

A Best Practices Guide for Local Governments in Virginia

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Proactive Planning for Climate Resilience

A Guide to Community-Led Adaptation in Virginia

Prepared by

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Community-Centric Adaptation Planning



Introduction

- What is Resilience?
- Equity concerns must be addressed and full community engagement incorporated at each step of the planning process, not as a separate topic
- Adaptation is a community-specific, iterative process that needs to be reassessed and updated periodically
- Adaptation does not have to be a sudden upheaval; planned change can occur step by step, with trade-offs made each step of the way. Managed retreat is at one end of the spectrum.
- The need to identify community “tipping points” and timeline
- VA-specific background issues – CRMP, Dillon Rule, independent cities

The Seven Steps Each Will Include:

- Description
- Best Practices
- Community Engagement and Equity Concerns
- Helpful Tools & Resources
- Challenges & Pitfalls to Avoid
- Innovative Ideas
- Case Study(ies)
- Funding Sources and Challenges

Step 1 - Initial Assessment: Research Current Conditions & Vulnerabilities and Projected Climate-Related Risks & Impacts

- Research current and future vulnerabilities, risks and impacts, and assess current programs. Consider predicted changes in the frequency, severity and extent of each risk. Also determine the sequence of impacts. Engage the community to ensure their input.
- **Sample Best Practices:**
 - Collaborate with local experts;
 - Identify stakeholders and trusted partners;
 - Assess impacts to all Adaptation Planning Areas: transportation & stormwater infrastructure, housing, water supply & wastewater management, social resilience, economic resilience, and historic, cultural and natural resources.
 - Consider creating workgroup with representatives from across community and expertise in each Adaptation Planning Area to help lead this work.

Tools & Resources – *Way Too Many!*

- Which to include / emphasize?
 - What are the top 3-5 ones that you use?
 - Which do you think would be most helpful to local governments?
 - Are there any that are problematic for general public use? (i.e., not user friendly)

General Climate Adaptation & Resilience Planning Tools and Resources

- The US Climate Resilience Toolkit
- FEMA's updated (2023) Local Mitigation Planning Handbook
- The Resilience Adaptation Feasibility Tool (RAFT)
- The [Planning for Resilience: Evaluation and Prioritization \(PREP\) Tool | Resilience Adaptation Feasibility Tool - RAFT \(virginia.edu\)](#)
- Planning story map on VIMS' Adaptva website
- Wetlands Watch's SLR Adaptation Guide
- NOAA Digital Coast website - Adaptation Strategies
- Urban Sustainability Network's Guide to Equitable Community-Driven Climate Preparedness Planning
- Georgetown Climate Center's Equitable Adaptation Legal & Policy Toolkit
- Green 2.0's Coastal Considerations: Improving NGO Engagement with Coastal Communities of Color
- US DHS' Plan Integration for Resilience Scorecard

Helpful Tools to determine current climate-related risks and vulnerabilities

- The [Virginia Flood Risk Information System](#) (VFRIS) to determine flood zones and the extent of any SFHA within a locality.
- The Regional Hazard Mitigation Plan
- FEMA National Flood Hazard Layer on NOAA Office for Coastal Management's Digital Coast map
- FEMA's Resilience Analysis Planning Tool (RAPT)
- NOAA's Center for Operational Oceanographic Products and Services (CO-OPS)' coastal hazards portfolio, including sea level and coastal flooding information ([Sea Level Information -NOAA Tides & Currents](#))
- NOAA National Hurricane Center's National Storm Surge Hazard Maps
- Yale School of Public Health map of Heat Vulnerability Index by census tract: [Disparities in Heat Vulnerability in the United States \(arcgis.com\)](#)
- US Climate Resilience Toolkit's Climate Explorer showing projected climate conditions (including temperature changes) by county in graph or map format; [Climate Vulnerability Map | U.S. Climate Resilience Toolkit](#) showing how climate is expected to shift

Helpful Tools to determine predicted climate-related risks

- NOAA MARISA's Community Climate Outlooks - **heat, flooding and storm surge** predicted risks for communities throughout DE, MD, PA, VA and Washington, D.C.
- The NOAA MARISA *Projected Intensity-Duration-Frequency (IDF) Curve Data Tool for the Chesapeake Bay Watershed and Virginia* to determine a community's projected increase in **rainfall**.
- NOAA's Digital Coast, including a **SLR Viewer** and High Resolution Land Cover Data
- VIMS' Adaptva.org website for mapped predicted **sea level rise and flooding** data
- The *Coastal Virginia Sea Level with Minor and Moderate Flooding* map viewer showing **flooding due to sea level rise** for the years 2040, 2060, and 2080
- VIMS' Climate Change Impacts in Virginia: A **Natural Resource** Database
- NOAA National Centers for Environmental Information's *U.S. Billion-Dollar Weather and Climate Disasters*, **Disaster Cost & Frequency** Mapping Tool and **Hazards Risk & Vulnerability** Mapping Tool - information available at county level
- NCA5 Interactive Atlas - **climate conditions** predicted by region for later this century
- EPA's Vulnerability Self-Assessment Tool: Conduct a **Drinking Water or Wastewater** Utility Risk Assessment and Climate Resilience Evaluation & Awareness Tool (CREAT)
- For vulnerability of **transportation** systems: USDOT Vulnerability Assessment Scoring Tool (VAST)

Helpful tools to identify physically and socially vulnerable communities

- EJScreen: Environmental Justice Screening and Mapping Tool, <https://www.epa.gov/ejscreen> (environmental & demographic indicators)
- EPA Climate & EJ Screening Tool - [Explore the map - Climate & Economic Justice Screening Tool \(geoplatform.gov\)](#) - shows census tracts that are overburdened and underserved
- EPA Inflation Reduction Act Environmental & Climate Justice Program - financial and technical assistance to carry out environmental and climate justice programs. [EPA IRA Disadvantaged Communities map](#) layer helps to identify whether a community is disadvantaged.
- US Census Bureau's Community Resilience Estimates, to obtain social vulnerability data (<https://www.census.gov/programs-surveys/community-resilience-estimates.html>)
- The RAFT's [Exercise Contextualizing Natural Hazards and Impacts on Vulnerable Populations Final.pdf \(virginia.edu\)](#)
- Mapped social vulnerability data layer on <https://www.adaptva.org/>

Step 2: Community Engagement to Establish Priorities & Timeline

- Inform the public of the results of the vulnerability & risk assessments, get their feedback, and revise accordingly. Engage the full community to determine their “tipping points” for pursuing adaptation measures, the timeline for responses/adaptations, and their priorities for responses.
- **Sample Best Practices:**
 - define terms such as “resilient community” and “social resilience”;
 - post information at libraries, grocery stores, bus stops & food banks as well as on website and social media;
 - host community-wide workshops in the day & evening in a variety of locations, and consider offering community participatory mapping and surveys;
 - discriminatory history & impacts must be acknowledged and addressed;
 - look for partnerships with religious organizations, NGOs, etc. to expand efforts

Step 3: Strategy Development: Evaluate Options for Each Adaptation Planning Area

- Assess options available to address the locality's current and predicted risks & vulnerabilities, taking into account the community's priorities and "tipping points". Develop strategies to address each Adaptation Planning Area, and associated costs. Include short and long-term goal setting and success metrics. Prioritized strategies should include a focus on specific locations and risks. Strategy may include key partners, alliances and collaborations needed to accomplish the work.
- **Options:**
 - Planning
 - Land Use Ordinances (conservation, zoning, TDR programs, urban tree ordinances, flood plain management)
 - Building Codes
 - Green and gray infrastructure (living shorelines, beach replenishment, sea walls)
 - Stop gap measures (elevated buildings; elevated septic and other new innovations/technologies)
 - Relocation (buyouts, rolling easements, incentivized relocation like Norfolk has done via its zoning code)
- **Challenges:** Heirs Property; pricing people out of safe housing on higher ground; easements only benefit landowners who can use the tax credits; relocation assistance needs to include renters, owners of homes on leased land, and heirs property owners; community's willingness to pursue some options will change over time; don't assume FEMA will/can do more than it can!
- **Innovative Ideas:** density bonuses on receiving lots for people moving due to buy-outs; community land trusts; incentives for impervious cover reduction; cross-cutting strategies to meet multiple goals, like GI that stops erosion and provides flood buffer & public water access

Step 4: Detailed Planning: Develop Adaptation Action Plan

- Develop a detailed plan with a timeline and costs for implementing the strategies. The time horizon should align with the comprehensive plan update cycle and also have a longer-term component. The Plan should identify specific actions to be taken along with the resource needs and the timing, and any dependencies among those actions. The Plan should be developed so that it can be easily integrated into the locality's comprehensive & capital improvement plans and budget.
- **Sample Best Practices:**
 - Need short-term and long-term planning
 - Distribution/Publicity/Where to House the Plan
 - Adequate Staffing of the effort

Step 5: Funding: Select and Seek Funding Sources

- Develop a comprehensive listing of all potential funding & financing sources. Match funding to specific actions to be taken, and then secure funding on the needed timeline. This section should estimate potential funding levels and compare back to cost estimates for specific strategies.
- Refer to VA DCR Coastal Resilience Master Plan website for full list
- **Helpful Tool:** The American Society of Adaptation Professionals' [Ready-to-Fund Resilience Toolkit - Adaptation Professionals](#)
- **Some new resources:**
 - Community Reinvestment Act
 - 2 new Sentinel Landscapes designated last year by the DoD (the Potomac Sentinel Landscape, anchored by Marine Corps Base Quantico, and the Tidewater Sentinel Landscape, anchored by Joint Base Langley Eustis) that will attract federal funding for land preservation and technical assistance
 - Parametric insurance

Step 6: Plan Implementation

- Obtain approval of governing board, and set timeline for revisiting the plan. Develop strategy for publicizing the plan and assign sufficient staff to interact with the public and to track necessary changes that come to light.

Step 7: Plan Evaluation and Adjustment

- Track plan performance against metrics and success criteria. Adjust as necessary due to changed conditions or failed funding efforts, and seek replacement funding as needed. Revise plan timeline as necessary. Re-engage community regarding any evolving priorities or timelines.

Additional Questions

- Suggestions for best practices to include?
- Suggestions for determining community “tipping points”?
- Informative case studies / lessons learned to share, for any of the steps?