



# Options for Properties Subject to Recurrent Flooding and Sea Level Rise

Summer 2018

## Authors

Elizabeth Andrews  
Angela King  
Kristin McCarthy  
Donnie Autry

## Thank You to Our Funders

This RAFT product was created with funding from:

Virginia Environmental Endowment

Virginia Sea Grant Climate Adaptation and Resilience Program

We are grateful to these funders for supporting various phases  
of The RAFT from 2015-Present.

Anonymous

Environmental Resilience Institute at the University of Virginia

National Fish and Wildlife Foundation

National Oceanic and Atmospheric Administration\*

School of Architecture at the University of Virginia

Virginia Coastal Zone Management Program\*

Virginia Environmental Endowment

Virginia Sea Grant Climate Adaptation and Resilience Program

For more information visit The RAFT website: [raft.ien.virginia.edu](http://raft.ien.virginia.edu)

\*\* The RAFT implementation on the Eastern Shore, Task #92.03 was funded, in part, by the Virginia Coastal Zone Management Program at the Department of Environmental Quality through Grant #NA17NOS4190152 of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended. The views expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Department of Commerce, NOAA, or any of its sub agencies.

The views expressed in The RAFT's various products are those of the authors and do not necessarily reflect the views of any of the funders mentioned above.

**OPTIONS FOR PROPERTIES SUBJECT TO THE RECURRENT FLOODING AND SEA LEVEL RISE**

Public Park or Recreational Opportunity	
Flood prone properties currently under County ownership could be evaluated for potential use as a public park or other recreational opportunity.	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Alternative use of flood prone properties already owned by the county</li> <li>• Creation of a public amenity for County residents and visitors</li> <li>• Possibility of charging small fees</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• Keeps property under County control, which requires ongoing maintenance and does not result in tax revenue</li> </ul>
<p style="text-align: center;"><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <b>Kayak or boat launch site</b> (could charge a small fee for use or for boat storage): May be possible at waterfront properties such as 53-131, 53-264, 53-267B/E</li> <li>• <b>Rain garden:</b> Cuyahoga Falls Rain Garden Project example: <a href="http://www.floods.org/Files/Conf2015_ppts/A2_Mackenbach.pdf">http://www.floods.org/Files/Conf2015_ppts/A2_Mackenbach.pdf</a></li> <li>• <b>Environmental education, hiking, or forestry:</b> Walking/bike trails on larger properties; environmental education in conjunction with Chesapeake Bay Foundation or other non-profit group</li> <li>• <b>Wildlife habitat</b></li> </ul>	

Community Garden or Other Agricultural Opportunities	
County could build a community garden and/or provide incentives for groups or individuals to start pilot commercial gardening projects to encourage private investment of this nature.	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Alternative use of flood prone properties already owned by the county</li> <li>• Creation of a public amenity</li> <li>• Possibility of charging small fees</li> <li>• Encourage growth of small business within the county</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• Keeps property under County control, which requires ongoing maintenance and does not result in tax revenue</li> </ul>
<p style="text-align: center;"><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <b>Community garden</b> (free benefit to residents, or could charge small fee).</li> <li>• <b>Commercial gardening</b> (larger properties only): Growing salt-tolerant crops or switchgrass (can be used for ethanol or to feed livestock). <a href="http://www.audubon.org/magazine/september-october-2007/the-virtues-switchgrass-alternative">http://www.audubon.org/magazine/september-october-2007/the-virtues-switchgrass-alternative</a>; <a href="https://pubs.ext.vt.edu/418/418-013/418-013.html">https://pubs.ext.vt.edu/418/418-013/418-013.html</a></li> </ul>	

**Wetland Mitigation Banks**

<p>County could enter into a formal agreement with Virginia DEQ to create a wetlands mitigation bank.</p>	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Alternative use of flood prone properties already owned by the county</li> <li>• Results in compensation to be used for other unavoidable impacts to aquatic resources permitted under CWA § 404</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• Keeps property under County control, which requires ongoing maintenance and does not result in tax revenue</li> </ul>
<p style="text-align: center;"><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <b>Refer to EPA and DEQ documents for more details:</b> <ul style="list-style-type: none"> <li>○ <a href="https://www.epa.gov/cwa-404/mitigation-banking-factsheet">https://www.epa.gov/cwa-404/mitigation-banking-factsheet</a></li> <li>○ <a href="http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx">http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx</a></li> <li>○ <a href="http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/VA_Offsite_Mit_Guidelines.pdf">http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/VA_Offsite_Mit_Guidelines.pdf</a></li> </ul> </li> </ul>	

Educational/Research Opportunities	
<p>County could establish partnerships with VIMS or other organizations to conduct research on the properties.</p>	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Alternative use of flood prone properties already owned by the county</li> <li>• County could potentially sell or lease land to VIMS or other organization</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• Difficult to locate an interested party for such partnership</li> </ul>
<p style="text-align: center;"><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <b>Turfgrass research facility:</b> Grants available in coordination with US Golf Association: <a href="http://www.usga.org/content/dam/usga/images/course-care/researchproposals/2017/2017%20Call%20for%20Proposals.pdf">http://www.usga.org/content/dam/usga/images/course-care/researchproposals/2017/2017%20Call%20for%20Proposals.pdf</a></li> <li>• <b>Agricultural research facility focused on salt-tolerant plants</b></li> <li>• <b>VIMS research facility</b></li> <li>• <b>Demonstration rain garden, living shoreline, or Chesapeake Bay Preservation Act Resource Protection Area buffer</b></li> </ul>	

<p>Localities could acquire properties using FEMA grants and then repurpose them to fulfill conservation and/or flood protection goals that have been set by the locality within its Comprehensive Plan, Floodplain Management Plan, or other local document.</p>	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Property owner fully compensated for property</li> <li>• Locality can utilize property to meet conservation goals and, depending on location, provide additional flood protection to surrounding properties</li> <li>• Funded by FEMA</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• FEMA grant may not provide enough for demolition</li> <li>• Limited repurposing options (open space with some exceptions)</li> </ul>
<p><b>Examples:</b></p> <p><b>Use FEMA’s Acquisition Program to Obtain and Repurpose</b></p> <ul style="list-style-type: none"> <li>• Gloucester County’s previous acquisition program utilized this option</li> </ul>	

<p><b>Transfers of Development Rights Opportunities</b></p>	
<p>Localities can appropriately manage new development within low-lying areas by creating a Transfer of Development Rights program to allow property owners to sever development rights on properties in certain areas of the locality and transfer such rights to properties within other areas of the locality.</p>	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Allows developers to avoid rezoning process by transferring development rights from rural areas to residential areas</li> <li>• Allows farmer to maintain ownership of land while severing residential development rights</li> <li>• Allows counties to encourage developments in in upland areas rather than lowlands</li> <li>• Uses private funds</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• Requires the cooperation of receiving and sending owners</li> <li>• Demand in receiving areas may not be strong</li> <li>• Increased density in receiving areas can lead to “Not in My Backyard” problems</li> <li>• Increased staff time for the locality</li> <li>• Generally have a rural focus, rather than a coastal resilience focus – so may need modification</li> </ul>

**Examples:**

**Transfer of Development Rights (TDR) Programs:**

- Virginia Code allows local governments to create TDR programs. Va. Code Ann. § 15.2-2316.2(A).
- The TDR statute enables local governments to designate, in zoning ordinances within the locality’s comprehensive plan, “sending areas” (where development is limited) and “receiving areas” (where development is encouraged). *Id.* § 15.2-2316.1.
- The ordinance must provide for the creation of instruments that sever the development rights and allow for their transfer and use by other parties. Landowners must also grant an easement limiting the use and development of the sending property in perpetuity and binding on future owners. *Id.* § 15.2-2316.2(B)(1)-(4).
- To implement such a program, the locality would first need to designate sending and receiving areas. The low-lying, more vulnerable areas would be the “sending areas” and the more upland, less vulnerable areas would be the “receiving areas” appropriate for intensified use or density.

Use Value Assessments Tax Incentives	
Localities can encourage property owners to preserve low-lying coastal lands by allowing for taxation based on use value instead of fair market value and development potential.	
<p><b>Potential Benefits:</b></p> <ul style="list-style-type: none"> <li>• Allows for preservation of vulnerable land while also economically incentivizing land owners in low lying areas to not develop their land further</li> <li>• Depending on the purpose of the preservation, the property can serve the future interests of the locality</li> </ul>	<p><b>Potential Drawbacks:</b></p> <ul style="list-style-type: none"> <li>• Decreased tax revenue</li> <li>• Zoning hurdles to overcome</li> <li>• Tax savings may be less than potential earnings generated by using the property for commercial purposes (although long-term costs of road maintenance and EMS to flooding properties also should be taken into account)</li> <li>• Allowing the land for farm use may hurt environment in other ways</li> </ul>

<b>Examples:</b>	
<b>Tax Incentive: Use Value Assessments:</b>	
<ul style="list-style-type: none"> <li>This incentive is most useful in encouraging the preservation of vulnerable undeveloped land.</li> <li>Localities can lower tax assessments for owners who preserve property as</li> </ul>	
<b>Tax Exemptions for Wetlands/Riparian Buffers</b>	
Localities can offer tax exemptions for property owners who agree to an easement to permit a portion of their property (wetlands and riparian buffers) to be inundated by water.	
<b>Potential Benefits:</b>	<b>Potential Drawbacks:</b>
<ul style="list-style-type: none"> <li>Provides community with natural buffers to flooding</li> </ul>	<ul style="list-style-type: none"> <li>Inundated land unusable</li> <li>Exempting the portion of the land</li> </ul>
<b>Tax Incentives for Voluntarily Downzoning Properties</b>	
Individuals can voluntarily agree to downzone properties in exchange for tax incentives.	
<b>Potential Benefits:</b>	<b>Potential Drawbacks:</b>
<ul style="list-style-type: none"> <li>Land owners are economically incentivized to agree to a zoning classification that allows for a lower density or size of development</li> <li>Zoning hurdles removed</li> </ul>	<ul style="list-style-type: none"> <li>The transaction costs of negotiation with each individual landowner may be expensive and time-consuming.</li> <li>Decreased tax revenue</li> </ul>
<b>Examples:</b>	
<b>Tax Incentives: Voluntary Agreements:</b>	
<ul style="list-style-type: none"> <li>Localities can offer tax credits in exchange for voluntary agreements to downzone properties. Va. Code Ann. § 15.2-2286(A)(11).</li> <li>Localities can use this device to encourage landowners to voluntarily restrict the use or density of their property.</li> </ul>	
<p>vegetation, subject to a perpetual easement permitting inundation by water, that is (i) at least 35 feet in width, (ii) adjacent to a body of water, and (iii) managed to maintain the integrity of stream channels and shorelines and reduce the effects of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals. <i>Id.</i></p> <ul style="list-style-type: none"> <li>The portion of the property that is subject to the perpetual easement can then be exempted from property taxes by the locality. <i>Id.</i></li> <li>Communities with high flood risks due to sea level rise would benefit from the preservation of wetlands and riparian buffers that can help dissipate floodwaters.</li> <li>Not yet used by Gloucester County</li> </ul>	