

## Data for Flood Hazard Vulnerability Mapping in the Northern Neck, Virginia

The following data list was compiled by the RAFT team at the University of Virginia’s Institute for Engagement & Negotiation, with input from RAFT implementation teams on the Northern Neck. Its purpose is to provide a consolidated source of data for mapping projects related to flood hazard vulnerability on the Northern Neck. [Virginia's Coastal Zone Locality Portals](#) are excellent places to start, and include locality-specific maps and up to date shoreline management data and tools. This document is subject to expansion and revision as needed.

### Flood hazards

Content	Source	Link
<b>Floodplains</b> <i>Special Flood Hazard Areas</i>	FEMA’s National Flood Hazard Layer Viewer, or GIS data locally maintained by your community (often at the county level).	Web viewer/ Download: <a href="https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd">https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd</a>
<b>Storm surge</b>	NOAA’s National Storm Surge Hazard Map	Web viewer: <a href="https://noaa.maps.arcgis.com/apps/MapSeries/index.html?appid=d9ed7904dbec441a9c4dd7b277935fad&amp;entry=1">https://noaa.maps.arcgis.com/apps/MapSeries/index.html?appid=d9ed7904dbec441a9c4dd7b277935fad&amp;entry=1</a>  Download: <a href="https://www.nhc.noaa.gov/nationalsurge/#data">https://www.nhc.noaa.gov/nationalsurge/#data</a>
<b>Sea Level Rise<sup>1</sup></b> <i>Resulting in:</i> <ul style="list-style-type: none"> <li>● <i>Permanent Inundation</i></li> <li>● <i>Tidal nuisance flooding</i></li> </ul>	NOAA’s Office of Coastal Management Sea Level Rise Map	Web viewer: <a href="https://coast.noaa.gov/slr/">https://coast.noaa.gov/slr/</a>  Download: <a href="https://coast.noaa.gov/slrdata/">https://coast.noaa.gov/slrdata/</a>
	AdaptVA	Web viewer: <a href="http://cmap2.vims.edu/AdaptVA/adaptVA_viewer.html">http://cmap2.vims.edu/AdaptVA/adaptVA_viewer.html</a>
<b>Shoreline erosion</b>	VIMS	Download: <a href="http://ccrm.vims.edu/gis_data_maps/data/index.html">http://ccrm.vims.edu/gis_data_maps/data/index.html</a>

<sup>1</sup> Note: NOAA’s data does not account for land subsidence’s influence on relative sea level rise.

<b>Surface (rain-driven) Flooding</b> <i>Influenced by:</i> <ul style="list-style-type: none"> <li>• High intensity precipitation events</li> <li>• Land cover type</li> <li>• Soil permeability</li> </ul>	<b>Precipitation:</b> NOAA	Download: <a href="https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=va">https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=va</a>
	<b>Land Cover:</b> Chesapeake Conservancy	Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=d64b1ee826d64c4b8267d82aa954e190">https://uvalibrary.maps.arcgis.com/home/item.html?id=d64b1ee826d64c4b8267d82aa954e190</a>  Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=d64b1ee826d64c4b8267d82aa954e190">https://uvalibrary.maps.arcgis.com/home/item.html?id=d64b1ee826d64c4b8267d82aa954e190</a>
	<b>Soil Permeability:</b> NRCS Soil Survey	Web viewer: <a href="https://www.arcgis.com/apps/View/index.html?appid=cdc49bd63ea54dd2977f3f2853e07fff">https://www.arcgis.com/apps/View/index.html?appid=cdc49bd63ea54dd2977f3f2853e07fff</a>  Download: <a href="https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>

### Public Assets

Content	Source	Link
<b>Transportation Infrastructure</b> <ul style="list-style-type: none"> <li>• Roads</li> <li>• Bridges</li> <li>• Road accessibility</li> </ul>	<b>Roads:</b> VGIN	Download: <a href="https://vgin.maps.arcgis.com/home/item.html?id=cd9bed71346d4476a0a08d3685cb36ae">https://vgin.maps.arcgis.com/home/item.html?id=cd9bed71346d4476a0a08d3685cb36ae</a>
	<b>Bridges/Culverts:</b> VDOT ( <a href="#">summary</a> of geospatial resources)	Web viewer/Download: <a href="https://www.virginiaroads.org/datasets/bridges-and-culverts/explore?location=37.657932%2C-76.387219%2C13.27">https://www.virginiaroads.org/datasets/bridges-and-culverts/explore?location=37.657932%2C-76.387219%2C13.27</a>
	<b>Road accessibility:</b> VIMS	Web viewer/Download: <a href="https://cmap2.vims.edu/VAroads/">https://cmap2.vims.edu/VAroads/</a> -

		CURRENTLY EXCLUDES NORTHERN NECK
<p><i>Note: water, electric, and gas infrastructure data is generally considered sensitive and is not publicly available. Contact your PDC to request this information on a case-by-case basis.</i></p>		
<p><b>Water Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Stormwater (Outlets, Pipes, Inlets)</li> <li>• Water supply (Public wells, groundwater management areas, water intake facilities, water treatment facilities, pumping stations, water mains/pipes)</li> <li>• Wastewater (wastewater treatment facilities, sewer pipes)</li> </ul>	<p><b>Domestic wells:</b> USGS</p>	<p>Download:  <a href="https://www.sciencebase.gov/catalog/item/5b9fffe6e4b08583a5c2779e">https://www.sciencebase.gov/catalog/item/5b9fffe6e4b08583a5c2779e</a></p>
<p><b>Energy Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Electric Transmission Lines</li> <li>• Gas Lines</li> </ul>	<p><b>Large transmission lines:</b> Federal User Community</p>	<p>Download:  <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=d4090758322c4d32a4cd002ffaa0aa12">https://uvalibrary.maps.arcgis.com/home/item.html?id=d4090758322c4d32a4cd002ffaa0aa12</a></p> <p>Web viewer:  <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=d4090758322c4d32a4cd002ffaa0aa12">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=d4090758322c4d32a4cd002ffaa0aa12</a></p>
<p><b>Critical Facilities</b></p> <ul style="list-style-type: none"> <li>• Hospitals</li> <li>• Health care sites (Red Cross)</li> <li>• Fire station</li> <li>• Police station</li> <li>• Food bank/food distribution center</li> <li>• Emergency Shelter</li> <li>• EOCs</li> </ul>	<p><b>Urgent care:</b> ArcGIS</p>	<p>Download and web viewer:  <a href="https://www.arcgis.com/home/item.html?id=335ccc7c0684453fad69d8a64bc89192">https://www.arcgis.com/home/item.html?id=335ccc7c0684453fad69d8a64bc89192</a></p>
	<p><b>Hospitals:</b> OpenStreetMap</p>	<p>Web viewer:  <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=8358ed7cf557497bbbed757678353c35">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=8358ed7cf557497bbbed757678353c35</a></p>
	<p><b>HSIP Local Emergency Operations Centers</b></p>	<p>Download:  <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=874798faedc74358bac9bbe1867af3c7">https://uvalibrary.maps.arcgis.com/home/item.html?id=874798faedc74358bac9bbe1867af3c7</a></p> <p>Web viewer:</p>

		<a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=874798faedc74358bac9bbe1867af3c7">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=874798faedc74358bac9bbe1867af3c7</a>
<b>Cultural/Historical Assets</b> <ul style="list-style-type: none"> <li>• Libraries</li> <li>• National Historic Sites</li> </ul>	<b>Libraries:</b> Redlands University	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=6e86666e20b6431098e648fdcd1ff537">https://uvalibrary.maps.arcgis.com/home/item.html?id=6e86666e20b6431098e648fdcd1ff537</a>  Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=6e86666e20b6431098e648fdcd1ff537">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=6e86666e20b6431098e648fdcd1ff537</a>
	<b>Historic sites:</b> ESRI	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=21883c1f18074c7bacb2b34de8304154">https://uvalibrary.maps.arcgis.com/home/item.html?id=21883c1f18074c7bacb2b34de8304154</a>  Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=21883c1f18074c7bacb2b34de8304154">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=21883c1f18074c7bacb2b34de8304154</a>

### Private Property

Content	Source	Link
<b>Parcels</b>	VGIN	Download: <a href="https://vgin.maps.arcgis.com/home/item.html?id=29627d7c051a47dc8ce71b4484531ab3">https://vgin.maps.arcgis.com/home/item.html?id=29627d7c051a47dc8ce71b4484531ab3</a>
<b>Structures</b> <ul style="list-style-type: none"> <li>• Building footprints</li> <li>• Repetitive Loss Structures</li> <li>• Affordable Housing</li> </ul>	<b>Building footprints: VGIN</b>	Download: <a href="https://vgin.maps.arcgis.com/home/item.html?id=994d0afa44c046498f9774613671ce9a">https://vgin.maps.arcgis.com/home/item.html?id=994d0afa44c046498f9774613671ce9a</a> - PARTIAL

<ul style="list-style-type: none"> <li>• <b>Nursing homes</b></li> </ul>		
	<b>Public housing:</b> HUD	Public housing web viewer and download: <a href="https://www.arcgis.com/home/item.html?id=d91b05b57d2140d097e12d1b23bc2abc">https://www.arcgis.com/home/item.html?id=d91b05b57d2140d097e12d1b23bc2abc</a>  Affordable Housing Brochure <a href="https://virginia.box.com/s/g2prao9zabe2za9elwomj9nenyb1lwi3">https://virginia.box.com/s/g2prao9zabe2za9elwomj9nenyb1lwi3</a>
	<b>Home Values:</b> Zillow	Portal: <a href="https://www.zillow.com/research/data/">https://www.zillow.com/research/data/</a>
	<b>Fair Market Rent:</b> HUD	Download: <a href="https://hudgis-hud.opendata.arcgis.com/datasets/12d2516901f947b5bb4da4e780e35f07_0/explore?location=41.323871%2C-70.313510%2C10.46">https://hudgis-hud.opendata.arcgis.com/datasets/12d2516901f947b5bb4da4e780e35f07_0/explore?location=41.323871%2C-70.313510%2C10.46</a>
	<b>Nursing Homes:</b> DHS	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=78c58035fb3942ba82af991bb4476f13">https://uvalibrary.maps.arcgis.com/home/item.html?id=78c58035fb3942ba82af991bb4476f13</a>  Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;panel=gallery&amp;suggestField=true&amp;layers=78c58035fb3942ba82af991bb4476f13">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;panel=gallery&amp;suggestField=true&amp;layers=78c58035fb3942ba82af991bb4476f13</a>
<b>Septic systems</b>		
<b>Private wells</b>	USGS	Download: <a href="https://www.sciencebase.gov/catalog/item/5b9fffe6e4b08583a5c2779e">https://www.sciencebase.gov/catalog/item/5b9fffe6e4b08583a5c2779e</a>
<b>Agricultural lands</b> <ul style="list-style-type: none"> <li>• Soil loss areas</li> <li>• Aquaculture leases</li> </ul>	<b>Soil Loss:</b> SSURGO	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=cf102251aac548f9a751968f3fa0c1da">https://uvalibrary.maps.arcgis.com/home/item.html?id=cf102251aac548f9a751968f3fa0c1da</a>

		Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=cf102251aac548f9a751968f3fa0c1da">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=cf102251aac548f9a751968f3fa0c1da</a>
	<b>Aquaculture:</b> VMRC	Web viewer: <a href="https://webapps.mrc.virginia.gov/public/maps/chesapeakebay_map.php">https://webapps.mrc.virginia.gov/public/maps/chesapeakebay_map.php</a>

## Demographics

Content	Source	Link
<b>Income</b> <ul style="list-style-type: none"> <li>Low income populations</li> <li>Medicaid recipients</li> </ul>	<b>Poverty Index:</b> HUD	Download: <a href="https://hudgis-hud.opendata.arcgis.com/datasets/3419cb4c7aa144b2bc54671f58b580f4_0/explore?location=38.244405%2C-76.645931%2C9.16">https://hudgis-hud.opendata.arcgis.com/datasets/3419cb4c7aa144b2bc54671f58b580f4_0/explore?location=38.244405%2C-76.645931%2C9.16</a>  Web viewer: <a href="https://hudgis-hud.opendata.arcgis.com/datasets/3419cb4c7aa144b2bc54671f58b580f4_0/explore?location=38.244405%2C-76.645931%2C9.16">https://hudgis-hud.opendata.arcgis.com/datasets/3419cb4c7aa144b2bc54671f58b580f4_0/explore?location=38.244405%2C-76.645931%2C9.16</a>
	<b>Medicaid recipients:</b> ACS	Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?webmap=85755e5c77764b83bb0a6bd63241fbbb">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?webmap=85755e5c77764b83bb0a6bd63241fbbb</a>
<b>Age/Ability</b> <ul style="list-style-type: none"> <li>Median age</li> <li>Percent 65+</li> <li>Disability</li> </ul>	<b>Median age:</b> ESRI	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=2848013f6a034e688ae76a798bb49d82">https://uvalibrary.maps.arcgis.com/home/item.html?id=2848013f6a034e688ae76a798bb49d82</a>  Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=2848013f6a034e688ae76a798bb49d82">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=2848013f6a034e688ae76a798bb49d82</a>
	<b>Percent of Population over 65:</b> ACS	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=48a70b52460142">https://uvalibrary.maps.arcgis.com/home/item.html?id=48a70b52460142</a>

		<a href="#">8ba297e3106b751401</a> Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?webmap=48a70b524601428ba297e3106b751401">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?webmap=48a70b524601428ba297e3106b751401</a>
	<b>Percent of elderly population with a disability: ACS</b>	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=ef1492a820674160ba6815c5e1637c27">https://uvalibrary.maps.arcgis.com/home/item.html?id=ef1492a820674160ba6815c5e1637c27</a> Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=ef1492a820674160ba6815c5e1637c27">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=ef1492a820674160ba6815c5e1637c27</a>
<b>English-speaking</b>	ACS	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=527ea2b5ba814c8ca1c34a2945e1b751">https://uvalibrary.maps.arcgis.com/home/item.html?id=527ea2b5ba814c8ca1c34a2945e1b751</a> Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=527ea2b5ba814c8ca1c34a2945e1b751">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=527ea2b5ba814c8ca1c34a2945e1b751</a>

#### Access assets/barriers

Content	Source	Link
<b>Communication</b> <ul style="list-style-type: none"> <li>• Broadband Coverage</li> <li>• Wifi hotspots</li> <li>• Cell service coverage</li> </ul>	<b>Broadband:</b> Virginia open data portal	Download: <a href="https://data.virginia.gov/Geographic-Information/FCC477-Virginia-Broadband-Dataset/295a-pzph">https://data.virginia.gov/Geographic-Information/FCC477-Virginia-Broadband-Dataset/295a-pzph</a>

	<b>Wifi hotspots:</b> Virginia open data portal	Download: <a href="https://data.virginia.gov/Geographic-Information/Virginia-Public-WiFi-Hotspots-Shapefile/ng6n-ag4g">https://data.virginia.gov/Geographic-Information/Virginia-Public-WiFi-Hotspots-Shapefile/ng6n-ag4g</a>
	<b>Cell Towers:</b> ESRI	Download: <a href="https://uvalibrary.maps.arcgis.com/home/item.html?id=15dabb4108254481b591018be2598f3c">https://uvalibrary.maps.arcgis.com/home/item.html?id=15dabb4108254481b591018be2598f3c</a>  Web viewer: <a href="https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=15dabb4108254481b591018be2598f3c">https://uvalibrary.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&amp;layers=15dabb4108254481b591018be2598f3c</a>
<b>Transportation</b> <ul style="list-style-type: none"> <li>● <i>Bay Aging Transit Routes</i></li> <li>● <i>Meals on Wheels Routes</i></li> <li>● <i>Housing units with no car</i></li> </ul>	<ul style="list-style-type: none"> <li>● Not currently available, add if possible</li> </ul>	