds*

To encourage clean up activities at brownfields sites, which are parcels of property where redevelopment or reuse is complicated by the presence of hazardous substances or other contaminants, the EPA provides funding to states and other eligible governmental entities to capitalize revolving loan funds. Neither non-profit corporations nor for-profit entities may apply for RLF funds directly from the EPA. The maximum amount of funding available under the Brownfields Revolving Loan Fund Grants is \$1 million per entity with the option to apply for subsequent grants. Sixty percent of the awarded funds must be used to implement the RLF. The loans originated under the Brownfield RLFs may take a variety of forms including standard loans, low or zero interest loans, loan guarantees, and bridge loans. Grants from RLFs are also permitted and grantees must perform RLF grant activities within five years.

In Virginia, the Legislature established a Brownfield Remediation Loan Program in 2002 by expanding the funding activities of the Virginia Water Facilities (Wastewater) Revolving Loan Fund. The Virginia Department of Environmental Quality is authorized to make loans from the Water Facilities RLF “to local governments, public authorities, partnerships or corporations for necessary remediation activities undertaken at a brownfield site ... for the purpose of reducing ground water contamination or reducing risk to public health.”<sup>29</sup> Because funding is restricted to properties afflicted with groundwater contamination, Virginia’s program is narrower in scope than other state programs established pursuant to EPA’s Brownfield RLF Grants. Both short-term (up to 10 years) and long-term (10-20 year) loans are available, ranging from \$10,000 (minimum) to \$1,000,000 (maximum).<sup>30</sup> Loans can be used to cover the costs associated with remediation of a contaminated site, reimbursement of outside services (i.e., engineering services) to facilitate remediation of the site, and costs associated with title searches and related title work.<sup>31</sup>

### D. *Energy Efficiency and Conservation Revolving Loan Funds*

The Energy Efficiency and Conservation Block Grant (EECBG) program is authorized under Title V, Subtitle E of the Energy Independence and Security Act of 2007. The EECBG program is modeled after the Department of Housing and Urban Development’s Community Development Block Grant program and is intended to assist states, Indian tribes, and local governments in developing, implementing, and managing energy efficiency and conservation projects.<sup>32</sup> The EECBG program was first funded by Congress through the American Recovery and Reinvestment Act of 2009 (ARRA), which appropriated

---

<sup>27</sup> *Id.* §§ 62.1-238 and 62.1-239.

<sup>28</sup> *Id.* § 62.1-239.1.

<sup>29</sup> VA. CODE ANN. § 62.1-229.2.

<sup>30</sup> Virginia’s Brownfield Remediation Loan Program, Virginia DEQ, <http://www.deq.state.va.us/Programs/Water/CleanWaterFinancingAssistance/Brownfield.aspx>.

<sup>31</sup> *Id.*

<sup>32</sup> U.S. Department of Energy, Weatherization & Intergovernmental Program, Energy Efficiency and Conservation Block Grant Program, <http://www1.eere.energy.gov/wip/eeecbg.html>.



\$3.2 billion for block grants to states, local governments, and Indian Tribes.<sup>33</sup> To extend the impact of the ARRA funds, the ARRA encouraged block grant recipients to establish long-term funding mechanism such as RLFs.<sup>34</sup>

Local governments and Indian tribes seeking to capitalize RLFs were limited to either 20% of their Department of Energy funding allocations or \$250,000, whichever was greater.<sup>35</sup> RLFs established by states were not subject to this limitation. Administrative costs were capped at 10% for states and the greater of 10% or \$75,000 for eligible local governments and tribes.<sup>36</sup> The ARRA required that the initial capitalization funds be loaned within three years of the effective date of the award but no later than September 30, 2015.<sup>37</sup> Money recaptured from the repayments on these initial loans could be used for future loans.<sup>38</sup>

Virginia did not use its ARRA funds to establish a RLF. Rather, the state's Energy Efficiency and Conservation Strategy directed "all of the state's allocation of \$16.1 million in Energy Efficiency and Conservation Block Grant funds to benefit localities and devotes two-thirds of the funds to create and encourage enduring, self-sustaining programs to improve energy efficiency in public and private buildings."<sup>39</sup> The remaining EECBG funds were allocated to financing renewable energy systems for local public facilities.<sup>40</sup>

### III. Virginia RLF Programs

#### A. Virginia Airports Revolving Fund

The Virginia Airports Revolving Fund was established in 2000 and was the nation's first loan fund devoted exclusively to airport financing.<sup>41</sup> The Virginia Resources Authority (VRA) manages the Fund in partnership with the Virginia Aviation Board and the Virginia Department of Aviation. The General Assembly capitalized the Fund with a \$25 million state appropriation.<sup>42</sup> The Fund is used to make loans to local governments to finance or refinance the cost of airport projects.<sup>43</sup> The interest rate and terms and conditions are set by the VRA, on a case-by-case basis.<sup>44</sup> Loans may not exceed the costs of the

---

<sup>33</sup> *Id.*

<sup>34</sup> Sam Booth, National Renewable Energy Laboratory, *Revolving Loan Funds 1* (2009).

<sup>35</sup> *Id.* § 17155(b)(3)(B).

<sup>36</sup> *Id.* § 17155(b)(3)(A).

<sup>37</sup> Energy Efficiency and Conservation Block Grant Program Notice 10-002, Dept. of Energy, Dec. 7, 2009, *available at* [http://www1.eere.energy.gov/wip/solutioncenter/pdfs/eecbg\\_rlf\\_program\\_120709.pdf](http://www1.eere.energy.gov/wip/solutioncenter/pdfs/eecbg_rlf_program_120709.pdf).

<sup>38</sup> *Revolving Loan Funds and the State Energy Program 1* (2009),

[http://www1.eere.energy.gov/wip/pdfs/sep\\_rlf.pdf](http://www1.eere.energy.gov/wip/pdfs/sep_rlf.pdf).

<sup>39</sup> Virginia Department of Mines, Minerals, and Energy, *Energy Efficiency and Conservation Strategy for States*, Attachment E (2009), *available at* <http://www.dmme.virginia.gov/de/arra-public/EECS.pdf>.

<sup>40</sup> *Id.*

<sup>41</sup> Matthew Vadum, *Virginia Gears Up for Nation's First Airport Revolving Fund*, 334 BOND BUYER 26 (2000).

<sup>42</sup> *Id.*

<sup>43</sup> VA. CODE ANN. § 5.1-30.5.

<sup>44</sup> *Id.* §5.1-30.5.

proposed project.<sup>45</sup> To date, the VRA has originated over \$87 million in below market interest rate loans to assist with more than 30 projects across 20 airports.<sup>46</sup>

### *B. Virginia Dam Safety, Flood Prevention and Protection Fund*

The Virginia Dam Safety, Flood Prevention and Protection Assistance Fund<sup>47</sup> was established in 1989 to improve dam safety and assist with flood prevention and protection projects. The VRA, in cooperation with the Virginia Department of Conservation and Recreation (VDCR), manages the Fund which was capitalized through a state appropriation. The VRA administers the program, but project eligibility, criteria, and selection is directed by the VDCR.<sup>48</sup>

Both grants and loans are authorized. Grants and loans are available to local governments for dam repair, dam hazard classification studies, and the implementation of flood prevention projects.<sup>49</sup> Loans are available to private owners of impoundment structures for the design, repair, and safety modifications of dams identified in VRA safety reports (i.e., with deficiencies that could threaten life or property).<sup>50</sup>

Despite a legislative directive that “Priority shall be given to making loans for high hazard dams,”<sup>51</sup> it does not appear that any loans have originated under the Fund. According to historic VDCR regulations in effect until 2006, loans were to be the primary means for providing assistance and loans would be made for 20-year terms at 3% interest.<sup>52</sup> However, in 2006, the Virginia General Assembly transferred administrative authority to the VRA and removed the authority of the VDCR to promulgate regulations with respect to the Fund. The VRA website does not contain information or guidance with respect to dam safety loans. The VDCR website provides a link to the 2013 Grant Manual for the Virginia Dam Safety, Flood Prevention, and Protection Assistance Fund, but no information on the availability of loans.<sup>53</sup> The only other reference found with respect to loan funding is a brief summary on the website of the Association of State Dam Safety Officials that indicates two dam owners applied for loans in early 2008, both requesting \$300,000, but ultimately declined to participate.<sup>54</sup>

### *C. Virginia Fish Passage Grant and Revolving Loan Fund*

The Virginia Fish Passage Grant and Revolving Loan Fund was established in 1989. The Virginia Department of Game and Inland Fisheries, in consultation with the Virginia Marine Resources Commission, is authorized to provide financing assistance for the construction of fishways. Eligible applicants include local governments and private entities that own a dam or other artificial impediment

---

<sup>45</sup> *Id.*

<sup>46</sup> Virginia Resources Authority, Virginia Airports Revolving Fund, <http://www.virginiaresources.org/airports.shtml> (last visited June 10, 2013).

<sup>47</sup> VA CODE ANN. § 10.1-603.17.

<sup>48</sup> *Id.* § 10.1-603.18.

<sup>49</sup> *Id.* §§ 10.1-603.19(A) and (C).

<sup>50</sup> *Id.* § 10.1-603.19(c)(i).

<sup>51</sup> *Id.* § 10.1-603.20(B).

<sup>52</sup> 4 VA. ADMIN. CODE § 5-50-80 (2006).

<sup>53</sup> Virginia Department of Conservation and Recreation, Dam Safety, Floodplain Management, [http://www.dcr.virginia.gov/dam\\_safety\\_and\\_floodplains/](http://www.dcr.virginia.gov/dam_safety_and_floodplains/) (last visited June 11, 2013).

<sup>54</sup> Association of State Dam Safety Officials, Virginia Dam Safety Program <http://www.damsafety.org/map/state.aspx?s=47> (last visited June 11, 2013).

to the free passage of anadromous fish.<sup>55</sup> For local government projects, the Fund may be used to cover 75% of the entire cost of the fishway with the balance of the cost lent to the local government.<sup>56</sup> The loans may be repaid over ten years at no interest or over 20 years at an annual interest rate “which shall be two percentage points below the rate for municipal bonds given in the latest Bond Buyer Twenty Bond Index appearing before the loan is made.”<sup>57</sup> The DNR must approve the fishway design before making a loan for a particular project.

For private borrowers, the loan terms may not exceed 20 years and the interest rates vary based on the percentage of project costs borrowed.<sup>58</sup> If the loan exceeds 50% of the estimated project cost, “the interest rate shall be the prime rate for major money center banks, as reported by the latest edition of The Wall Street Journal appearing before the loan is made.”<sup>59</sup> If the loan is less than 50% of the estimated costs, the interest rate “shall not be less than three percentage points below such prime rate.”<sup>60</sup>

#### *D. Preservation Virginia Revolving Loan Fund*

Preservation Virginia administers a revolving loan fund to acquire endangered significant historic properties to save them from demolition or severe neglect.<sup>61</sup> Properties acquired through this program are placed under protective easement with the Virginia Department of Historic Resources and then sold to new owners who must agree to take on rehabilitation of the property. Proceeds from the sale of the properties are used to replenish the fund. The program was capitalized by the Commonwealth of Virginia in 1989 and transferred to Preservation Virginia in 1999.<sup>62</sup> The Fund is currently valued at approximately \$1.5 million.<sup>63</sup>

Although recapitalization of the fund has been impeded due to fluctuations in the real estate market which have required Preservation Virginia to hold on to properties for extended periods of time, the director views the program as a success.<sup>64</sup> The existence of the fund enables Preservation Virginia staff to build awareness for saving historic properties when meeting with property owners in the field. According to program director, the fund is a starting point for talking about solutions for the property owners even if they end up not participating in the program. In some instances, the staff of Preservation Virginia have been able to act as a “matchmaker,” finding buyers for these threatened properties.<sup>65</sup> Preservation Virginia currently is looking into options to partner with local governments when purchasing homes, but they have not pursued anything to date.<sup>66</sup>

---

<sup>55</sup> VA. CODE ANN. §§ 29.1-101.5 and 29.1-101.6.

<sup>56</sup> *Id.* § 29.1-101.5.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.* § 29.1-101.6.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> <http://preservationvirginia.org/programs/revolving-fund-program>.

<sup>62</sup> Preservation Virginia, Revolving Fund Program, Frequently Asked Questions, <http://www.apva.org/revolvingfund/>. See also, VA. CODE ANN. § 10.1-2404.1.

<sup>63</sup> Preservation Virginia, Revolving Fund Program, Frequently Asked Questions, <http://www.apva.org/revolvingfund/>.

<sup>64</sup> Phone interview with Elizabeth Kostelny, Executive Director, Preservation Virginia, May 21, 2013.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

## IV. Other States

### A. Lake Erie Coastal Erosion Loan

In 1999, the Ohio Legislature authorized the Coastal Erosion Control Loan Program. Through this program, the Ohio Water Development Authority (OWDA) is authorized to issue a loan to a county to provide financial assistance to property owners in designated coastal erosion areas seeking to construct erosion control structures.<sup>67</sup> Demand for this loan program has been almost non-existent.<sup>68</sup> Although the program was capitalized through a \$10,000,000 transfer of state funds,<sup>69</sup> only three loans totaling less than \$1 million have been made through one participating county (Lorain). According to the loan information available on OWDA's website, as of December 31, 2012, Lorain County has two loans currently outstanding (totaling \$661,000) with unpaid balances of \$279,296.14. The 15-year loans were originated in 2003 and 2008 with interest rates of 5.34% and 4.67% respectively.

Two factors may account for the lack of demand: high construction costs and program complexity. The Coastal Erosion Control Loan Program made financing available for "erosion control structures," which are defined as structures "designed solely and specifically to reduce or control erosion of the shore along or near Lake Erie, including, without limitation, revetments, seawalls, bulkheads, certain breakwaters, and similar structures."<sup>70</sup> These projects can be quite expensive. In addition to the costs of labor and materials, the services of coastal engineers and surveyors are needed to prepare construction plans and obtain necessary permits. Even with financing, shoreline property owners may have been reluctant or unable to incur the costs associated with engineered projects.

In addition, the loan program's structure is complex and dependent on the willingness of county governments to participate. Of the eight counties eligible to participate in the program, Ohio's Office of Coastal Management website identifies only five as participants.<sup>71</sup> Of those five, only Lorain County has actually utilized the program. Like property owners, county governments may have been unwilling or unable to assume financial and administrative authority for a new loan program.

Loans are not made directly to the property owner. Nor does the money actually flow through the county. The county applies for the loan, but the law requires ODWA to make payments to the contractor hired by the property owner to construct the erosion control structure pursuant to terms specified in a written agreement between the property owner and county.<sup>72</sup> The county repays the loan through the collection of payments from the property owner pursuant to a schedule set forth in the written agreement. If the property owner fails to abide by the terms of the agreement (i.e., make the payments on the county's loan), the county remains responsible for loan repayment. Although the law allows the county to place a lien on the property for any unpaid amounts under the agreement and collect through property taxes,<sup>73</sup> the county is prohibited from obligating funds raised by taxation for repayment of the loan.<sup>74</sup>

---

<sup>67</sup> OHIO REV. CODE § 1506.44(A).

<sup>68</sup> Phone call with Steven Grossman, Executive Director, Ohio Water Development Authority, April 24, 2013.

<sup>69</sup> Ohio Water Development Authority, Audited Financial Statements For the Fiscal Year Ended December 31, 2012, at 18.

<sup>70</sup> OHIO REV. CODE § 1506.40(L).

<sup>71</sup> [http://ohiodnr.com/Ohio\\_Coast/RegulatoryHome/ErosionControlLoansGuide7/tabid/9292/Default.aspx](http://ohiodnr.com/Ohio_Coast/RegulatoryHome/ErosionControlLoansGuide7/tabid/9292/Default.aspx).

<sup>72</sup> *Id.* § 1506.44(2).

<sup>73</sup> *Id.* § 1506(B)(3).

<sup>74</sup> *Id.* § 1506(C).

## B. Maryland Shore Erosion Control Construction Loan Fund

The Maryland General Assembly created the Shore Erosion Control Construction Loan Fund in 1971 to provide interest-free loans or grants to property owners and local governments for shore erosion control projects.<sup>75</sup> Shore erosion control projects include both structural projects, such as bulkheads or groins, and nonstructural projects, such as measures required to stabilize waterside, shorelines, and streambanks.<sup>76</sup> However, since 1997, the Maryland Department of Natural Resources (DNR) has focused its resources on nonstructural erosion control.<sup>77</sup> Any individual owning property abutting a state water may request the DNR's assistance in the design, construction, and financing of a shore erosion control project for the property.<sup>78</sup>

Financial assistance for non-structural projects may be awarded as 5-, 15-, or 20-year interest-free loans.<sup>79</sup> According to DNR, 15-year private loans are rare. The majority of DNR's loans are 20-year loans issued to a community or group of landowners collectively seeking financial assistance.<sup>80</sup> The amount of the loan is determined in accordance with the loan formula of the Shore Erosion Control Law, which provides that property owners may "receive an interest-free loan covering 100% of the first \$60,000 of project construction cost, 50% of the next \$20,000 of project construction cost, 25% of the next \$20,000 of project construction cost, and 10% of the part of construction cost exceeding \$100,000."<sup>81</sup> Local governments may borrow the full costs of approved projects, as they are not subject to the project construction cost limitation applicable to private borrowers.<sup>82</sup> Financial assistance, in the form of either grants or loans, is not available for structural projects.<sup>83</sup>

The loans issued pursuant to the Fund are not loans in the traditional sense, where the borrower receives funds, incurs expenses, and repays the loan. Rather, the state enters into an agreement with the property owner regarding the specifics of the project.<sup>84</sup> The DNR's Chesapeake and Coastal Service Shoreline Conservation Service helps guides the property owners through the award and construction process.<sup>85</sup> The state then recoups its costs through a benefit charge on the benefited property levied by the Virginia Board of Public Works.<sup>86</sup> The benefit charge, which is calculated to return to the state the

---

<sup>75</sup> MD. CODE ANN, NAT. RES. § 8-1005(a)(1).

<sup>76</sup> *Id.* § 8-1001(g).

<sup>77</sup> Maryland General Assembly, Department of Legislative Services, Fiscal Note for H.B. 200 (Shore Erosion Control Construction Loan Fund) (Jan. 25, 2001).

<sup>78</sup> MD. CODE ANN, NAT. RES. § 8-1003(a).

<sup>79</sup> Maryland Department of Natural Resources, Introduction – Shore Erosion Control, <http://dnr.maryland.gov/ccp/sec/secintro.asp> (last visited June 11, 2013).

<sup>80</sup> Phone interview with Bhaskaran Subramanian, Ph.D., Program Manager, Habitat Restoration and Conservation, Maryland Department of Natural Resources, June 12, 2013.

<sup>81</sup> MD. CODE ANN., NAT. RES. § 8-1005(a)(3). In practice, this loan formula is only applied to 15- and 20- year loans. For 5-year loans involving marsh creation/protection using natural/living materials, referred to by DNR as Type 1 projects, the DNR limits loans to 75% of project costs. MARYLAND DEPARTMENT OF NATURAL RESOURCES, FINANCIAL ASSISTANCE FOR SHORE EROSION CONTROL PROJECTS MATRIX (2008) (on file with authors).

<sup>82</sup> *Id.* § 8-1005(a)(f).

<sup>83</sup> Maryland Department of Natural Resources, *supra* note 79.

<sup>84</sup> MD. CODE ANN., NAT. RES. § 8-1005(d).

<sup>85</sup> Subramanian, *supra* note 80.

<sup>86</sup> *Id.* §§ 8-1005(d)(7) and 8-1006.

net project construction costs, is payable in annual installments over a period of up to 25 years.<sup>87</sup> In practice, the repayment period for the benefit charge matches the loan term (i.e., 5, 15, or 20 years). On average, the program receives about \$600,000 to \$700,000 in loan repayments annually and funds 15-20 projects each year.<sup>88</sup>

### C. North Carolina Hurricane Flood Protection and Beach Erosion Control Project Revolving Fund

To assist local governments in meeting their nonfederal cost-share requirements for hurricane protection and beach erosion projects (i.e., beach renourishment projects), the North Carolina Legislature established the Hurricane Flood Protection and Beach Erosion Control Project Revolving Fund.<sup>89</sup> The law authorizes the Department of Environment and Natural Resources to advance funds to county and municipal governments for planning and engineering work, construction costs, acquisition or relocation costs, and maintenance.<sup>90</sup> Repayment is authorized in equal installments or lump sum, but the term may not exceed 10 years.<sup>91</sup>

The legislation authorizing this program was passed in 1971. The Fund was capitalized, but only one community ever borrowed money from it.<sup>92</sup> The Town of Carolina Beach took advantage of the program to cover its share of a federal storm damage reduction project, and subsequently repaid the loan.<sup>93</sup> Not surprisingly, given the lack of use, the State eventually reallocated the money from the Fund to another purpose during a tight budget year.<sup>94</sup> The authority to operate the Fund remains, but currently there is no funding from which to make any loans.

## V. Non-governmental Revolving Loan Funds

### A. Great Lakes Revolving Fund

The Conservation Fund, a nonprofit land conservation organization headquartered in Arlington, Virginia, manages the Great Lakes Revolving Fund. The Fund was established in 2002 and capitalized through a \$7.3 million gift from the Charles Stewart Mott Foundation.<sup>95</sup> The Conservation Fund uses the Great Lakes Revolving Fund to provide “technical assistance and bridge financing to nonprofit land trusts working to preserve resources within the Great Lakes Basin.”<sup>96</sup> Short-term loans are available for two primary types of transactions: (1) direct loans to land trusts and (2) advance purchase of land on behalf of a public agency or nonprofit.<sup>97</sup> The Conservation Fund has, on average, used the revolving funds three times every five years to support a variety of land conservation projects in the Great Lakes.<sup>98</sup> The

---

<sup>87</sup> *Id.* § 8-1006(a).

<sup>88</sup> Subramanian, *supra* note 80.

<sup>89</sup> N.C. GEN. STAT. § 143-215.62.

<sup>90</sup> *Id.* § 143-215.62(a).

<sup>91</sup> *Id.* § 143-215.62(c).

<sup>92</sup> Email from John Sutherland to Darren England, North Carolina Division of Water Resources, May 23, 2013.

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> The Conservation Fund, Great Lakes Revolving Fund, <http://www.conservationfund.org/our-conservation-strategy/focus-areas/conservation-finance/great-lakes-revolving-fund/> (last visited June 11, 2013).

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

Conservation Fund generally lends up to \$2 million per project, with a two-year repayment period and interest rates at 70% of the prime rate.<sup>99</sup>

### B. University Green Funds

A number of Universities across the country, struggling with how to finance energy efficiency projects on campus in the face of budget cuts and other challenges, have established “green revolving funds” (GRF). GRFs “invest in energy efficiency upgrades and projects that decrease resource use, thereby lowering operating expenses. These operational savings are returned to the fund and then reinvested in additional projects.”<sup>100</sup> Although not always revolving loan programs in the traditional sense, these funds do enable institutions to invest in a revolving set of projects on their campuses.

According to the Sustainable Endowments Institute, the oldest GRF was founded in 1980 at Western Michigan University.<sup>101</sup> As of 2011, 47 institutions had GRFs with about an even split between public and private institutions.<sup>102</sup> The initial capital for the GRFs has come from a range of sources including University administration, donors, endowments, and student fees.<sup>103</sup> Harvard’s Green Loan Fund, for example, is a \$12 million revolving loan fund that provides up-front capital for projects that reduce Harvard’s environmental impact.<sup>104</sup> The recipient (university departments) “agree to repay the fund via savings achieved by project-related reductions in utility consumption, waste removal, or operating costs.”<sup>105</sup> There is a \$500,000 limit per conservation measure with a payback period of 5 years or less.<sup>106</sup> Payback schedules are based on annual savings, and an annual 3% administrative fee is added to the loan.<sup>107</sup> To date, Harvard’s Green Loan Fund has invested \$15.1 million in more than 192 projects generating more than \$4.8 million in savings.<sup>108</sup>

## VI. Conclusion

Revolving loan funds, when structured properly and implemented effectively, can reduce borrowing costs and provide financial assistance to borrowers who may not have access to other capital. Despite the benefits offered, however, many RLF programs examined during the course of this study appear underutilized as applicants prefer to apply for grants when available. Of the RLF programs examined, Maryland’s Shore Erosion Control Construction Loan Program is the most promising model. In addition to focusing on nonstructural erosion control, which includes living shoreline-type programs, the RLF has been operating for more than 40 years with steady demand for financing assistance. In Virginia, the most promising model is the Agricultural BMP Loan Program. This RLF facilitates a significant number of projects by providing financial assistance to individual property owners and many of the eligible BMPs, like streambank stabilization, are similar to living shoreline projects.

---

<sup>99</sup> Press Release, Charles Steward Mott Foundation, Revolving Loan Fund Strengthens Great Lakes Land Conservation, Nov. 4, 2008, available at <http://www.mott.org/news/news/2008/GLRLF>.

<sup>100</sup> SUSTAINABLE ENDOWMENTS INSTITUTE, GREENING THE BOTTOM LINE 7 (2011), available at <http://greenbillion.org/wp-content/uploads/2011/10/GreeningTheBottomLine.pdf>.

<sup>101</sup> *Id.* at 10.

<sup>102</sup> *Id.* at 10-11.

<sup>103</sup> *Id.* at 17-18.

<sup>104</sup> Sustainability at Harvard, Green Loan Fund, <http://green.harvard.edu/loan-fund> (last visited June 11, 2013).

<sup>105</sup> *Id.*

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

Before implementing an RLF, proponents need to consider a range of issues and develop various policies, procedures, and systems. In general, proponents are encouraged to:

- Review information provided on existing programs;
- Establish the purposes and goals of the RLF;
- Identify allowed and prohibited uses of funds;
- Set requirements for borrowers, including eligibility, reporting, insurance or collateral;
- Set the loan terms, including maximum length, maximum and minimum loan amounts, administrative fees, interest rates, repayment, default and delinquency;
- Set up a committee to review loan applications;
- Identify administrative duties and staffing needs for the program;
- Develop forms for the program, such as loan application, loan disbursement, and reporting;
- Define a matrix for selecting projects;
- Promote the RLF and capitalize with funds;
- Provide loans and technical assistance; and
- Track and monitor existing loans.<sup>109</sup>

Regardless of an RLF's scale and reach, these programs can engender positive change in communities by raising awareness of alternative solutions to local problems. For example, in addition to preserving historic properties through its RLF program, Preservation Virginia has also been able to use its program as a platform to discuss solutions with homeowners. Similarly, a Living Shorelines RLF in Virginia could provide loans to qualified and interested borrowers and, at a minimum, raise the visibility of living shorelines as an option for others looking into shoreline rehabilitation.

---

<sup>109</sup> SAM BOOTH, NATIONAL RENEWABLE ENERGY LABORATORY, REVOLVING LOAN FUNDS 5-9 (2009).